Improving Patient Comfort with Nonpharmacologic Therapies

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# Abstract

This quality improvement (QI) project was conducted on a 32-bed medical telemetry unit at a 235-bed hospital. The reason this project was chosen because the opioid crisis needs to be alleviated and one way we can help it is through the use of nonpharmacologic therapies when treating pain. The site understood the severity of the opioid crisis and had multiple nonpharmacologic therapies available for their patients. Despite this, the patient charts reflected that a nonpharmacologic therapy was only used 10% of the time when a patient complained of pain. The goal of this QI project was to increase the utilization, consistency, and completeness of nursing documentation on the use of the site’s nonpharmacologic therapies. In order to meet these objectives, the project focused on two components including relevant education for nurses on the benefits of the use of nonpharmacologic therapies and the creation and distribution of a patient comfort menu. This QI project potentially fulfilled the three dimensions of the Triple Aim. Patient satisfaction may have improved because patients were able to direct and control their pain by selecting nonpharmacologic therapies. Second, population health was possibly enhanced because patients were now empowered to direct their care which provided the potential for less nosocomial complications and subsequent outpatient opioid abuse.  Finally, reducing the per capita cost of health care may have been fulfilled as most of the nonpharmacologic therapies offered on the new patient comfort menu were free services.

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Improving Patient Comfort with Nonpharmacologic Therapies

# **CHAPTER 1**

Healthy People 2020 has included substance abuse as one of its 10-year national objectives in order to improve the health of the American nation (Healthy People, n.d.).  Opioid drug abuse and misuse is a substantial and growing economic cost burden in the United States (U.S.) (Chang & Compton, 2016).  The Centers of Disease Control (CDC) estimate that $72.5 billion is spent annually in direct health care costs for the nonmedical use of prescription opioid drugs by health insurers (Chang & Compton, 2016).  North Carolina (NC) has had a significant increase, 14.1%, in overdose death rates from 2014 to 2015 (Centers for Disease Control and Prevention [CDC], 2016b).  In 2014, 1,358 people in NC died from a drug overdose, which is more than the number that died in an automobile accident (CDC, 2016b).  Increased attention needs to be paid to the role that inpatient opioid prescribing plays in the increased rates of chronic opioid use and overdose-related deaths (CDC, 2016b).  According to a study done by Herzig, Rothberg, Cheung, Long, & Marcantonio (2014), almost half of hospitalized non-surgical patients received opioids and even more received a prescription for opioids upon discharge.

The use of nonpharmacologic therapies in pain management has been shown to reduce opioid-related complication rates, pain scores, and postoperative nausea, while improving patient satisfaction and quality of recovery (Lee, Lee, & Choy, 2013).  Within the CDCs’ guidelines for prescribing opiates is the use of multi-modal non-opioid management strategies (Centers for Disease Control and Prevention [CDC], 2016a).  The CDC used reviews of evidence, expert input, and deliberation by a federally charted committee in order to create their guidelines on the use of nonpharmacologic treatments (CDC, 2016a).  This is directly in line with national efforts to limit opioid drug prescription and adopt an opioid-sparing approach.  By implementing the usage of nonpharmacologic therapies in the treatment of pain, the dosage of analgesic medications can be decreased, thereby decreasing side effects, especially when using opioids (University of Florida College of Medicine, 2016). 

**Background and Significance**

The rise in overdose death rates and the increase in the nonmedical use of opioids has been linked to the increasing rates of opioid prescriptions written by health care providers in the US (CDC, 2016b).  Due to these reasons, the federal government and multiple public health organizations are actively involved in the treatment and prevention of opioid drug misuse and abuse.  The CDC has highlighted the necessity for intense attention and action to the ongoing epidemic of opioid deaths (CDC, 2016b).  Along with the CDC, the Joint Commission (TJC) also endorses using an individualized pain management treatment plan that includes nonpharmacologic approaches (The Joint Commission [TJC], 2012).  Nonpharmacologic alternatives, per TJC (2012), include physical therapy, acupuncture, manipulation or massage, ice, and music therapy.  The project site recognizes the importance of utilizing nonpharmacologic therapies, as suggested by the CDC and TJC, to aid in the treatment of pain in order to improve patient outcomes, decrease length of stay, provide low cost options, improve sleep, and increase mobility (Jarrett, Church, Fancher-Gonzalez, Shackelford, & Lofton, 2013).

**Problem Statement**

The federal government and public health organizations are actively involved in the treatment and prevention of opioid drug abuse and mortality by including complementary and alternative medicine (CAM) (Volkow, 2015).  Currently, the project site is working to include principles of holistic and integrative nursing care with the use of nonpharmacologic therapies to create an optimal healing environment (Halm & Katseres, 2015).  This environment is one in which self-care, healing presence, patient-centered care, and relationship-based care are the standard (Halm & Katseres, 2015).  The site’s goal is to allow patients to become partners in their health and well-being and therefore empowered to direct their own care (Halm & Katseres, 2015).

Despite the institution efforts to utilize this form of therapy, current use and documentation at this facility has been less than 10% (L. Foster, personal communication, May 19, 2016).  According to Delgado et al. (2014), nonpharmacologic therapies are safe and cost-effective therapies with encouraging results for pain control.  Multiple studies have shown that in order for nurses to educate their patients, assess their patients’ current use of, and advocate for the use of nonpharmacologic therapies in pain management, they must be familiar with the terminology and practice methods (Buchan, Shakeel, Trinidade, Buchan, & Ah-See, 2012 Geisler, Cheung, Steinhagen, Neubeck, & Brueggeman, 2015; Song, Eaton, Gordon, Hoyle, & Doorenbos, 2016; Spencer et al., 2016; Trail-Mahan, Mao, & Bawel-Brinkley, 2013).

**Purpose**

The use of nonpharmacologic methods has been proven to aid in the management of pain in several studies (Morales-Fernandez, Morales-Asencio, Canca-Sanchez, Moreno-Martin, & Vergara-Romero, 2015; Nahin, Boineau, Khalsa, Stussman, & Weber, 2016).  The project site is focusing on the use of nonpharmacologic therapies to reduce pain and increase patient comfort, rather than relying on strictly opioids for pain management.  The purpose of this project was to provide education to nurses to increase the charting and use of nonpharmacologic therapies for patients in pain.  In addition, a menu of options for patients regarding various nonpharmacologic available therapies and benefits of the use of these therapies was created in order to increase their utilization.

**Theoretical Framework**

The theoretical framework that guided this project was Jean Watson’s model of caring.  Watson’s 10 caritas processes influenced patient care in order to promote healing, preserve dignity, and respect the nature of a holistic nursing practice (Vandenhouten, Kubsch, Peterson, Murdock, & Lehrer, 2012).  Using Watson’s theory of caring helped nurses to provide holistic care that allows their patients to play a proactive role in their pain management process (Vandenhouten et al., 2012).  By focusing on nurturing the mind, body, and spirit simultaneously, patients are able to become active participants in making their healthcare decisions and maximizing their healing and wellness (Butts & Rich, 2015).  Nurses are trained to holistically care for a person by promoting their self-care, independence, and well-being (Santos & Lima-Basto, 2014).  By increasing their current knowledge of pain management with nonpharmacologic therapies, nurses are able to play a key role in the management of pain (Geisler et al., 2015; Hall, Leach, Brosnan, & Collins, 2017; Morales-Fernandez et al., 2015).

Watson believed that good health is the absence of illness, or the presence of efforts that lead to an illnesses absence (Butts & Rich, 2015).  Nursing is instrumental in good health according to Watson and encompasses the collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings (Halm & Katseres, 2015).  Nursing includes the prevention of illness, promotion of health and the care of ill, disabled, and dying people (Epstein & Turner, 2015).  In addition, per Epstein & Turner (2015), patient advocacy, promotion of a safe environment, research, participation in shaping health policy, participation in health systems management, and education are also key nursing roles.

Advancements in the treatment of pain with opiates alone have not been successful (Delgado et al., 2014).  When nurses are able to understand, feel confident in, and help their patients utilize nonpharmacologic therapies effectively, they will have the opportunity to provide excellent care and better outcomes for the patients they serve (Costello & Thompson, 2015; Costello, Thompson, Aurelien, & Luc, 2016; Geisler et al., 2015; Trail-Mahan et al., 2013).  It is vital for nurses to focus on the patient and to provide holistic care at all times and using Watson’s theory can effectively help to guide their practice (Epstein & Turner, 2015).  By keeping in mind each patient’s beliefs and values, nurses can properly care for their patients and help them modify behaviors, to include the use of nonpharmacologic therapies, in order to become healthy and manage their symptoms (Butts & Rich, 2015).

Project Questions

The patient/problem, intervention, comparison, outcome (PICO) question answered is whether or not relevant nurse education and a patient nonpharmacologic therapy menu will increase the charting of use and utilization of these therapies to greater than 10%.  The Complementary, Alternative and Integrative Medicine Attitudes Questionnaire (CAIMAQ) was administered to determine the sites nurse’s knowledge and attitudes regarding the use of complementary and alternative therapies (Abbott et al., 2009).  Relevant education on these therapies was provided based on questionnaire results and areas where knowledge deficits were noted.  In addition to education for the nurses, a patient comfort menu was created for distribution and included all of the nonpharmacologic therapies available at the project site.  Daily patient chart audits were conducted both prior to and following initiation of education and distribution of the menu.

**Definition of Terms**

Alternative therapies/medicine: Alternative therapy is use of a non-mainstream practice or healing approach instead of conventional Western medicine (National Center for Complementary and Integrative Health [NIH], 2016).

Complementary and Alternative Medicine (CAM): An acronym for the term that encompasses the therapies available to either complement or use alternatively with conventional Western medicine (NCCIH, 2016).  CAM is generally not considered part of conventional medicine and includes a group of diverse medical and healthcare systems, practices, and products (NCCIH, 2016).

Complementary therapies/medicine: Complementary therapy is blending non-mainstream practice and using in conjunction blended and used together with conventional medicine (NCCIH, 2016).

Complementary and alternative therapies (C/ATs): Encompass health-related therapies and disciplines that are not considered to part of mainstream nursing or medical care (Buchan et al., 2012).

Integrative medicine or integrative health care: Usually occurs in a health care setting in which CAM practices and services are integrated along with conventional treatments (Halm & Katseres, 2015).

Nonpharmacologic: Refers to therapy that does not involve drugs and can include CAM (NCCIH, 2016).

Opioid epidemic: Overdoses from prescription opioids are a driving factor in the 15-year increase in opioid overdose deaths (CDC, 2016b).

Self-management: “a single approach or combination of approaches that can be initially taught by any health professional or learned by an individual to enable them to minimize the impact that chronic pain can have on everyday life” (Boyers et al., 2013, p. 367).

Summary

This project potentially fulfilled the three dimensions of the Triple Aim by improving patient experience of pain, improving the health of populations, and reducing the per capita cost of health care (Institute for Healthcare Improvement [IHI], 2017).  First, patient satisfaction, as it relates to pain experience, could have been improved because patients were able to direct and control their pain by selecting nonpharmacologic therapies (Halm & Katseres, 2015).  Second, population health possibly improved because there may be less reliance on opioids to treat pain, with potential for less nosocomial complications and subsequent outpatient use (Herzig et al., 2014; Trail-Mahan et al., 2013).  Finally, the per capita cost of health care may have been reduced with the use of nonpharmacologic therapies, as they are often free services.  According to Davis, Bateman, & Avorn (2017), the opioid epidemic needs to be combated in order to decrease human and economic costs.  With the use of nonpharmacologic therapies for pain, there is an increased chance that emergency department or intensive care unit stays can be prevented and patients’ can be protected from pain medication addiction (Davis et al., 2017).

By using two project tools, nurse education and the patient comfort menu with available therapies, nurses were able to effectively help in-patient pain care plans with the use of nonpharmacologic therapies.  With the inclusion of these therapies, nurses were able to provide holistic quality care to patients who were dealing with pain (Spencer et al., 2016).  This project showed that nurses are capable of offering nonpharmacologic therapies that can keep patients safe from incurring adverse effects from opiates.  The results of this project were tracked through the usage and charting of these therapies, and was able to meet goal usage of greater than 10%.

CHAPTER 2

Review of the Literature

A literature review was completed to determine the effectiveness of education and the use of nonpharmacologic therapies.  In order to narrow the searches, the limiters of English language, full text online, scholarly and peer reviewed, and last five years were used.  An extensive PubMed literature search was used with thirteen different key term search combinations.  Twenty-seven search words used in multiple different combinations and included adverse effects, adverse events, caring, complementary, complementary therapies, complementary and alternative medicine, cost effectiveness, education, holistic, holistic nursing, hospital, integrative, integrative care, knowledge, medicine, nurse, nurses attitudes, nursing, opioid, pain, pain assessment, pain management, patient, patient care, quality, quality improvement, self-management, theory, and therapies.  The PubMed search yielded 2,315 articles, which were narrowed down to 20.  A CINAHL search via EBSCOhost was conducted using the key search terms of nurse, complementary/alternative therapies, integrative care, and hospital.  This search produced 401 articles and two were used.

Articles were excluded if they pertained to a specific disease process, were conducted in another country other than the U.S., if a specific nonpharmacologic therapy was listed, or certain populations including age group or gender were the only ones studied.  Research articles included were those that were non-specific to a type of nonpharmacologic therapy or population. The inclusion criteria for articles were those that had nurses or patients as the focus.  In order to be used the articles needed to fall into one of the five main topics that included nursing education, nonpharmacologic therapies, nurse led interventions, impact of patient education or empowerment, and Jean Watson’s theoretical framework.

Nursing Education

In order for nurses to appropriately offer and counsel their patients on the use of nonpharmacologic therapies, they must be aware of their benefits and risks (Buchan et al., 2012; Costello & Thompson, 2015; Trail-Mahan et al., 2013).  Nurses represent the largest health workforce and they spend the most time with patients during hospital stays (Jarrett et al., 2013; Song et al., 2016).  Because of their pivotal role in patient care, education, advocacy, and decision-making, nurses are in an excellent position to provide nonpharmacologic therapy instructions (Jarrett et al., 2013; Song et al., 2016).  Due to their provision of holistic health care, they are well-positioned to lead the transformation of pain management that emphasizes the use of non-drug, complementary integrative care (Bruckenthal, Marino, & Snelling, 2016).  Nurses are vital in the management of pain and research indicates that there is a deficit in their knowledge in pain management and the use of nonpharmacologic therapies (Buchan et al., 2012; Geisler et al., 2015; Song et al., 2016; Spencer et al., 2016; Trail-Mahan et al., 2013).  They are dedicated patient advocates who provide comprehensive, compassionate, and holistic care to their patients and they need to understand their role in maintaining patient safety while also providing them increased options for pain management (Santos & Lima-Basto, 2014).  They must be knowledgeable about nonpharmacological therapies for pain treatment due to the complexity of pain and the widespread misuse of opiates (Jarrett et al., 2013; Song et al., 2016).

Based on a descriptive cross-sectional design to review patient medical record findings Song et al. (2016) recommended that documentation guidelines, institutional policies, and nonpharmacologic pain management interventions should be provided periodically to health care staff.  This was their recommendation due to the suboptimal pain documentation regarding pain reassessment, pharmacologic intervention, and bowel regimen found in their study (Song et al., 2016).  Their research indicated that the inadequacy or absence of documentation raises the question of the quality of evidence-based pain management provided to patients (Song et al., 2016).  According to Song et al. (2016), in order to improve patient’s pain management and nurses’ consistency with providing the best and current evidence-based pain management, nurses should receive education with the use of visual handouts or posters in the unit, one-on-one mentoring, or a monthly in-service.

Buchan et al. (2012) conducted a cross-sectional questionnaire study of 621 nurses and had similar findings in the necessity of formal education to complement conventional medicine with the evidence-based knowledge regarding CAM to safely and effectively manage pain.  The study found that the majority of participants, 71%, believed that with education on CAM, they would be better able to counsel their patients on its usage, benefits and risks (Buchan et al., 2012).  Nurses are relied on for advice regarding the use of nonpharmacologic therapies because most often they are one of the first people patients encounter when in the hospital and are requiring pain management (Buchan et al., 2012).  Geisler et al. (2015) conducted a mixed-method cross-sectional online survey of 2,874 licensed Nurse Practitioner’s (NPs) regarding their attitudes, knowledge, beliefs, use, and referrals and dialogue with patients regarding complementary/alternative therapies (C/ATs).  Their study showed that increased rates of referral, belief, and use of C/ATs occur when the provider has greater knowledge regarding them and this knowledge can be attained through formal education (Geisler et al., 2015).  When nurses’ felt that they had effective understanding of these therapies, they were more likely to open up a conversation to offer and provide them to their patients (Geisler et al., 2015).

 Spencer et al. (2016) completed a study of 175 oncology nurses that found a linear relationship between nurses’ comfort level in their knowledge of CAM and their odds of both asking and referring patients to these therapies.  Their study found that even small incremental increases in nurses’ comfort levels regarding CAM can lead to more evidence-based referrals and increase the chance that patients will use these therapies to improve their quality of life and possibly even their clinical outcomes (Spencer et al., 2016).  This study concluded that education supports nurses in making informed referrals to evidence-based non-pharmacologic pain management which can aid in improving patient care and safety (Spencer et al., 2016).

A similar study by Trail-Mahan et al., (2013) showed that nurses must be aware of CAM in order to integrate and advocate for them in their nursing practice.  It was a descriptive study of 153 nurses and concluded a basic knowledge of CAM practices is a nurses’ responsibility when caring for their patients.  Their study found that baseline knowledge of CAM was very poor at average of only 51% of respondents answering questions correctly (Trail-Mahan et al., 2013).  Fewer than half, 47%, were able to correctly define complementary medicine and only 33% were able to define complementary and alternative medicine (Trail-Mahan et al., 2013).  Trail-Mahan et al. (2013) concluded that education is necessary so that nurses can competently advise patients about the comprehensive care options available to them.

Nonpharmacologic Therapies

According to a retrospective cohort database study done by Minkowitz, Gruschkus, Shah, & Raju (2014), when opiates are started in the hospital and adverse events occur, consequences could include higher costs, higher rates of hospital readmission, and longer lengths of stay.  The incorporation of nonpharmacologic methods aimed at alleviating pain has been widely used by about 59 million of the U.S. population (Nahin, et al., 2016; Spencer et al., 2016).  Per the NCCIH (2016), the most common reason why American adults use complementary health approaches is to help treat painful conditions.  Medications may provide only partial relief and the unwanted effects can often outweigh the benefits and could be a factor in approximately $30.2 billion out-of-pocket costs for nonpharmacologic therapies (Nahin et al., 2016).  These therapies have a potential to relieve pain, which in turn improves functionality, reduces depression symptoms, and improves the quality of life for people with pain (Bruckenthal et al., 2016).

Many of these alternatives offer the potential benefits of safety, low cost, and ease of administration (Montross-Thomas et al., 2017; Singer & Adams, 2014).  A holistic approach that acknowledges the individual as a whole incorporates and integrates self-care nonpharmacologic therapies can help improve a patient’s quality of life and possibly even clinical outcomes (Carr et al., 2014; Jarrett et al., 2013; Spencer et al., 2016).  Healthcare is evolving and there is growing evidence for the efficacy of nonpharmacologic treatments along with increasing consumer demand (Knutson, Johnson, Sidebottom, Fyfe-Johnson, 2013; Spencer et al., 2016).  Knutson et al. (2013) shared lessons learned from the development and growth of a nursing-led model that integrated CAM services in a 629-bed hospital in the Midwest.  They focused on the importance of the use of nonpharmacologic therapies in the hospital due to both the increasing demand for these services and to transform the hospital setting into an optimal healing environment (Knutson et al., 2013).

Boyers et al. (2013) completed a systematic literature review of randomized controlled trials and reviewed ten trials that reported cost utility, effectiveness, minimization, and benefit analyses when using self-management techniques to manage pain.  When alleviating pain with nonpharmacologic therapies, there is a reduced use of costly health care resources because patients are empowered to control their pain and in turn require fewer visits to their health care providers (Boyers et al., 2013).  Per the 2012 National Health Interview Survey (NHIS) conducted by the NIH, the ten most common complementary health approaches among adults included natural products (botanicals, vitamins and minerals, and probiotics), deep breathing, Yoga/Tai Chi/Qi Gong, chiropractic/osteopathic manipulation, meditation, massage, special diets, homeopathy, progressive relaxation, and guided imagery (NCCIH, 2016).  More than 30% of American adults use complementary and alternative therapies for their health and wellness (NCCIH, 2016).

Nurse Led Interventions

Knutson et al. (2013) described the successful development and evolution of a nursing-led model for the integration and bridging of conventional medicine paradigms with the use of nonpharmacologic therapies in an inpatient setting.  They described the program at the largest inpatient integrative healthcare programs in the country whose pain management goals were aligned with TJC standards regarding the inclusion of nonpharmacologic approaches (Knutson et al., 2013).  This program was formed in 2003 and has continued to receive hospital funding and donations due to its improvement in pain management and patient experience scores (Knutson et al., 2013).  A nursing framework was developed for their model for delivery as their research showed that nurses were necessary to bridge conventional medicine and the CAM world (Knutson et al., 2013).

In addition to Knutson et al. (2013) supporting nurses to be instrumental in creating optimal healing environments using nonpharmacologic therapies, Trail-Mahan et al. (2013) discussed the foundation of the nursing practice, which includes comprehensive, compassionate, and holistic care.  Trail-Mahan et al.’s (2013) research showed that CAM practices fit nursing practice as it embodies the ideals of holism and offers patients multiple options for healing and nurturing the mind, body, and spirit.  The treatment of the whole individual, recognizing the relationship of mind, body, and spirit in the healing process is the goal of holistic care (Trail-Mahan et al., 2013).  Trail-Mahan et al. (2013) conducted their study on nurses’ knowledge and attitudes regarding CAM because they recognized that the use of these therapies offered nurses the opportunity to provide holistic care.

Williams et al. (2012) completed a study on the feasibility and effect of implementing a hospital-wide coordinated approach to pain management with the use of Pain Resource Nurses (PRNs).  During their study, they introduced PRNs into two acute care hospitals in Western Australia and focused on three evidence-based indicators of change in pain management (Williams et al., 2012).  The three indicators included the percentage of patients who had a documented pain score on admission, a documented pain score during each nurse’s shift, and those who had been prescribed opioids for pain that also received a laxative.  They found that PRNs were useful and effective when introducing and sustaining an evidence-based organizational change (Williams et al., 2012).

According to a meta-synthesis of literature by Hall et al. (2017), nurses have reported that the reason they incorporate nonpharmacologic therapies with their patients is due to the respect they have for them and the goal to provide holistic care.  Nurses feel that through the use of these therapies, they can empower their patients and provide them with patient-centered care (Hall et al., 2017).  Hall et al. (2017) emphasized that nurses play a pivotal role in patient care, education, advocacy, and decision-making and because of this, are well-positioned to discuss nonpharmacologic therapies with patients.  Their synthesis of the literature found that the use of these therapies had inherent characteristics that enhanced the nursing practice and led to higher job satisfaction for nurses (Hall et al., 2017).  Nurses were empowered to become better nurses by allowing them to have multiple options to make their patients feel better, create opportunities to spend more time relationship building with the patient, and ensure a higher level of physical and spiritual care for their patients (Hall et al., 2017).

Nonpharmacologic interventions are part of evidence-based pain management and when used have been shown to improve pain management outcomes, lessen hospital length of stay, decrease resource utilization, and improve patient satisfaction (Jarrett et al., 2013).  According to the CDC, “extensive evidence suggests some benefits of nonpharmacologic and non-opioid pharmacologic treatments compared with long-term opioid therapy, with less harm” (CDC, 2016b).  A longitudinal, quasi-experimental, quantitative study by Jarrett et al., (2013) found that better pain management, improved outcomes, and higher patient satisfaction scores were present when nurses had a strong knowledge base regarding the nonpharmacologic therapies available for successful pain management.  This study utilized 206 pretest and 164 posttest scores of nurses in a hospital to measure sustained changes in knowledge and attitudes about pain management (Jarrett et al., 2013).  The Jarrett et al. (2013) study objective was to evaluate the link between nurses’ pain management knowledge and perception to patient perception of nursing management of pain.  They found that when patients feel their nurses manage their pain effectively, patient satisfaction scores are increased and healthcare costs decreased (Jarrett et al., 2013).

Impact of Patient Education or Empowerment

Patient distress, undesirable physiological and psychological consequences including decreased immune response, poor wound healing, avoidance of treatment (which may contribute to deep vein thrombosis or pulmonary embolism), anxiety, and depression have been linked to inadequate pain relief (Trail-Mahan et al., 2013).  These multiple issues can translate into increased length of stay and decreased patient satisfaction rates (Trail-Mahan et al., 2013).  Trail-Mahan et al.’s (2013) study was impactful in its conclusions of the importance of nurses’ education and knowledge regarding CAM therapies and that patients who were empowered to make decisions about their health that better reflect their personal preferences often experienced more favorable health outcomes, such as decreased anxiety, and increased compliance with treatment regimens.  They reported that patients who used CAM options were empowered to actively participate in their care and recovery (Trail-Mahan, 2013).  Trail-Mahan et al. (2013) discussed the importance of the use of CAM to provide patients with additional options to increase their level of comfort and increase their satisfaction with their overall pain experience.

A study done by Montross-Thomas et al. (2017) surveyed 100 hospitalized patients regarding their CAM preferences, beliefs, and willingness to pay for these services.  Survey results found that the majority of patients were supportive of CAM therapies in order to increase their well-being, increase their overall satisfaction with hospitalization, and to obtain relaxation (Montross-Thomas et al., 2017).  Their study cited the importance of providing CAM to hospitalized patients in order help the patient reduce some adverse effects that hospitalization can cause including anxiety, distress, fatigue, nausea, and pain (Montross-Thomas et al., 2017).  Their study results support a growing body of literature that when patients are partners in their own care, they have better outcomes and medication costs decrease (Jarrett et al., 2013; Montross-Thomas et al., 2017).

The Veterans Association (VA) is working to implement integrative medicine into its clinics nationally as they have noted that studies have shown little evidence to support that opioids are more effective than other therapies in treating pain (Cosio & Lin, 2015).  The research that the VA focused on was that opioids should be last-line therapy after trying options such as non-opioid medications, physical therapy, behavioral programs, and interventional pain management (Cosio & Lin, 2015).  Cosio & Lin (2015) reported that multiple studies have shown that if 75% of VA patients who were non-users of CAM would utilize these treatments if they were aware of and had access to them.  They conducted a quasi-experimental, one-group, pre/post-test design in a Midwestern VA Medical Center where they tested the hypothesis that Veterans would report an increase in CAM utilization after completing a formal pain education program (Cosio & Lin, 2015).  A 1-day-per-week for 12-week course was provided to Veterans and their families and introduced them to the 23 different nonpharmacologic therapies available to deal with pain (Cosio & Lin, 2015).  The results of this study of 103 Veterans showed that there was a significant increase in the overall utilization of CAM after the education program (Cosio & Lin, 2015).

Smith et al. (2015) conducted a telephone interview of 23 patients discharged from an emergency department (ED) after presenting with complaints of acute pain.  Their study found two main themes including the awareness of opioid dependence and addiction, and patient-provider communication around pain management (Smith et al., 2015).  Patients repeatedly reported wanting to be involved in the decision-making process around their care regarding pain management (Smith et al., 2015).  Their perspective was that the ED providers typically did not present alternative pain management options or discuss the risks of opioid dependence (Smith et al., 2015).  They offered suggestions to improve provider communication including emphasis on functional status rather than classic 1-10 scale, use of lay language that takes their health literacy into account, rapid treatment time, rapid pain relief, improved communication between care teams, and increased provider empathy (Smith et al., 2015).  Per Smith et al. (2015), patients ultimately want to be involved in their pain management options and they want to know about the associated risks with the addictive potential of opioids.

Theoretical Framework

Jean Watson’s Philosophy and Theory of Transpersonal Caring was first introduced in 1979 (Butts & Rich, 2015).  Throughout the years, Watson has refined her theory to keep up with nursing’s evolving discipline based on her personal experiences (Butts & Rich, 2015).  Her theory is one that focuses on how nurses care for their patients and how that caring can progress into better plans to promote health and wellness, prevent illness and restore health (Hogan, Shattell, & Cleary, 2013).  Caring and nursing often are thought of together and according to Hogan et al. (2013), nurses often remark that Watson’s theory reconnects them with their reason for going into nursing at the beginning of their careers.  Watson’s theory and integrative medicine go hand in hand, as they both focus on healing the whole person including body, mind, and spirit (Halm & Katseres, 2015).

Incorporating nursing and interdisciplinary theories to help guide one’s practice helps to create a strong foundation in order to continue to provide competent and advanced care to every patient (Current Nursing, 2012).  For example, by using Jean Watson’s Theory of Human Caring to guide one’s practice, one can allow their patients to become active participants in making their healthcare decisions and maximize their healing and wellness (Hogan et al., 2013).  Nurses comprise the largest health care profession and are positioned to measure, monitor, evaluate, and document pain interventions and outcomes (Morales-Fernandez et al., 2015).  They can help patients determine the best pain management plan of care, which in turn allows the patient to participate in their care (Morales-Fernandez et al., 2015).  True quality care is patient-centered and allows patients to become more self-aware and take responsibility for their health and healing process (Butts & Rich, 2015).

Using Watson’s theory of caring allows nurses to involve their patients’ to play a proactive role in the pain management process in order to adopt the necessary tools for a healthy lifestyle.  The unifying framework that Watson’s ten caritas processes are based on are human caring, compassion, and authentic interrelationships (Wayne, 2016).  These factors served as a guideline for putting her theory into action and aimed to ensure a balance and harmony between a patient’s health and illness experience (Ozan, Okumus, & Lash, 2015).  Using the ten caritas processes as a guideline for nurse-patient interactions, elaboration on the concepts of universal love, death, illness, healing, the mysteries of life, and the nursing practice occurred (Vandenhouten et al., 2012).

Watson’s first caritas process is respect for the patient through the practice of love, kindness, and compassion (Ozan et al., 2015).  When providing holistic care and following this first process along with the second one of listening and honoring the patient and their belief system regarding hope and faith, nurses become patient advocates and empower patients to become partners in their care (Ozan et al., 2015).  Through this relationship, caritas process 3, 4, and 5 can flourish as the nurse listened to and honored the patient’s individual beliefs to help sustain a trusting and caring relationship in which the nurse is present and supportive of the patient’s expression of feelings (Wagner, 2010).  The use of nonpharmacologic for pain management allowed caritas process 6-10 to thrive (Wagner, 2010).  These creative options were provided during the caring process and involved the nurse becoming a health-healing-wellness coach providing nonpharmacological therapies.  These therapies helped to create a healing environment that was cognizant of the patients’ mind, body, and soul (Wayne, 2016).

Nurses play a vital role in pain management and when they were able to incorporate evidence-based pain management practices, such as the use of nonpharmacologic therapies in pain management, they could assess and manage pain under a holistic approach that allowed the patient to play a proactive role in addressing their disease process (Morales-Fernandez et al., 2015).  The caritas processes were used as a guide to help promote healing, honor wholeness, and contribute to the evolution of humanity (Vandenhouten et al., 2012).  When used and applied Jean Watson’s theory helped nurses to provide care that projected hope, respect, trust, and compassion (Ozan et al., 2015).

Limitations in Previous Literature

The evidence base for conventional western health care modalities is well established (Halm & Katseres, 2015).  On the other hand, research for the efficacy of CAM is ongoing and continues to generate findings that can help to guide different aspects of health care practice, including pain management (Halm & Katseres, 2015).  Hospitals and health care facilities will need to determine the level of evidence required to demonstrate safe and effective use of offered therapies (Halm & Katseres, 2015).  In addition to the minimal evidence on the safe practice of CAM through established guidelines and protocols, minimal data exists in the efficacy of a menu or handout to patients to increase the use of nonpharmacologic therapies.  Trail-Mahan et al. (2013) reported that although the adjunct use of CAM with conventional medicine has been supported, CAM therapies appear to be underused in nursing practice.

CHAPTER 3

Methodology

Design

A quality improvement project was implemented to standardize and increase the utilization and charting of nonpharmacologic therapies in pain management on an inpatient hospital medical telemetry unit.  Despite institution efforts to utilize nonpharmacologic therapies to decrease patient pain, the current use and documentation at the project site had been less than 10% (L. Foster, personal communication, May 19, 2016).  The project entailed two primary components including education for nurses on the benefits of the use of nonpharmacologic therapies and an inclusive nonpharmacologic therapy menu for patients.  This comprehensive menu of available inpatient therapies was created for this project and underwent site approval by their health literacy team.  The aim of the nurse education and patient menu was to increase the utilization, consistency, and completeness of nursing documentation of these therapies.  The results of this project were measured through chart audits for a total of six weeks.  These audits occurred for three weeks prior to and three weeks following education and distribution of the menu.

Setting

The facility in which the project took place is a 235-bed hospital that provides comprehensive emergency and specialty care.  The county in which this hospital is located houses approximately 10% of the population in the state of NC and is both the most populated and densely populated county in the state.  The project facility belongs to one of 40 hospitals that serves patients in the Southeast.  The facility belongs to a system that is a non-for-profit healthcare organization that has more than 900 care locations in the Southeast.  They account for almost 12 million patient interactions each year.  The project took place on a 32-bed medical telemetry unit that employs 42 nurses.

Sample

40 of the 42 nurses on the unit participated in both the questionnaire and education portion of the project.  Their participation was mandatory and was part of the required educational hours that they participate in as employees of that unit.  The nurse manager provided a list of the currently employed nurses (part time and full time).  No demographic information was obtained from the nurses in order to protect their identity and keep questionnaire answers confidential.  Two separate rosters tracked when the questionnaire was completed and when education was obtained.  They were required to complete these in order to ensure compliance across the board on the expectation of the use of these therapies in helping to manage a patient’s pain.

Methods

The first component of the project, the nurses’ education, was based on results obtained from the questionnaire.  The Complementary, Alternative and Integrative Medicine Attitudes Questionnaire (CAIMAQ) was distributed to nurses to gauge their current knowledge and attitudes regarding complementary and alternative therapy terminology and practice in pain management and can be seen in Appendix A (Abbott et al., 2009).  A panel of experts from complementary, alternative and integrative medicine (CAIM), allopathic medicine, medical education and questionnaire development developed the CAIMAQ (Abbott et al., 2009).  The study that provided initial support for the questionnaire occurred in 2007 when it was administered to 1,770 US medical school students, which was 3% of the US medical student population (Abbott et al., 2009).  Permission for use of the CAIMAQ was obtained by the original author as seen in Appendix B.  The results of the questionnaire were used in order to ensure education items were adequate regarding the efficacy of these therapies in the management of pain.  Education was provided via a mandatory in-service and bulletin board on the unit.

The comprehensive pain management menu for the patients was the second component and was created to increase visibility of nonpharmacologic therapies available at this institution while patients are hospitalized.  This menu was given to every patient on admission by the nurses.  Through completion of education and the detailed menu, nurses have clarity on how to confidently communicate the resources available to the patient, how to implement them and how to appropriately chart the patients’ utilization.  This helped to standardize the process of the usage and charting of nonpharmacologic therapies for pain management at this facility.  The CAIMAQ was distributed to nurses via an online survey tool to determine their attitudes towards CAIM.  These questionnaires were distributed online over a three-week period.  An e-mail was sent to all staff that included a statement informing participants that all questionnaire data will be kept confidential as well as a link to the questionnaire.  During the first week, verbal reminders on completion of the questionnaire were provided from the nurse manager during morning huddle (incorporating both day and night shift).  The online survey tool also sent a reminder to those who had not completed the questionnaire, for a total three reminders.  The questionnaire included 30 questions that did not take more than 5-10 minutes to complete.  It was made up of Likert scale questions that allowed participants to choose from eight choices along a continuum that ranged from strongly agree to strongly disagree, and included don’t know.

Staff education was then provided based on the results of the questionnaire in order to ensure education was adequate and was conducted over one week.  This education was provided in-person by the project facilitator.  The educational material covered the new patient nonpharmacologic therapy menu, information on the importance of the use of nonpharmacologic therapies in the treatment of pain, and where they can chart the use of these therapies in the medical records.  These in-service education sessions were mandatory and happened daily during the units’ morning huddle.  Participants signed an attendance roster once education was completed.

Next, the comprehensive patient comfort menu was developed and provided to every patient on admission to increase visibility of nonpharmacologic therapies available at this institution.  This patient comfort menu helped both the nurses and the patients as it clearly laid out the options in an organized manner that helped clarify any questions either group had.  The menu helped remind the nurses of the multitude of items available to offer their patients and also allowed the patient to request a particular item.  The nurses on the unit were instructed to give one to each patient on admission.  The hospital covered the cost for printing the menus on an 8 ½ x 11 piece of paper in color as seen in Appendix C.  Through the completion of the education and the menu, a standardized process was implemented to ensure clarity on resources available to the patient, how to implement them and how to appropriately chart the patients’ utilization.  There was a standardized place in the medical records that could be selected when therapies and/or the pamphlet was received by the patient, but it was underutilized.

Protection of Human Subjects

The project underwent review by the Office of Research Integrity & Compliance (ORIC) at East Carolina University (ECU) and had been deemed to be outside of University & Medical Center Institutional Review Board (UMCIRB) jurisdiction as the project did not meet the current federal descriptions for human subject research.  Therefore, the project did not need UMCIRB approval, as per letter in Appendix E.  Per the project site, Internal Review Board (IRB) approval was not necessary as they had deemed it a Quality Improvement (QI) project.

Instruments

The CAIMAQ was used and consisted of 30 Likert scale type questions (Abbott et al., 2009).  Five different domains were measured with the questionnaire results regarding nurses’ attitudes towards CAIM (Abbott et al., 2009).  A glossary of terms was also included in the questionnaire in case participants were not familiar with terminology included.  The questionnaire that was provided to the nurses can be seen in Appendix A (Abbott et al., 2009).  Permission to use this instrument was obtained from the first author, Ryan Abbott, and can be seen in Appendix B.  He provided the most recent version of the questionnaire, which underwent analysis in 2007 to ensure its reliability and construct validity.  The Cronbach’s alpha was determined to be 0.905, root mean square error of approximation 0.088, non-normed fit index 0.940, comparative fit index 0.945, standardized root mean squared residual 0.065, with a p<.05 (Abbott et al., 2009).

Data Collection

After the 3-week timeframe allotted to complete the questionnaire, the responses from the CAIMAQ seven-point Likert scale questionnaire along with the “don’t know” option were totaled.  These results determined nurses’ attitudes and knowledge towards complementary, alternative, and integrative medicine (CAIM).  The five different attitude domains that were measured included the desirability of CAIM therapies (items 3, 4, 6, 8, 10, 15, 16, 18, 25, 27, 28, 30), progressive patient/physician health care roles (items 13, 14, 20, 21, 22, 23, 24), mind-body-spirit connection (items 1, 5, 7, 11), principles of allostasis (items 2, 12, 19), and a holistic understanding of disease (items 9, 17, 26, 29).

In addition to collecting the questionnaire results, medical records were audited.  Records for patients on the telemetry unit for three weeks prior to education and patient comfort menu distribution and three weeks following were reviewed in order to obtain quantitative data.  The data included the number of patients hospitalized on the unit on a particular day and how many of those who reported pain received an available nonpharmacologic therapy.  The cumulative six-weeks of audits showed how many patients received a nonpharmacologic intervention both prior to and following nurse education and distribution of the menu.  The goal of the information obtained from the audits was that the use of these nonpharmacologic therapies increased to greater than 10%, which was the current baseline for this site.

Data Analysis

Quantitative data was obtained by measuring the results of the CAIMAQ.  Questionnaire results including the 30 Likert scale questions were turned into interval scales and descriptive statistics were applied.  Correlation analyses, factor analyses, and analysis of variance were performed on the results.  The questionnaire responses were used to tailor the education provided to the nurses.

Completing weekly chart reviews for three weeks both prior to and following the education also provided quantitative data.  The number of patients hospitalized in the unit was compared against whether or not the nurse electronically charted whether or not they received a complementary or alternative therapy when they reported pain.  The audits showed how many patients received the complementary or alternative therapy intervention by the nurses if they expressed that they were in pain.

Limitations

The narrow scope of the sample is a limitation.  The study was conducted at one institution on one 32-bed unit.  Another limitation is that the project focused on the use of nonpharmacologic therapies for pain management and not for other problems the patient may have encountered.  There were two areas in the medical record where nurses could chart the use of these therapies and only one area was audited. The one that was audited was included in the patient’s pain rating section and identified what interventions were used to alleviate their pain.  The final limitation is that this study did not track whether or not the number of opioids used in the hospital or number of opioid prescriptions on discharge decreased.

Cost

The budget for this project was $932.  It included the project facilitators travel expenses, statistician fees, marketing costs, and office fees as seen in Appendix D.

**CHAPTER 4**

**Sample Characteristics**

A total of 40 out of the 42, 95%, nurses employed on the unit completed the CAIMAQ online survey. The two nurses that did not participate were on Family Medical Leave of Absence (FMLA). No specific demographic information was obtained from the nurses in order to protect their identity and keep questionnaire answers confidential.  Five different attitude domains were measured. They included the desirability of CAIM therapies, progressive patient/physician health care roles, mind-body-spirit connection, principles of allostasis, and a holistic understanding of disease. The survey consisted of 30 questions which were administered using a seven-point Likert scale, ranging from one (strongly disagree) to seven (strongly agree). A “don’t know” option was also provided and was treated as missing data. Descriptive statistics were completed in order to analyze the questionnaire responses in the five domain subscales. The results from each of the five domains can be seen in Figure 1. This figure outlines the CAIMAQ items that were include in each of the five domains. Figure 1 shows that the highest mean was obtained from the “attitudes toward the mind-body-spirit-connection” (M = 6.48, SD = 0.82) and the lowest for “attitudes toward the desirability of CAIM therapies” (M = 5.27, SD = 1.70).

*Figure 1.* Mean respondent attitudes toward CAIMAQ subscales derived from exploratory data analysis (N = 40).

In addition to analyzing the CAIMAQ results, patient medical record audits were conducted over a total of six weeks. A total of 653 patient charts were audited three weeks prior to implementation of the quality improvement project and 658 charts were audited three weeks after the educational session and distribution of the patient comfort menu. The data included the number of patients hospitalized on the unit on a particular day and how many charts reflected that the patient received an available nonpharmacologic therapy.  Figure 2 shows an increase in the charting of the percentage of patients in pain who received a nonpharmacologic therapy following education and patient comfort menu dispersal. A total of 67.4% of patient charts reflected that those in pain received a nonpharmacologic therapy in the three weeks prior to project initiation. Following the implementation of the project, there was an increase to a total of 71.1% patient’s charts reflecting the use of a therapy for the three weeks following project implementation.

*Figure 2.* Total percentage of patients in pain that received nonpharmacologic therapy both prior to (N = 653) and after (N = 658) implementation of the project.

**Intended Outcomes**

The patient/problem, intervention, comparison, outcome (PICO) question answered was whether or not relevant nurse education and a patient nonpharmacologic therapy menu would increase the charting of use and utilization of these therapies to greater than 10%.  In order to answer this question, two tools were used. First, the Complementary, Alternative and Integrative Medicine Attitudes Questionnaire (CAIMAQ) was administered to determine the sites nurse’s knowledge and attitudes regarding the use of complementary and alternative therapies (Abbott et al., 2009).  The results from the CAIMAQ were used to ensure adequate education regarding information on the importance of the use of nonpharmacologic therapies in the treatment of pain. In addition, staff education was necessary in order to introduce the patient comfort menu and where the nurses should be charting the use of these therapies in the medical records. Second, a comprehensive patient comfort menu was created in order to increase the visibility of the nonpharmacologic therapies available at the site. This helped to standardize the process so that it was clear what resources were available to the patient, how to implement them, and how to appropriately chart their utilization.

**Major Findings**

The first element of the project was the CAIMAQ that measured nurses’ knowledge and attitudes regarding nonpharmacologic therapies. Questionnaire responses were analyzed and showed that their attitudes were significantly more positive for factors that questioned the foundational values of CAIM, such as the mind-body-spirit connection, a holistic understanding of disease, and attitudes toward the progressive patient/physician health care roles rather than for the desirability of CAIM therapies. These results seem to support the idea that nurses from the medical unit were comfortable with the principles of CAIM but may be hesitant to actually endorse providing CAIM. On the whole, respondents to the questionnaire endorsed the importance of CAIM and Figure 1 shows the mean respondent attitudes towards the CAIMAQ subscales derived from an exploratory data analysis. Based on these results, the education provided to the nurses was directed at helping them to feel comfortable in endorsing and offering the nonpharmacologic therapies available at the facility by distributing and educating their patients on the newly created patient comfort menu.

To measure the impact the project had on the medical telemetry unit, daily patient chart audits were conducted over a 6-week timeframe and included audits both prior to and following initiation of education and distribution of the menu. The goal of the medical record audits during two different time frames was to show if there was an increase in the charting of usage of nonpharmacologic therapies in pain management. The audit was only able to measure the amount of therapies documented rather than determining if the therapies were actually received. The audits for three weeks prior to the implementation of the project were compared to the audits completed following the nursing education and distribution of the patient comfort menu. The first three weeks of chart audits showed that nurses on the unit were charting the use on nonpharmacologic therapies for patients in pain at 67.4%, which was above the site’s 235-bed average of 10%. Despite this number being above the hospital average, this project was able to increase the number of patients that were recorded in the medical record by 3.7% to a total of 71.1% in the three weeks following project initiation. Compliance with use of the new patient comfort menu was not measured, but in the future, this may be something that could be reviewed.

By conducting additional data analysis and following patients throughout their hospital stay, the data found from the project’s chart audit may have proven to be meaningful. Audit results showed that there was a decrease in the number of patients who reported that they were in pain after the educational session and menu dispersion. Approximately 13% less patients, 55.9% prior to and 43.2% after, communicated to the nurse that they were in pain. By evaluating individual patients more closely, it may be found that though the provision of patient education and the increase in knowledge of available nonpharmacologic therapies, they are less likely to suffer from pain that requires opioid therapy during their hospitalization. If able to show results such as this, there may also be a numerical cost value that can be proven when the number of opioid prescriptions for both inpatients and outpatients decrease.

**Summary**

This project potentially fulfilled the three dimensions of the Triple Aim by improving patient experience of pain, improving the health of populations, and reducing the per capita cost of health care (Institute for Healthcare Improvement [IHI], 2017).  First, patient satisfaction, as it relates to pain experience, may have been improved because patients were able to direct and control their pain by selecting nonpharmacologic therapies (Halm & Katseres, 2015).  Second, population health was possibly improved because pain complaints decreased which in turn decreased the reliance on opioids to treat pain, with potential for less nosocomial complications and subsequent outpatient use (Herzig et al., 2014; Trail-Mahan et al., 2013).  Finally, the per capita cost of health care may have been reduced with the use of these nonpharmacologic therapies, as most of those offered on the patient comfort menu were free services.

CHAPTER 5

Implications for Nursing Practice

The current opioid epidemic has garnered intense attention and focus on the prevention of opioid drug abuse and misuse (CDC, 2016b). In order to address this concern, the project site has provided nonpharmacologic options for patients. They have also created an area in the electronic medical record where the use of these options can be recorded. Upon selection of this quality improvement project, the nurses at the site were only charting that 10% of the patients were receiving one of these therapies. Knowing the site’s interest in helping to increase the use of these, a medical telemetry unit that consists of 32 inpatient beds, was chosen to participate in this quality improvement project. Upon completing the first three weeks of chart audits, it was found that this unit was excelling at the use of these therapies and recording it in the patient’s chart. They were charting the use at 67.4%, which was above the site’s 235-bed average of 10%. Despite this number being above the hospital average, this project was able to increase the number of patients that were recorded in the medical record by 3.7% to a total of 71.1% in the three weeks following project initiation.

Nurses, according to Jean Watson’s model of caring, are concerned with promoting health, preventing illness, caring for the sick, and restoring health by providing holistic care (Ozan et al., 2015). This project allowed nurses to follow Watson’s theory and holistically care for their patient by allowing become an active participant in their health. Nurses were able to give their patients the opportunity to make choices as they related to pain and the use of nonpharmacologic therapies. The creation and then subsequent distribution of the project’s patient comfort menu was instrumental in increasing the charting of the use of nonpharmacologic options for patients in pain. In addition to caring for their patients, Watson stressed the importance of caring and nurturing one’s own self (Wagner, 2010). By participating in the CAIMAQ questionnaire and education, nurses were able to use Watson’s caritas to cultivate their understanding and knowledge of options available to create a healing environment for their patients.

Implications of Findings

Pain includes both physical and emotional manifestations and the management of this pain can be achieved through the provision of holistic care that promotes patients’ self-care, independence, and well-being (Santos & Lima-Basto, 2014). There has been a shift from focusing on fixing pain, toward improving the experience of individuals with pain and enhancing their functioning and quality of life. The CDCs opioid prescribing guidelines (CDC, 2016a) and the United States Department of Health and Human Services (HHS) National Pain Strategy (2016) are calling for an evidence-based multimodal and interdisciplinary approach to treating pain. The CDC opioid prescribing guidelines recommend avoiding the use of opioids in favor of exercise therapy, cognitive behavioral therapy, and non-opioid medications as first-line pain treatment. This project aimed at understanding nurse’s attitudes and knowledge regarding the use of complementary and alternative therapies, providing education to the nurses to increase the charting of the use of nonpharmacologic therapies for patient’s in pain, and creating and providing a patient comfort menu that included all of the therapies available at the project site.

The eight American Association of Colleges of Nursing (AACN) Doctor of Nursing Practice (DNP) essentials, as seen below, further tie in the project findings from the CAIMAQ and the patient chart audits.

**Essential I: Scientific underpinnings for practice.**

By understanding the project’s site goal of increasing the use of and subsequent charting of the use of nonpharmacologic therapies, the project leader was able to develop a new approach towards the improvement of this existing practice. Evidence based research regarding the importance and necessity of nursing education, nonpharmacologic therapies, nurse led interventions, Jean Watson’s Philosophy and Theory of Transpersonal Caring, and the impact of patient education or empowerment was able to be analyzed to enhance the projects’ efficacy.By providing a patient care menu that illustrated the nonpharmacologic therapies available at the project site, patients are able to be active participants in choosing safe alternatives to decrease their pain and increase their functioning. The choices provided to patients were directly in line with the CDC and HHS initiatives to combat the opiate crisis.

Essential II: Organization and systems leadership for quality improvement and systems thinking.

The stepped care to optimize pain care effectiveness (SCOPE) study was a 12-month randomized control trial that was completed with 250 primary care veteran patients (Kroenke et al., 2013). The authors found that decreased levels of pain intensity and pain-specific disability were reported when patients reported that their psychosocial needs including depression, pain catastrophizing, and anxiety were met and improved (Kroenke et al., 2013). When able to avoid opioids in the treatment of pain, the risk of adverse effects, abuse, diversion, and overdose-related mortality is avoided (Kroenke et al., 2013). Nurses spend the most time with patients and are often relied upon for advice (Buchan et al., 2012).

The meta-analysis of multiple peer-reviewed research articles was important in establishing project efficacy along with advocating for improving the quality of care provided by furnishing additional options for nurses to provide their patients when assisting with pain management. The project offered the site a practice change by creating a patient comfort menu that allowed patients to visualize the options available during their hospital stay. Nurses at the site were able to change their practice to include the distribution of the comfort menu to patients, thus allowing them to aid in improving their patient’s psychological needs and keep them safe from adverse medication effects.

Essential III: Clinical scholarship and analytical methods for EBP.

A thorough literature search was completed regarding nursing education, nonpharmacologic therapies, nurse led interventions, impact of patient education or empowerment, and Jean Watson’s theoretical framework. These searches confirmed the validity of the project in order to determine best practices and evidence-based findings to help improve the site’s use of nonpharmacologic therapies for patient’s in pain. Critical analysis of the literature as it related to nonpharmacologic therapies in pain management was essential in determining how to increase compliance with the use of and charting of this group of therapies during the patient’s hospitalization. The strategies implemented, which included the questionnaire, nurse education, and patient comfort menu, were designed to promote the safe, efficient, and equitable quality care of patients in pain. Specifically, the menu was approved by the site’s health literacy team and was translated into Spanish, as seen in Appendix D, so that it was accessible to a majority of the patient population. The site has already requested to share this menu throughout all of the patient units and has requested multiple presentations regarding the project findings.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.

The project included the use of technology in multiple ways. First, an online survey tool was used to administer the CAIMAQ to nurses employed on the unit. Also, numerous technological nonpharmacologic therapies were offered to patients. They included the WiFi guest access, movies, and access to the GetWell TV channel that was created for the site. The GetWell channel includes various options such as guided imagery, soft music, etc. Once aware of the offerings available, patients were able to independently access material that they felt would be most beneficial in their recovery. In line with Jean Watson’s theory, by focusing on nurturing the mind, body, and spirit simultaneously, patients are able to become active participants in making their healthcare decisions and maximizing their healing and wellness (Butts & Rich, 2015).

During the implementation phase of the project, the nurses were instructed on where to properly document and record their patient’s use of a nonpharmacologic therapy in the electronic medical record. These records were used to audit and obtain the data necessary to show the project outcomes both prior to and following the implementation phase. The efficiency and accuracy of these electronic patient charts were essential in evaluating the project findings. The use of multiple systems and technology were vital in improving the site’s initiative to increase the use of nonpharmacologic therapies for patient’s in pain.

Essential V: Health Care policy for advocacy in healthcare.

Patients who are empowered to make decisions about their health that better reflect their personal preferences often experience more favorable health outcomes, such as decreased anxiety and increased compliance with treatment regimens (Trail-Mahan, 2013).  The majority of patients are supportive of CAM therapies in order to increase their well-being, increase their overall satisfaction with hospitalization, and to obtain relaxation (Montross-Thomas et al., 2017).  Multiple studies support a growing body of literature that when patients are partners in their own care, they have better outcomes and medication costs decrease (Jarrett et al., 2013; Montross-Thomas et al., 2017). A leadership role to advocate for patients was essential in implementing the project at the site. Participation in the site’s pain council allowed for increased influence on those influential at the site for advocating the elements of the project. Education was also provided the members of the pain council. This council is made up of multiple site leaders which are instrumental in ensuring equitable and ethical health care throughout the site.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes.

In order to determine the elements and scope of the project, multiple interprofessional team members at the site were collaborated with. Feedback was obtained from pastoral care, physical therapy, clinical nurse leaders, volunteer services, patient care nurses, physicians, a regional physician medical director, and nurse managers. Patient-centered care can better be achieved when multiple members of the healthcare team collaborate and contribute their feedback as it relates to patient preferences, needs, and values. Through these discussions, participants were able to learn about, with and from each other regarding their knowledge about the use and availability of nonpharmacologic therapies in pain management at the site. Aveni et al. (2017) conducted a study on the healthcare professionals’ sources of knowledge on complementary medicine and concluded that information needs to be easily available at the healthcare site and interprofessional collaboration should be taken into account as a means to getting to it.

Essential VII: Clinical prevention and population health for improving the nation’s health.

The opioid overdose epidemic is killing nearly 100 Americans every day and it is vital that the number of opioid prescriptions decrease (Smith et al., 2015). The opioid epidemic is a complex problem and one tactic to reduce this epidemic is when prescribers consider nonpharmacologic and nonopioid therapy when treating pain (Smith et al., 2015). Innovative ways to change the model of health care delivery from a system that treats pain to one that provides comfort with nonopioid options is needed to improve the quality and safety of pain management. The Joint Commission Journal on Quality and Patient Safety is seeking papers on studies of strategies to improve pain management in order to limit opioid prescriptions (Baker, 2017). Nursing practice can advance with the use of tactics such as this project to increase nursing and patient education as it relates to the use of nonpharmacologic therapies in an effective pain management care plan.

**Essential VIII: Advanced nursing practice**

This quality improvement project was implemented to standardize and increase the utilization and charting of nonpharmacologic therapies in pain management on an inpatient hospital medical telemetry unit.  Despite the site’s efforts to utilize nonpharmacologic therapies to decrease patient pain, the current use and documentation at this facility had been less than 10%.  The project entailed two primary components including education for nurses on the benefits of the use of nonpharmacologic therapies and the creation of an inclusive patient comfort menu.  The aim of the nurse education and patient menu was to increase the utilization, consistency, and completeness of nursing documentation of these therapies.  The nursing intervention components of the were designed, implemented, and evaluated to promote quality patient care during a serious national opioid crisis that affects public health as well as social and economic welfare (NIH, 2018).

Limitations

The site where the project occurred was a 235-bed hospital and the project only addressed one medical telemetry unit that housed 32 beds. There are a large number of other patients and nurses at the 235-bed project site where further work could assess more staff in order to determine if the relationships found in this study can be generalized to the entire site’s nursing staff. Although 95% of the nurses on the unit completed the questionnaire, the participants may not be representative of the entire hospital. The unit in which the project took place is one that is very invested in providing nonpharmacologic options to their patients in pain. One of their nurses is currently working on a project on the unit to improve patient satisfaction scores as they relate to pain management. Furthermore, there have been two clinical nurse projects over the past two years focused on improving patient’s comfort level through the use of nonopioid options.

This project found that their unit was above the hospital average of 10% patients recorded in the electronic medical record as using a nonpharmacologic therapy during their stay. Their unit prior to the start of the project was charting that 67.4% of their patients in pain received a nonpharmacologic therapy. The staff on this unit was very knowledgeable and endorsed the importance of CAM. It is possible that the nurses that participated in the questionnaire may not be representative of the entire hospitals nursing staff as they may have had more positive, negative, or extreme attitudes towards CAM. This limitation could be alleviated by allowing nursing staff throughout the hospital units to participate in the questionnaire.

In addition to not being able to generalize the results of the CAIMAQ to the entire site staff, the chart audits did not follow patients throughout their hospital stay. The audits were completed daily based on the unit census at 0600. This allowed for a large quantity of audits to be completed over the entire timeframe of six weeks with a total of 1,311 patient charts being reviewed for the use of a nonpharmacologic option when they complained of pain. The audit could have been strengthened by reviewing the 24-48 hours surrounding the time the patient received the nonpharmacologic therapy to compare the utilization of pain medication before and after the therapy. By reviewing the charts in this manner, the number of patients who required less medication could have been observed. This would allow for further analyzation of results to determine the cost saving implications of using a less-costly available nonpharmacologic option like aromatherapy oils rather than an opioid medication.

Delimitations

The project facilitator was confined to one 32-bed unit, which only includes approximately 14% of the entire site’s patient and nursing staff population. This was due to the limited timeframe of 500 hours and minimal financial resources in which to complete the quality improvement project. Also, delimitations existed as the project was deemed a quality improvement project and no patient protected health information was obtained or tracked over a time period.

Recommendations for Practice

Further evaluation of this project could include following a patient throughout their stay and determining if the use of nonpharmacologic therapies decreased their need for opioid medications. The different types of nonpharmacologic therapies could also be studied to determine if any specific ones were more helpful in decreasing the need for pain medications since the experience of pain varies from one person to the next. In addition to the different ways that one experiences pain, there are multiple pain categories including acute, chronic, nerve, psychologic, joint, etc. Because of these diverse pain experiences and categories, individualized options for pain management should be provided and include multimodal pharmacologic and non-pharmacologic options.

Further data analysis for this project could have been done with follow-up surveys given to both the nursing staff and the patients. These surveys could be open ended and allow for those that took part in the project to provide their perceptions of how the nonpharmacologic therapies affected their perception of pain. This may provide qualitative data that could help to enhance project findings.

Finally, follow-up phone calls to the discharged patients could be placed in order to determine if they have continued any of the nonpharmacologic therapies at home. Patients were each given a copy of the comfort menu which would allow them to reference a list of therapies that could help with their pain management both while hospitalized or at home. They could be surveyed to determine if any of the options worked for them and were able to be applied outside of the hospital. There are many reasons why patients are turning to nonpharmacologic therapies for pain management. Some of the reasons include that medications are ineffective or too expensive, or because they don’t want to become dependent on drugs (Bruckenthal et al., 2016).

Final Summary

According to a study done by Lakhan, Sheafer, and Tepper (2016), $500 is what it would cost to provide aromatherapy to 3,000 patients in order to manage pain, decrease nausea, vomiting, headaches, and hypertension. The CDC estimates that prescription opioid misuse totals $78.5 billion a year (National Institutes of Health (NIH), 2018). This public health crisis and economic cost burden includes the cost for health care, lost productivity, addiction treatment, and criminal justice involvement (NIH, 2018). The use of nonpharmacologic therapies, like aromatherapy, represent the advancement of better practices for pain management. Many people have the impression that the use of nonpharmacologic therapies creates substantial add-on costs for healthcare systems and individual payers. Per Oberg et al. (2015), this is not true as the actual out-of-pocket cost of nonpharmacologic therapies was around $33 billion, which is pocket change compared to the $268 billion spent on conventional care.

Healthcare providers will be called to partner with their patients to set goals and realistic expectations in regard to pain control in order to improve health care quality, safety, and value. The IHI Triple Aim framework to improve care, improve population health, and reduce per capita cost calls for healthcare to undergo major modifications as it relates to the current opioid epidemic. According to Salmond & Echevarria (2017), nurses are well positioned to contribute to and lead these changes.

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Appendix A

Complementary, Alternative and Integrative Medicine Attitudes Questionnaire (CAIMAQ)

For each of the 30 items below, please indicate how strongly you identify with the associated statement by selecting one of the answer choices. For example, selecting "Strongly Agree" would indicate that you highly believe the statement is accurate; selecting "Strongly Disagree" would indicate that you highly believe the statement is inaccurate. If you do not feel that you are able to fairly answer an item, a "Don't Know" option is provided.

Words that are bolded are described in the glossary of terms below.

Strongly Agree Somewhat Neutral Somewhat Strongly Don’t

Agree Agree Disagree Disagree Know

1. A patient’s treatment should take into consideration all aspects of his or her physical, mental, and spiritual health.
2. The focus of a primary care physician should be on promoting health rather than treating disease.
3. Patients whose doctors know about complementary and alternative medicine, in addition to **conventional medicine**, benefit more than those whose doctors are only familiar with **conventional medicine**.
4. When systems of alternative medicine (such as **traditional Chinese medicine**) are found to be efficacious in treatment of a disease, doctors should recommend them even though these systems may rely on unknown mechanisms.
5. Prayer, for oneself or others, can benefit quality of life and disease outcomes.
6. Therapies lacking rigorous support from biomedical research (randomized controlled trials, etc.) may nevertheless be of value to doctors.
7. The spiritual beliefs of patients play an important role in their recovery.
8. A system of medicine that integrates therapies of both **conventional** **medicine** and **complementary and alternative medicine** would be more effective than either **conventional medicine** or **complementary and alternative medicine** provided independently.
9. End-of-life care should be valued as an opportunity for patients to heal.
10. The use of **herbal products** represents a legitimate form of medicine that can treat a wide variety of disease.
11. A patient’s mental state influences his or her physical health.
12. Disease occurs when the body’s innate ability to heal itself becomes compromised.
13. Patients who express themselves through creative outlets such as art, music or dance may achieve significant health benefits through these activities.
14. Doctors who lead a balanced lifestyle (i.e., attending to their own health, social, family and spiritual needs, as well as interests beyond medicine) generate improved patient satisfaction.
15. **Complementary and alternative medicine** contains beliefs, ideas, and therapies from which **conventional** **medicine** could benefit.
16. **Chiropractic** care can be a valuable method for resolving a wide variety of musculoskeletal problems.
17. A patient with a terminal illness can experience mental and spiritual healing in being at peace with himself or herself.
18. Massage therapy can lead to objective improvements in long-term outcomes for patients.
19. The innate self-healing capacity of patients often determines the outcome of illness regardless of treatment interventions.
20. A strong relationship between patients and their doctors is a valuable therapeutic intervention that leads to improved outcomes.
21. Doctors who model a healthy lifestyle (i.e., follow their own advice) generate improved patient outcomes.
22. Whenever reasonable, a physician should provide patients with hope and a positive attitude toward healing.
23. A patient who is an active participant in his or her care is likely to experience improved outcomes compared with a patient who is a passive participant.
24. Nutritional counseling and **dietary/food supplements** can be effective in the treatment of pathology.
25. Doctors should consider referring patients to alternative health care providers such as **homeopaths** or **naturopaths** for conditions poorly managed by **conventional medicine**.
26. Even in the absence of clinically significant disease, a person can experience a vast range in terms of physical health.
27. It is ethical for doctors to recommend therapies to patients that involve the use of subtle **energy fields** in and around the body for medical purposes.
28. **Therapeutic Touch** is credible as a form of treatment.
29. Disease can be viewed as an opportunity for personal change and growth.
30. Treatments of **complementary and alternative medicine** tend to be less invasive that those of **conventional medicine**, and may help to reduce the risk of side-effects and **iatrogenesis**.

CAIMAQ Glossary of Terms

If there are any words or therapies you are unfamiliar with, you will find a description in the glossary of terms (listed alphabetically).

**CHIROPRACTIC** - is a CAM alternative medical system. It focuses on the relationship between bodily structure (primarily that of the spine) and function, and how that relationship affects the preservation and restoration of health. Chiropractors use manipulative therapy as an integral treatment tool.   
**COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)** - a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.  
**CONVENTIONAL MEDICINE** - Conventional medicine is medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and by their allied health professionals, such as physical therapists, psychologists, and registered nurses. Other terms for conventional medicine include allopathy; Western, mainstream, orthodox, and regular medicine; and biomedicine. Some conventional medical practitioners are also practitioners of CAM.  
**DIETARY SUPPLEMENTS** - A dietary supplement is a product (other than tobacco) taken by mouth that contains a "dietary ingredient" intended to supplement the diet. Dietary ingredients may include vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, and metabolites. Dietary supplements come in many forms, including extracts, concentrates, tablets, capsules, gel caps, liquids, and powders.  
**ENERGY THERAPIES** - Energy therapies involve the use of energy fields. They are of two types: biofield therapies are intended to affect energy fields that may surround and penetrate the human body. Some forms of energy therapy manipulate biofields by applying pressure and/or manipulating the body by placing the hands in, or through, these fields. Examples of this include Qi Gong, Reiki, and Therapeutic Touch. Bioelectromagnetic-based therapies involve the unconventional use of electromagnetic fields such as pulsed fields, magnetic fields, or alternating-current or direct-current fields.  
**HERBAL SUPPLEMENTS** - A type of dietary supplement that contains herbs, either alone or in combination. An herb (also called a botanical) is a plant or plant part used for its scent, flavor, and/or therapeutic properties. Herbal supplements (formulas) are used in systems of alternative medicine, such as traditional Chinese medicine and Ayurveda, under the guidance of trained practitioners.   
**HOMEOPATHIC MEDICINE** - Is a CAM medical system. In homeopathic medicine, there is a belief that "like cures like," meaning that small, highly diluted quantities of medicinal substances are given to cure symptoms or disease, when the same substances given at higher or more concentrated doses would actually cause those symptoms.   
**IATROGENESIS** - Refers to the inadvertent and preventable induction of disease or complications as a result of medical treatment or procedures.   
**MASSAGE THERAPY** - Massage therapists manipulate muscle and connective tissue to enhance function of those tissues and promote relaxation and well-being.   
**NATUROPATHIC MEDICINE** - or naturopathy, is a CAM medical system. Naturopathic medicine postulates that there is a healing power in the body that establishes, maintains, and restores health. Practitioners work with the patient with a goal of supporting this power, through treatments such as nutrition and lifestyle counseling, dietary supplements, medicinal plants, exercise, homeopathy, and treatments from traditional Chinese medicine.  
**THERAPEUTIC TOUCH** - is derived from an ancient technique called laying-on of hands. It is based on the premise that it is the healing force of the therapist that affects the patient's recovery; healing is promoted when the body's energies are in balance; and, by passing their hands over the patient, healers can identify energy imbalances.   
**TRADITIONAL CHINESE MEDICINE (TCM)** - TCM is the current name for an ancient system of health care from China. TCM is based on a concept of balanced qi, or vital energy, that is believed to flow throughout the body. Qi is postulated to regulate a person's spiritual, emotional, mental, and physical balance and to be influenced by the opposing forces of yin (negative energy) and yang (positive energy). Disease is proposed to result from the flow of qi being disrupted and yin and yang becoming imbalanced. Among the components of TCM are herbal and nutritional therapy, restorative physical exercise, meditation, acupuncture, and remedial **massage**.

Appendix B

Approval Letter from CAIMAQ Author

**From:** Ryan Abbott <[drryanabbott@gmail.com](mailto:drryanabbott@gmail.com)>  
**Sent:** Friday, June 16, 2017 6:24:37 AM  
**To:** Kaechele, Cecilia Barry  
**Subject:** Re: Fw: Request for use of questionnaire

Hi Cecilia,

By all means, feel free to use the questionnaire and let me know if you need any assistance with it. The CAIMAQ is listed in the attached paper, which I presume you have?

I've also attached a more user-friendly word version. I'm reasonably sure it's the current version, but I might just double check this against the pdf that there weren't any changes.

Best,

Ryan

Appendix C

Patient Comfort Menu

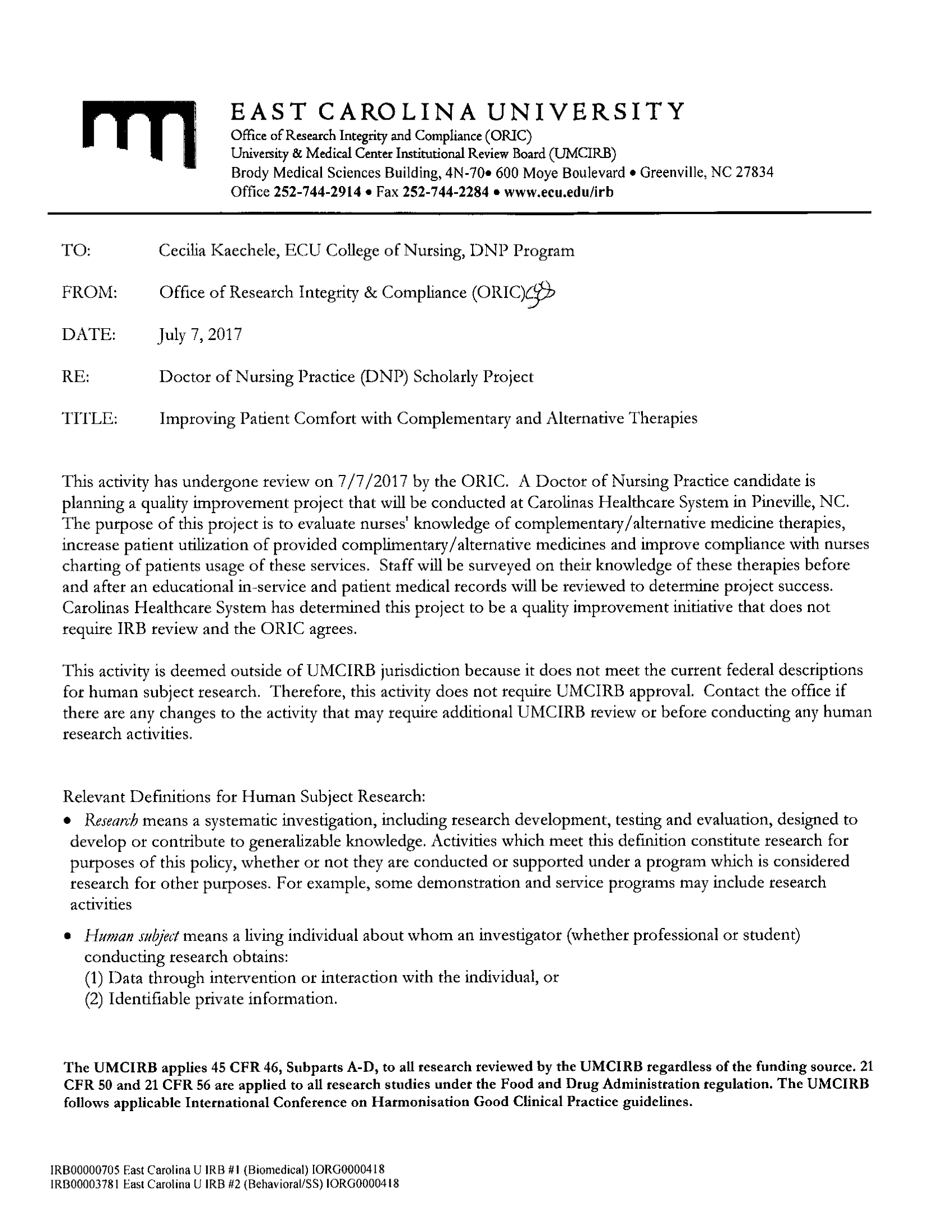




Appendix D

|  |  |  |  |
| --- | --- | --- | --- |
| **DNP Project Budget** | | | |
|  | | | |
| **ITEM** | **QUANTITY** | **UNIT COST** | **SUBTOTAL** |
| **TRAVEL** | | | |
| Mileage | 300 | $0.54 | $162 |
| **SALARY** | | | |
| Statistician to assist in project analysis | 1 | $200 | $200 |
| **MARKETING** | | | |
| Handouts for class | 200 | $1 | $200 |
| Visual aid creation | 1 | $100 | $100 |
| **OFFICE FEES** | | | |
| Office Supplies | 1 | $20 | $20 |
| Telephone and Fax | 1 | $100 | $100 |
| Printing, Postage, Delivery Fees | 1 | $100 | $100 |
| Equipment: Conference room, utilities, etc. | 1 | $50 | $50 |
| **TOTAL** |  |  | $932 |

Appendix E

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