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Nonpharmacological Techniques and Pain Management

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Walden University

College of Health Sciences

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Nancy Arbuah

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Walden University
2019

Abstract

Nonpharmacological Techniques and Pain Management

by

Nancy Arbuah

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2019

Abstract

The opioid epidemic in the United States continues to be a national health crisis affecting all populations. From 1999 to 2016, more than half a million people died from drug overdose. Nonpharmacological therapies are underused in nursing practice due to the gap in nurses' baseline knowledge and confidence related to nonpharmacological techniques for pain management. The purpose of this scholarly project was to develop and implement an expert-reviewed, evidence-based education program focused on nonpharmacological techniques for pain management. Participants included 18 registered nurses (RNs) from an orthopedic unit in a large academic medical center. A 45-minute educational session was conducted for RNs. A pre/postquestionnaire, including a 5-point Likert scale on nurses' self-perceived knowledge and confidence in using selected nonpharmacological techniques, was the method of data collection. Descriptive statistics were used to analyze the data. The results indicated an increase in nurses' self-perceived knowledge in all nonpharmacological techniques. The most significant increase in knowledge posteducation intervention was guided imagery with an increase of 72% in terms of the response *Good.* The data analysis indicates that the nurses self-perceived confidence posteducation intervention increased in terms of the response *Good* by 50 % and response *Excellent* by 33% demonstrating the efficacy of an evidence- based education program on nonpharmacological techniques. The implications of this project for social change include the empowerment of nurses to provide holistic patient-centered care, opioid sparing in keeping in alignment with patient safety, and the development of an evidence-based program that can be replicated in other settings.

Nonpharmacological Techniques and Pain Management

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Dedication

To my family, mother (Veronica) father (Allwell), and sisters (Felecia & Kathy) for their ongoing encouragement, prayers and support. Especially my husband, Orlando Burton who is a pillar of support and who challenges me to continue to excel in all that I do.

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To my chair and cochair, Dr. Mark Wells and Dr. Diane Whitehead, your exceptional mentorship, encouragement and support is truly appreciated. You both exemplify the essence of a Doctoral Prepared Nurse and I am truly grateful for all of your contribution to this DNP Project.

In addition, my clinical mentor, Dr. Frantzces Alabre who demonstrates exceptional leadership and continues to inspire me as a nurse leader and scholar.

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Section 1: Nature of the Project

Introduction

The opioid epidemic is a public health crisis affecting populations across the lifespan. From 1999 to 2016 in the United States, more than half a million people died from drug overdose with overdose deaths and opioid-involved deaths continuing to increase in the United States (Centers for Disease Control and Prevention [CDC], 2017).

Orthopedic surgery is often cited as one of the most painful of surgeries (Buyukyilmaz, 2014). Most often, opioid analgesia are used for postoperative recovery. Following a total joint replacement, patients experience intense levels of pain, stress, and anxiety, which may reduce self-efficacy and effect postoperative recovery (Lim, Yobas, & Chen, 2014). The literature supports opioid sparing and combining pharmacological and nonpharmacological treatment to pain management. The National Center for Complimentary and Integrative Health (NCCIH) describes *integrative health* as incorporating complementary approaches into mainstream health care. However, despite the supporting research on the use of nonpharmacological interventions as an adjuvant therapy for pain management, these techniques appear to be underused in nursing practice (Trail-Mahan, Mao, & Bawel-Brinkley, 2013). Nurses' knowledge of nonpharmacological pain management techniques should be assessed, as well as deficits identified to improve postoperative pain management and empower nurses to provide holistic patient-centered care.

Problem Statement

Despite the knowledge about their adverse effects, opioid analgesics remain the cornerstone of postoperative analgesia after orthopedic surgery. These adverse effects include nausea, emesis, constipation, ileus, urinary retention, purities, hypoxia, respiratory depression, hypotension, somnolence, confusion, and dizziness. Furthermore, multiple literature sources suggest opioid-related adverse effects leading to increased use of health care resources, economic consequences and increased length of stay (Pizzi et al., 2012).

Therefore, nurses' knowledge on nonpharmacological techniques is essential in the treatment and management of postoperative pain. The literature supports the efficacy of nonpharmacological treatments in postoperative pain management (Buyukyilmaz et al., 2013; Buyukyilmaz et al., 2014; Gallagher et al., 2018; Lim et al., 2014). However, as indicated in numerous studies and through clinical observation, nurses have a knowledge deficit in relation to nonpharmacological techniques and the ability to facilitate the integration of such modalities into nursing practice (Balouchi et al., 2016; Cirik et al., 2017; Shorofi et al., 2017; Trail-Mahan et al., 2013).

Purpose

Nurses are in a pivotal position to provide effective pain management in postoperative patients. Clinically, there is an advantage to combining pharmacological and nonpharmacological treatment to pain management. However, educational gaps exist regarding nurses' baseline knowledge, and learning needs to facilitate the integration of nonpharmacological interventions as an adjunct to pain management (Trail-Mahan et al.,

2013). My purpose in this doctoral project was to develop and implement an education session focused on nonpharmacologic techniques for pain management to registered nurses (RNs) on an orthopedic unit. My aim in this project was to enhance nurses' knowledge on nonpharmacological techniques, empower nurses in providing holistic patient-centered care, and improve postoperative pain management.

Project Question

This knowledge gap leads to the following project question: Does providing registered nurses with an education program on nonpharmacological techniques for pain management increase their self-perceived knowledge of these modalities and confidence in using them as an adjunct to pharmacologic pain management in postoperative orthopedic patients?

Nature of the Doctoral Project

The intended stetting for this doctoral project will be at an academic medical center in the Tri State area. The project will be conducted on an orthopedic unit with RNs. There are two 12-hour shifts on the acute orthopedic unit. Therefore, a total of six to eight education sessions will be conducted to capture a vast number of nurses on both of the shifts. There will be educational sessions conducted in the morning to capture the day shift nurses and early morning, early evening sessions to capture the night shift nurses. The education program will be developed following the Walden University DNP Manual for Staff Education. I identified content experts, including the manager/practitioner of the medical center's integrative health department, and a nurse

practitioner certified in pain management, and they reviewed the education program content and survey questionnaires.

The educational session, including the pre and postquestionnaires will be 45 minutes in length. It will start with a presurvey questionnaire assessing nurses' baseline self-perceived knowledge, and ability to integrate nonpharmacological techniques into clinical practice. Subsequently, a 20-minute educational intervention on nonpharmacological techniques for pain management will be conducted by the project leader. The education session will conclude with a postsurvey questionnaire. Finally, an evaluation of the program will be conducted. The source of evidence used to conduct the educational session and pre/postquestionnaire will be from peer-reviewed journals books, evidence-based programs, and experts in the field.

The outline for the education is an overview of six nonpharmacological techniques: guided imagery, relaxation breathing, music therapy, thermal regulation, positioning, and environmental management. The practical focus is on relaxation breathing and guided imagery with instruction, demonstration, and return demonstration. As the project leader, I will conduct the educational sessions. My purpose in this project is to enhance nurses' knowledge and confidence on six mind body techniques. This will be measured using a pre/postknowledge and confidence questionnaire. My intent is that RNs will use these evidence-based learnings in practice. The pre/postsurvey questionnaires will serve as evaluation measures of the education content that I will present. The pre and postquestionnaires will be identical in order to compare the results.

My outcome goal is to provide RNs with increased knowledge on nonpharmacological interventions and provide them with tools to enhance the patient care experience.

Significance

Inadequate pain relief has led to undesirable psychological and psychological consequences. Subsequently, alternatives to opioids and the use of nonpharmacological techniques can contribute in controlling the opioid epidemic. Researchers have demonstrated that complementary therapy helps decrease drug consumption and medical expenditure, which in turn has the potential for significant health care cost savings Shorofi & Arbon, 2017). Furthermore, these therapies can assist to reduce unwanted side effects from opioids. Most recently, at the academic medical center where the project will be initiated, the postoperative total joint pathway was reviewed and was modified by the organization to an opioid sparing pathway. Therefore, this project comes at a pivotal time to support this opioid sparing course in keeping with patient safety, balancing patients' postoperative pain control and improving patient care. Stakeholder and end user buy-in is imperative in the development and implementation of this education project. Among the stakeholders will be the chief nursing officer, vice president of nursing, director of nursing, nursing manager, assistant nursing managers, unit educator, nurses, nurse practitioners, and the integrative health department. A project team will be established to support and facilitate the implementation of the project. The members will include the unit leadership (manager, assistant managers, and educator) and nurses, including two nurse champions.

The use of nonpharmacological interventions as an adjunct to pain management will effect a positive social change at the organization, in the community, and in society at large. Nonpharmacological therapies offer nurses the opportunity to provide holistic care and empower patients to participate in their care and recovery (Trail-Mahan et al., 2013). Furthermore, providing nurses with increased knowledge on nonpharmacological intervention will increase their confidence and ability to integrate modalities into clinical practice. In this evidence-based project, I will seek to answer the clinical question, address practice problems and generate new knowledge for the advancement of patient care.

Summary

There are clinical benefits of using nonpharmacological techniques in postoperative pain management. Educational gaps exist in nurses' knowledge and use of nonpharmacological techniques. An evidence-based education session will be developed and conducted on an orthopedic unit with RNs to increase their knowledge on nonpharmacological techniques and their use in clinical practice. A project team will be developed to move the project forward. In the next section, I will review the scholarly evidence, and I will identify a theory and framework in the facilitation of this DNP project.

Section 2: Background and Context

Introduction

The opioid epidemic is a national crisis causing addiction, overdose, and potential death. There is significant evidence supporting the benefits of nonpharmacological techniques as an adjunct to pain management; however, nurses are rarely using these techniques in clinical practice (Buyukyilmaz et al., 2014; Lim et al., 2014).

My purpose in this doctoral project is to develop and implement an evidence-based educational program focused on nonpharmacologic techniques for pain management to RNs on an orthopedic unit. The project question is: Does providing RNs with an education program on nonpharmacological techniques for pain management increase their self-perceived knowledge of these modalities and confidence in using them as an adjunct to pharmacological pain management in postoperative orthopedic patients?

Review of the Scholarly Evidence

I conducted a review of the literature published from 2013 to 2018 using the following databases: CINAHL Plus with Full Text, ProQuest Nursing & Allied Health Services, Medline with Full text, Ovid Nursing Journals Full Text and PubMed with Full Text. I used the following search terms: *integrative therapy, complementary therapy, nursing attitudes and knowledge, relaxation techniques, nonpharmacological techniques,* and *orthopedic surgery.* The literature review yielded nine peer-reviewed studies that met the literature specific criteria. A survey by Polkki et al. (2001) on nonpharmacological methods questionnaire, and the classification and definition of

nonpharmacological interventions by Gelinas et al (2012), were the primary sources that I used to develop the education session and pre/postsurvey questionnaire.

Specific Literature

A total of five studies identified nurses' baseline knowledge, attitude, belief of efficacy, and practice of complimentary therapy in adult patients (Balouchi et al., 2018; Balouchi et al., 2016; Cirik et al.,2017; Shorofi et al., 2017; Trail-Mahan et al., 2013). The most common complimentary therapies identified were aromatherapy, reiki, therapeutic touch, massage, music therapy, dietary supplements, imagery, and relaxation techniques. In reviewing the literature, the studies identified and then described nurse knowledge, attitudes, and use of complementary and alternative therapies. One study evaluated the effects of an educational intervention on nurses' attitude toward perceived knowledge of complementary therapies (Hessig, Arcand, & Frost., 2004). Limited studies have been conducted in the United States. In addition, a majority of the studies used a descriptive, cross-sectional study design with convenience sampling of nurses. Balouchi et al. (2018) conducted a systematic review to describe the knowledge, attitude, and practice of complementary and alternative medicine (CAM) by nurses. In addition, they sought to identify barriers to use CAM therapies, as well as nurse's source of information about CAM therapies. Inclusion criteria included observational studies, regardless of sampling design, with a minimum sample size of 25. The electronic data bases that I used included MEDLINE, Scopus, and Web of Science. A total of 21 studies met the eligibility criteria. Internal and external validly of each study was analyzed by two independent project researchers who used a critical appraisal checklist (Balouchi et

al., 2018). Study characteristics included a representation of 13 countries, with the target population of nurses participating via convenience sampling.

In general, all instruments used in the various studies were developed by researchers with consultation by experts in the field. Knowledge on CAM therapy was measured by asking whether nurses were familiar with or heard of CAM therapies. The average knowledge for CAM therapies by nurses was 62.2% (Balouchi et al., 2018). Subsequently, nurse attitude was measured as either positive or negative toward CAM therapy use. The average overall attitude in nurses was 65.75%. A total of 65.9% of the nurses reported use of CAM therapies with patients (Balouchi et al., 2018). The primary reasons nurses suggested were for stress and anxiety reduction and health improvement. The barriers to CAM use were reported as lack of staff training, lack of reimbursement, and lack of information/evidence for practice. Given the level of knowledge, attitudes toward, and practice of CAM therapies found in the aforementioned study, there is a clear indication for additional knowledge. Furthermore, patient-reported use and preferences for CAM therapies would provide additional valuable data.

Subsequently, Cirik et al. (2017) conducted a study to describe nurses' experience with complementary health approaches (CHAs). They used a descriptive survey of the attitudes and experiences of nurses working in a hospital setting in Turkey. The study consisted of 220 nurses. The authors used a questionnaire prepared by the researchers consisting of 27 questions. Five experts in relevant fields evaluated the suitability of the questionnaire. For test reliability, the questionnaire was then piloted on a sample of 10 nurses where no edits were made to the questionnaire (Cirik et al., 2017). Descriptive

statistics were calculated for demographic variables. In addition, Pearson's chi-square test was used to determine what variables were associated with nurses' attitudes to and experiences of CHA. The significance level was set at $p < .05$ (Cirik et al., 2017).

The results indicated that knowledge on CHA was widespread with the most common therapies used being relaxation techniques (45%), or meditation (25.5%), massage (24.5%), and prayer 24.1% (Cirik et al., 2017). In addition, a majority (62.3%) of nurses did not recommend CHA to their patients. In reference to nurse's attitudes, 76.8% of the participants did not believe that nurses are responsible for informing the patient about CHA (Cirik et al., 2017). The limitation noted in the study was the validity of the questionnaire designed by the researchers. Overall, the authors noted that nurses need more training on complementary therapies. In addition, nurses should discuss potential benefits of such therapies with their patients.

A study conducted by Balouchi et al. (2016) assessed the knowledge of, attitudes toward, and use of complementary and integrative health (CIH) among nurses in Iran. They conducted a cross-sectional study of 95 nurses working in the hospital setting. The researchers developed a 39-item questionnaire. Data were analyzed using descriptive and inferential statistics. The results indicated that 60.5% of nurses had average knowledge about CIH strategies, with most having positive attitudes about its use (51.6%) (Balouchi et al., 2016). However, one-third of respondents admitted to poor knowledge toward CIH methods, with more than half of the nurses never applying CIH to patients (Balouchi et al. 2016). Limitations noted in this study was the use of convenience sampling and validity of the researcher designed study tool. Nurses revealed a positive attitude toward

complementary integrative health; however, a knowledge deficit was clearly noted (Balouchi et al., 2016). The authors further suggested the need for education programs to incorporate complementary and integrative health within the curricula.

In reference to the integration of complementary therapies, Trial-Mahan et al. (2013) assessed nursing baseline knowledge, learning needs, and belief toward CAM therapies. The participants where a convenience sample of 153 hospital based nurses in a northern California medical center. The descriptive study used the Nurse Complementary and Alternative Medicine Nursing Knowledge and Attitude Survey (NrCAM K&A) developed by Rojas-Cooley and Grant (2009) to explore hospital-based nursing knowledge and attitudes regarding CAM (Trial-Mahan et al., 2013). The group average score for knowledge was 51%, indicating respondent's poor baseline knowledge of CAM (Trial-Mahan et al., 2013). With regard to belief and attitudes, nurses strongly agreed that patients have the right to have CAM therapies integrated into their conventional medical treatment. They concluded the need for education programs to facilitate the integration of CAM into the acute care setting.

Shorofi et al. (2017) conducted a study to examine CAM among Australian hospital-based nurses and to identify their knowledge, attitudes, and professional/personal use. Nurses were recruited using a convenience sample technique. The researcher developed a questionnaire to achieve the aim of the study. Descriptive and nonparametric statistics were calculated to describe and analyze data. They noted that one-fifth (22.4%) of nurse rated their attitudes as being very positive, and 60.3% rated themselves as having very little or no knowledge of CAM (Shorofi et al., 2017). They

also noted a positive correlation between knowledge and attitude about CAM. This study revealed nurses believe to have insufficient knowledge toward complementary therapies. However, the nurse's positive attitudes could indicate that they are interested in integration of evidence based complementary therapies into nursing practice (Shorofi et al., 2017).

Nonpharmacological techniques and complementary and integrative health techniques are effective in pain management and stress reduction. Collectively, a number of studies demonstrated nurses' positive attitudes toward integrative and complementary therapies. However, the studies demonstrated limited knowledge and ability to facilitate techniques into practice (Balouchi et al., 2016; Cirik et al., 2016; Shorofi et al., 2017; Trail-Mahan et al., 2013). These studies collectively concluded a need for an increase in educational programs with a focus of complementary therapy, and further integration of therapies into clinical practice (Balouchi et al., 2016; Shorofi et al., 2017).

General Literature

A total of four studies identified the use of relaxation techniques on postoperative orthopedic patients (Buyukyilmaz et al., 2013; Buyukyilmaz et al., 2014; Gallagher et al., 2018; Lim et al., 2014). Outcome measures in these studies include postoperative pain, stress, and anxiety. Collectively, the studies concluded relaxation techniques (music therapy, guided imagery, or breathing exercises) were effective in decreasing postoperative pain and anxiety in orthopedic patients. Finally, one study evaluated the effects of an education intervention on complementary therapies on oncology nurses' attitudes, perceived knowledge, and self-reported application (Hessig et al., 2004). The

study concluded that education can affect the knowledge and integration of complementary therapies in nursing practice (Hessig et al., 2004).

In summary, gaps exist regarding nurse' baseline knowledge and learning needs to facilitate the integration of nonpharmacological techniques into clinical practice. In addition, there were no studies identified that evaluated an education intervention on nonpharmacological techniques in the orthopedic nursing population. Therefore, my project is unique and innovative in this population and will generate new knowledge to enhance patient care. Based on studies conducted by Polkki et al. (2001) using a survey on nonpharmacological methods questionnaire, and the classification and definition of *nonpharmacological interventions* by Gelinas et al. (2012), a questionnaire will be developed to assess nurse's self-perceived knowledge and use of nonpharmacological techniques. In addition, an evidence-based education session based on supporting literature will be developed and implemented to registered nurses.

Concepts, Models, and Theories

Malcolm Knowles was an influential figure in adult learning and the development of a distinctive conceptual base for adult education (Smith, 2002). Knowles's theory of androgyny, a self-direction in learning and informal adult education sets out the fundamentals of the activities of learners and teachers in planning, realizing, evaluating, and correcting adult learners (Taylor & Kroth, 2009). Given the nature of this doctoral project, this theory is best suited to educate and evaluate the nurses' knowledge on nonpharmacological techniques as an adjunct for pain management.

Background

Knowles (1913-1997) has been cited as the central figure in U.S. adult education in the second half of the twentieth century (Smith, 2002). The idea that adults are unique learners and learn differently than younger students has been well documented in the literature. Andragogy derives from the Greek root *agogus*, meaning "leading," *Andra* translates as the word *adult*, which makes andragogy the art and science of teaching/leading adults (Knowles, 1980, p. 43 as cited in Taylor et al., 2009). Furthermore, referring to andragogy as learner-focused education. The writing on andragogy and adult learning transformed and energized the progression because it gave adult education a distinct name and concept.

Core Elements

Knowles's theory of adult learning focuses on self-directed learning involving teaching adults to be in control of their learning (Mitchell & Courtney, 2005). Knowles summarized six key assumptions about adult learners, which are the foundation of adult learning.

Self-concept: As a person mature, his/her self-concept moves from one of being a dependent personality towards one of being self-directed. Adults tend to resist situations in which they feel that other are imposing their wills on them.

Experience: As a person matures, he/she accumulates a growing reservoir of experience that becomes a resource for learning. Adults tend to come into adult education with prior experience. If prior experience can be used they become the riches resource available.

***Readiness to learn*:** As a person matures, his/her readiness to learn become oriented to the development task of his/her social roles. Readiness to learn is dependent on an appreciation of the relevancy of the topic to the student.

***Orientation to learn*:** Adults are motivated to learn to the extent in which they perceive that the knowledge in which they are acquiring will help them perform a task or solve a problem they may be facing in real life

***Motivation to learn*:** Internal motivation is key as a person matures. Although adults feel the pressure of external events, they are mostly driven by internal motivation and the desire for self-esteem and goal attainment.

***The need to know*:** Adults need to know the reason for learning something. In adult learning, the first task of the facilitator is to help the learner become aware of the need to know. When adults undertake learning some they deem valuable, they will invest a considerable amount of resources (Taylor & Kroth, 2009 p. 6).

Table 1

Application of Adult Learning Theory to this Project

Adult learning theory	Education project
Self-concept	Provide an environment for self-directed learning. The education session will be a power point presentation with minimal slides to allow for open discussion and participation. Also, a return demonstration of modalities will be done.
Experience	A pre questionnaire survey will be conducted to assess nurses' prior experience, knowledge and use of nonpharmacological techniques and modalities.
Readiness to learn	The significant and relevance of nonpharmacological techniques in relation to patient care will be discussed in the education session.
Orientation to learn	The education session will focus on nonpharmacological techniques with modalities taught to nurses to use as a tool to enhance patient care.
Motivation to learn	An outline of the program will be provided including relevance to practice and goal attainment (increase knowledge and confidence in nonpharmacological techniques).
The need to know	To address the need to know, the education session will outline the relevance and significance of the problem and the efficacy and benefits of nonpharmacological techniques.

According to the literature, nonpharmacological techniques can be effective as an adjunct to pain management. Several gaps in the literature exist; these include nurses' baseline knowledge, and ability to integrate nonpharmacological techniques into clinical practice. My focus in this DNP education project was to increase the nurses' knowledge and use of nonpharmacological techniques.

Knowles's theory of adult learning is an appropriate theory for this education project. The principles of the theory focus on the adult learning, their life experiences, and their readiness and motivation to learn. It is critical that principles from this theory are incorporated into the development of the education material. The educational session will focus on the readiness and motivation of the nurses to learn nonpharmacological tools that can be used in clinical practice. In addition, the nurse previous experience and need for information will be addressed with content presented to address the individuals' informational needs.

Definition of Terms

The following definition of terms will help in understanding the nature of the project:

Andragogy: The theory of adult learning. Referred to as learner-focused education (Taylor & Kroth, 2009).

Complementary therapy: In a nonmainstream practice, this term is used together with *conventional medicine* and is considered "complementary" (National Center for Complementary and Integrative Health., 2018).

Integrative health: Brings conventional and complementary approaches together. It emphasized a holistic, patient-focused approach to health care and wellness—often including mental, emotional, functional, spiritual, and social (National Center for Complementary and Integrative Health, 2018).

Nonpharmacological techniques: Management of pain without medications. Techniques include behavior therapy, relation techniques, and hot and cold application (Buyukyikmaz, 2014).

Opioid analgesics: Narcotics that act on opioid receptors to produce morphine-like effects (Hemmings, Hugh, Egan, & Talmage, (2013).

Local Background and Context

The local evidence indicates that opioids are primarily used for pain management postoperative orthopedic surgery. The literature and clinical observation demonstrate that despite the evidence on the efficacy of nonpharmacologic techniques, nurses rarely use these techniques in practice. Subsequently, numerous studies indicated that nurse's knowledge toward nonpharmacological techniques may be limited. The literature indicates that nonpharmacological techniques have been favorable to decrease pain following a total joint replacement. Therefore, it is imperative that nurses' knowledge on nonpharmacological techniques is assessed with deficits identified, and that education is provided to enhance their knowledge of and skills with such modalities.

Most recently, the academic medical center implemented an opioid sparing pathway to decrease the use of opioid analgesics in the postoperative patient. In this doctoral project, I will seek to enhance RNs' baseline knowledge towards nonpharmacological techniques in addition to increasing their ability to use nonpharmacologic techniques as an adjunct tool for postoperative pain management.

Role of the DNP Student

An evidence-based educational project will be conducted on an orthopedic unit in a large academic medical center. As the project leader, I will establish at team to facilitate the development and implementation of an evidence based education session on nonpharmacologic techniques for pain management. As a dual adult/holistic nurse practitioner and an expert in orthopedics, I have the experience necessary to facilitate this evidence-based project. In addition, I will use transformative nursing leadership, including partnering with key disciplines. The project team will consist of the nurse manager, assistant nurse managers, nurse practitioners, and registered nurses.

Summary

The project question is: Does providing RNs with an education program on nonpharmacological techniques for pain management increase their self-perceived knowledge of these modalities and confidence in using them as an adjunct to pharmacological pain management in postoperative orthopedic patients? A review of scholarly evidence demonstrates that nurses have a deficit in knowledge on nonpharmacological techniques and their use as an adjunct to pain management. Knowles's Theory of Adult Learning will be used to conduct the evidence-based education session. As the project leader, I will establish a team to develop and implement an education session on nonpharmacological techniques to registered nurses on an orthopedic unit at a large academic medical center. In the next section, I will discuss the method and facilitation of the project.

Section 3: Collection and Analysis of Evidence

Introduction

Nonpharmacological techniques have shown efficacious for pain management. The gap in knowledge, however, demonstrates that these techniques are underused in clinical practice. My purpose in this project is to develop and implement and evidenced-based education session focused on nonpharmacological techniques for RNs on an orthopedic unit. My objective is to assess nurses' baseline knowledge, and ability to integrate nonpharmacological techniques into clinical practice. In this section, I will discuss project planning, analysis, and synthesis.

Practice-Focused Question

The project question is: Does providing RNs with an education program on nonpharmacological techniques for pain management increase their self-perceived knowledge of these modalities and confidence in using them as an adjunct to pharmacological pain management in postoperative orthopedic patients?

Sources of Evidence

Planning

An educational quality improvement project, through the development and implementation of nonpharmacological techniques education session, will be conducted at a large academic medical center in the Tri State area on an acute orthopedic unit. The education session content drew on the knowledge of experts in the field as well as supporting literature. Education content and questionnaire review experts include a

manager/nurse practitioner from the department of integrative health and a nurse practitioner certified in pain management. I developed a questionnaire as the project leader, because there are no current standardized tools that assess nurses' perceptions of their own knowledge and use of nonpharmacological techniques. I developed a questionnaire was using Polkki et al. (2001) survey on Nonpharmacological Methods Questionnaire and Gelinas et al (2012) classification and definition of nonpharmacological interventions. A team will be established to facilitate the development and implementation of an evidence-based education session (Appendix A).

The educational session will be 45 minutes in length. An envelope will contain prequestionnaire material with each questionnaire coded by number for the purpose of deidentification. A second envelope will contain postquestionnaire material. To begin the education session, RNs will take a six-item prequestionnaire assessing self-perceived knowledge and ability to integrate nonpharmacological techniques into clinical practice. Once the questionnaire is complete, the RN will place it in a sealed envelope, labeled *PRE questionnaire.*

The participant will be given their matched coded postquestionnaire in an envelope not to be completed until the completion of the education session. Subsequently, a 20-minute educational intervention on nonpharmacological techniques (relaxation techniques and efficacy) for pain management will be conducted by myself, the project leader. To increase reliability, the education sessions will be presented in a similar format with equivalent pre/postknowledge questionnaires Once the education session is complete, the RN is to complete the postquestionnaire and place in a sealed

enveloped labeled *POST questionnaire.* To conclude the participants will conduct an evaluation of the program (Appendix B). There will be multiple early morning education sessions to capture a vast number of nurses working on day and night shifts.

Participants

Participants will be registered nurses on an orthopedic unit in a large academic medical center. All the RNs working on the unit will be invited to volunteer to participate in the education session. Recruitment methods will include announcements at staff meetings, emails and flyers on the unit.

The unit supports 21 full-time RNs with years of experience ranging from less than 6 months to 5 plus years. Majority of the nurses on this unit are novice nurses with less than 1 year of nursing experience. All of the registered nurse have a minimum of a bachelor's degree, with some having a certification in orthopedic nursing. The aim is to assess nurse's knowledge and use of nonpharmacological techniques and evaluate the efficacy of an evidence based-education session.

Setting

The education project will be conducted at a large academic medical center on an orthopedic unit. It is a 225-bed inpatient orthopedic hospital that has innovative programs and services and has earned an international reputation. It is among the top 10 hospitals in the country for orthopedics and obtained Magnet recognition for excellence in nursing for the second consecutive time by the American Nurses Credentialing Center, emphasizing world-class evidence based, patient-centered care. The orthopedic unit consists of 20 acute care orthopedic beds. The patient population includes adults aged

>18 years, with postoperative total knee replacement, total hip replacement, total shoulder replacement, or open reduction internal fixation from a fracture.

Implementation

An education session on nonpharmacological techniques for pain management will be conducted to resisted nurses on an orthopedic unit. A pre-self-assessment of knowledge questionnaire will be given prior to the education session. Subsequently, the same post-self-assessment knowledge questionnaire will be completed after the education session. The questionnaires will be returned to a secure envelope and stored in a secured location. The questionnaires will be analyzed after the completion of all the education sessions.

The questionnaire was adapted from both Polkki et al. (2001) survey on Nonpharmacological Methods Questionnaire and Gelinas et al (2012) classification and definition of *nonpharmacological interventions*. To improve content and construct validity. Polkki et al. (2001) presented the questionnaire to 35 Finnish nurses working in pediatric surgical wards. In addition, Cronbach's α test was used to assess the reliability of the questionnaire (Polkki et al., 2001). The adapted questionnaire tool used in this project consists of six nonpharmacological techniques and asks the nurse to rate their self-perceived knowledge and self-perceived confidence of the technique based on a 5-point Likert scale: 1 (poor), 2 (fair), 3 (average), 4 (good), and 5 (excellent) (Appendix A). The education content, questionnaire, and evaluation were reviewed by experts in the field.

Protections

This project will be in alignment with Walden University's Manual for Staff Education Projects. Ethical approval from the university's IRB will be obtained. IRB Approval # 01-31-19-0667820. Participants will consent using the "Consent for Anonymous Questionnaires" in the DNP Staff Education Manual. Consent will be obtained from the facility using the DNP staff Education Manual "Site Approval Documentation for Staff Education Doctoral Project." Participation of all subjects will be voluntary, with no personal identifying information collected from the nursing staff participating in the project. It will be in alignment with the site agreement. Finally, the ethical requirement will be honored, including deidentifying the organization, compliance with the organizations policies, no data collection from patient/families, and disclosure of confidential information within the project document. I do not foresee any potential ethical issues with this DNP project.

Analysis and Synthesis

Descriptive statistics will be used to analyze the data obtained from the pre and postquestionnaires.

Summary

This project will focus on the development and implementation of an evidence-based education session on nonpharmacological techniques to registered nurses on an orthopedic unit. A questionnaire given pre and posteducation intervention will evaluate nurses' baseline self-perception of knowledge and confidence in use of

nonpharmacological techniques before and after the education session. In Section 3, I discussed the planning, and implementation of the project. In the next section, I will discuss the finding and recommendation to practice.

Section 4: Findings, Implications and Recommendations

Introduction

The opioid epidemic is a public health crisis with significant economic consequences. The literature supports opioid sparing and using nonpharmacological techniques as an adjunct to pharmacological pain management, however these modalities are underused in nursing practice. There is a deficit in nurses' baseline knowledge, and learning needs to facilitate the integration of nonpharmacological interventions as an adjunct to pain management (Trail-Mahan et al., 2013). My purpose in this doctoral project was to develop and implement an evidence-based education program focused on nonpharmacologic techniques for pain management to RNs on an orthopedic unit. The aim of the project was to enhance nurses' self-perceived knowledge on nonpharmacological techniques, empower nurses in providing holistic patient centered care and improve postoperative pain management.

The educational program was developed and conducted to RNs on an orthopedic unit. The educational session was an overview of six nonpharmacological techniques: guided imagery, relaxation breathing, music therapy, thermal regulation, positioning, and environmental management. The practical focus was on relaxation breathing and guided imagery with instruction, demonstration, and return demonstration. I used a 5-point Likert scale to assess nurses' self-perceived knowledge and confidence pre/posteducational intervention (Appendix A). The Likert scaling system for this project was as follows: 1 (poor), 2 (fair), 3 (average), 4 (good), and 5 (excellent). Finally, the program concluded with an evaluation that measured the content of the education material (Appendix B).

A total of 18 registered nurses (N = 18) participated in the educational program. Table 2 represent the prequestionnaire of nurses' self-perceived knowledge. The table lists the nonpharmacological technique, and the participants rating for each question (as a percentage). Table 3 represents the prequestionnaire nurses' self-perceived confidence. The table list the nonpharmacological technique, and the participants rating for each question (as a percentage). Table 4 represents the postquestionnaire nurses' self-perceived knowledge. Table 5 represents the postquestionnaire nurses' self-perceived confidence. Table 4 and 5 contents also list the nonpharmacological technique, and the participants rating for each question (as a percentage).

Table 2

Prequestionnaire: Nurses' Responses to Self-Perceived Knowledge on Nonpharmacological Techniques

Nonpharmacological technique	N = 18	1 (*Poor*) %	2 (*Fair*) %	3 (*Average*) %	4 (*Good*) %	5 (*Excellent*) %
Guided imagery		17	61	17	0	6
Relaxation Breathing		0	17	50	28	6
Music therapy		0	50	39	6	6
Thermal regulation		6	0	33	50	11
Positioning		0	6	50	22	22
Environmental Management		0	6	28	56	11

Table 3

Prequestionnaire: Nurses' Responses to Self-Perceived Confidence in the use of Nonpharmacological Techniques With Patients

Nonpharmacological techniques use with patient	N = 18	1 (*Poor*) %	2 (*Fair*) %	3 (*Average*) %	4 (*Good*) %	5 (*Excellent*) %
		0	17	67	11	6

Table 4

Postquestionnaire: Nurses' Responses to Self-Perceived Knowledge on Nonpharmacological Techniques

Nonpharmacological technique	N = 18	1 (*Poor*) %	2 (*Fair*) %	3 (*Average*) %	4 (*Good*) %	5 (*Excellent*) %
Guided imagery		0	0	11	72	17
Relaxation breathing		0	0	0	56	44
Music therapy		0	0	6	61	33
Thermal regulation		0	0	6	39	56
Positioning		0	0	6	44	50
Environmental Management		0	0	0	44	56

Table 5

Postquestionnaire: Nurses' Responses to Self-Perceived Confidence in Use of Nonpharmacological Techniques With Patients

Nonpharmacological technique	N = 18	1 (*Poor*) %	2 (*Fair*) %	3 (*Average*) %	4 (*Good*) %	5 (*Excellent*) %
		0	0	0	61	39

Nonpharmacological Techniques Questionnaire Data

Knowledge. The data obtained from the pre/post-self-perceived knowledge and confidence questionnaire demonstrated the efficacy of the educational program. The knowledge Pre educational questions measure the participants (N=18) self-perceived knowledge on six nonpharmacological techniques: guided imagery, relaxation breathing music therapy, thermal regulation, positioning and environmental management. A trend was noted for an increase in knowledge in all nonpharmacological techniques post educational intervention. The participants reported a significant improvement in self-perceived knowledge on Guided Imagery. *Pre* questionnaire 17% (n=3) responded to Poor knowledge, 61% (n=11) responded to *Fair*, while none of the participants responded to *Good*, knowledge and 6% (n=1) participant responded that they had *Excellent* knowledge. *Post* intervention questionnaire, 72% (n=13) responded that they had *Good* knowledge, while only 11% (n=2) responded that they have *Average* knowledge and 17% (n=3) responded that they have *Excellent* knowledge. There was a 72% increase in the participant's response to *Good* knowledge on Guided imagery. Furthermore, indicating the education intervention was effective in enhancing nurse's self-perceived knowledge.

The second modality, prequestionnaire on Relaxation breathing, 50% (n=9) responded that they have *Average* knowledge on Relaxation breathing while, only 6% (n=1) responded that they had *Excellent* knowledge. Post questionnaire, 56% (n=10) reported a *Good,* knowledge, while 44% (n=8) reported an *Excellent* in self-perceived knowledge of Relaxation breathing. This demonstrates that the education intervention increased the nurses' self-perceived knowledge by 38% in the category of *Excellent*

knowledge. The third modality, Music Therapy, there was a significant increase in self-perceived knowledge from pre/post educational intervention. In the prequestionnaire 50% (n=9) responded that they had *Fair* knowledge, 38% (n=7) responded that they had *Average* knowledge, only 6% (n=1) responded that they had either *Good* or *Excellent* knowledge on Music therapy. Postquestionnaire 61% (n=11) responded that they had *Good* Knowledge on music therapy after the educational invention. This further demonstrated that the education intervention increased the nurses' self-perceived knowledge on music therapy by 55% in terms of the response to *Good* knowledge.

The fourth and fifth nonpharmacological techniques measured were Thermal Regulation and Positioning. The participants rated their *pre* self-perceived knowledge on Thermal Regulation as *Average* and *Good* with only 11% (n=2) participants indicating that they had *Excellent* knowledge in Thermal Regulation. However, postquestionnaire on Thermal Regulation increased with a response of 39% (n=7) participants responding as *Good* knowledge and 56% (n=10) participants responded that they had *Excellent* knowledge post education intervention.

Positioning, the fifth nonpharmacological techniques, in the Prequestionnaire, 6% (n=1) responded that they had *Fair* knowledge, 50% (n=9) participates responded that they had *Average* knowledge, 22% (n=4) responded *Good* knowledge, and 22% (n=4) responded *Excellent* knowledge on the modality. Postquestionnaire, majority of the participants responded to *Good* and *Excellent* knowledge with 50% (n=9) participates responded that they had *Excellent* knowledge in Positioning post intervention. Therefore,

indicating nurses reported an increase in knowledge in positioning *post* education intervention.

The final nonpharmacological technique that was measured was Environmental Management. In the Prequestionnaire 6% (n=1) participated responded that they had *Fair* knowledge, 28% (n=5) participants responded that they have *Average* knowledge, 56% (n=10) responded that they had *Good* knowledge and 11% (n=2) responded that they had *Excellent* knowledge. Post intervention 44% (n=8) responded that they have *Good* knowledge and 56% (n=10) indicated that they have *Excellent* knowledge. It is important to note nurses' self-perceived knowledge on Environmental Management increased 45% in the response of *Excellent* knowledge post education intervention.

Confidence. The data obtained from the pre/post self-perceived confidence questionnaire demonstrates an increase in confidence post education intervention. The Pre/Post questions measure the participants (N=18) confidence in the use of nonpharmacological techniques with patients. In the pre*q*uestionnaire 17% (n=3) of the participants responded that they had *Fair* confidence, 67% (n=12) participants responded that they had *Average* confidence, 11% (n=2) responded that they had *Good* confidence and 6% (n=1) participants responded that they had *Excellent* confidence in the use of nonpharmacological techniques in patient care. In the *Post* education intervention questionnaire, 61% (n=11) responded that they had *Good* confidence and 39% (n=7) responded that they had *Excellent* confidence with the use of nonpharmacological techniques in patient care. The data analysis indicates that the nurses self-perceived confidence posteducation intervention increased in terms of the response *Good* by 50 %

and response *Excellent* by 33% demonstrating the efficacy of an evidence- based education program on nonpharmacological techniques.

Education Evaluation Data

An overall evaluation of the content material was provided. A 5-point Likert scale was used to assess the evaluation of the evidence-based educational program (Appendix B). The Likert scaling system for this evaluation was as follows: 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), and 5 (strongly agree). In all of the questions asked on the evaluation tool, participates response was either a 4 (agree) or a 5 (strongly agree). The data obtained from the evaluation tool clearly demonstrated the validity of the educational content and appropriate content delivery.

In summary, the data analysis indicates a trend in the increase in nurses' self-perceived knowledge in all nonpharmacological techniques post educational intervention. The most significant increase in knowledge posteducational intervention were in guided imagery, relaxation breathing and environmental management. In addition, nurses' self-perceived confidence increased significantly Posteducation questionnaire demonstrating the efficacy of the educational program. Finally, the data analyzed supports the content of the education program and the relevance of this content to nursing practice.

Implications

Clinical practice. The Doctoral Prepared Nurse Practitioner is challenged with ability to translate evidence into clinical practice. Evidence based practice (EBP) guides clinical decision making. When EBP is provided in the context of caring, it leads to the best clinical decision making as well as positive outcomes for patients

and their families. The Institute of Medicine (IOM) (2001) outlined core elements of high-quality health care which include safety, effectiveness, timeliness, efficiency, equity, and patient-centeredness (Institute of Medicine, 2001). The evidence based project demonstrated an increase in nurses' self-perceived knowledge and confidence on nonpharmacological techniques for pain management. With ongoing mentorship and guidance, these modalities will be used in clinical practice to improve postoperative pain management and enhance the patient care experience.

Policy Impact. As a DNP Prepared Nurses practitioner dissemination of findings on a local and national level are of the essence. This project on nonpharmacological techniques for pain management can be used as a standardized evidence-based education program throughout the institution and organization at large. In addition, the findings can be used to advocate at a state level for the inclusion of complementary and holistic nursing into the nursing curriculum.

Research and Scholarship. DNP-prepared nurses' have a significant role in research. Advanced practice nurses (APNs) with clinical expertise helps to bridge the gap between theory and practice of nursing (O'Grady, 2011). Transformational leadership is vital for Doctoral Prepared Nurses to demonstrate their ability to collaborate with other disciplines in health care decision making (AACN, 2006). Nurse Leaders are challenged to develop change strategies necessary to enhance patient satisfaction, quality and safety (O'Grady, 2011). The project provides a comprehensive education intervention with a focus on evidence based nonpharmacological techniques for pain management. Further

research will continue once the project is complete and the academic requirements are met. In ongoing collaboration with the Integrative Health Department, research will assess the nurses' competence and ability to utilized the techniques in patient care, the patients' response to the nonpharmacological techniques and assess the quality and patient satisfaction. The findings from the research will be disseminated on a local and state level.

Social Change

This project has implications to positive social change. The social impact of opioids and their misuse have contributed to drug overdose and opioid involved deaths (CDC, 2017). Opioid sparing and combining pharmacological and nonpharmacological treatment to pain management has been clearly supported in the literature. Nurses' are in a pivotal position to effect healthcare quality and enhance the patient care experience. This project demonstrates the efficacy of an evidence-based education program on nonpharmacological techniques for pain management in enhancing nurses' self-perceived knowledge and confidence in their use with patients. The outcomes of this project will have an impact in the follow domains: empower nurse' to provide holistic patient centered care, support opioid sparing in keeping in alignment with patient safety, and provide a program in which can be replicated in other settings to increase nurses knowledge and confidence in nonpharmacological techniques for pain management.

Contribution of the Doctoral Project Team

The doctoral team consisted of the of Nurse Manager, Assistant Manager, Unit Educator, Nurse practitioners and registered nurses- included two nurse champions. The

team was instrumental in the development and implementation of the program. In addition, the team assisted in the recruitment efforts of participants, coordination of care and coverage of participants to attend the education program and as a resource in clinical practice.

Strengths and Limitations of the Project

Strengths

An evidence based-educational intervention was successful in enhancing nurses' self-perceived knowledge and confidence on guided imagery, relaxation breathing, music therapy, thermal regulation and environmental management. The evaluation of the program demonstrated the efficacy of the evidence-based project. Furthermore, the methods of this project can be replicated in other settings to increase nurse' knowledge and confidence in nonpharmacological techniques for pain management. Finally, an additional strength was the high rate of RN participation in which 85% of the RNs on the unit participated in the quality improvement project.

Limitations

The main limitation is a one-time education class. A one-time class often does not validate the ability to apply and translate the information. Teaching and learning principles support the need for repetition of material to enhance the integration of material (Knowles, Holton & Swason, 1998). Ongoing learning and in-depth information of one therapy is needed with further mentoring in the clinical setting (Hessig et al., 2004). In addition, the project dose not measure the participated expanded knowledge however only measures their self-perceived knowledge of the content of the project.

Finally, the project was conducted on a small number of participates limiting the generalization of the results. Thus, it should be repeated in a larger population.

Recommendations

The educational program on nonpharmacological techniques for pain management demonstrated an increase nurses' self-perceived knowledge and confidence in their use in clinical practice. Further recommendations are ongoing educational session with an in-depth focus on specific modalities. This would include measuring competencies in a standardized format. In addition, further mentorship and guidance for nurses' in utilizing the techniques learned in clinical practice. Finally, further research is needed to evaluate outcomes to determine if expanded education and clinical mentorship enhances nurse' knowledge and use of the techniques in clinical practice.

Section 5: Dissemination Plan

Dissemination of Findings

In light of the opioid epidemic and in alignment with patient safety, the institution where the project was initiated reviewed and modified their postoperative pathway to an opioid sparing pathway. This project supports the opioid sparing course in keeping with patient safety, empowering nurses in using nonpharmacological techniques as an adjunct to pain management and improving patient care. It is vital to disseminate EBP findings to stakeholders and other health care professionals to enhance innovation and replication in other settings (Forsyth, Wright, Scherb, & Gaspar, 2010). The project will be disseminated using a scholarly written format, poster design and power point presentation.

The dissemination of findings will include multiple venues at a local, state, and national levels. Within the organization, the project will be presented to stakeholders including the chief nursing officer, VP of nursing, and director of nursing and nursing leadership. In addition, the project will be presented at the Evidence Based & Research Nursing Council, Advanced Practice Nurse Council, and the organizations Innovation and Research Conference. Furthermore, the project will be submitted for conference acceptance through organization such as American Nursing Association, National Association of Orthopedic Nurses, and American Holistic Nurses Association. Finally, the dissemination plan includes a scholarly submission for publication. Once accepted, the findings will be disseminated to all clinician across the health care continuum.

Analysis of Self

Practitioner

As a dual adult/holistic nurse practitioner and an expert in orthopedics, I had the experience necessary to facilitate this evidence based project. I was able to draw on my own knowledge and experience in holistic nursing and nonpharmacological therapies in addition with the literature, to facilitating the educational sessions with the nurses. The nurses' evaluation of the program demonstrated a sense of empowerment to provide holistic patient centered care. As a practitioner, leadership engagement is essential in the institutionalization of evidence-based practice. I have learned that effective leadership involves inspiring others, role modeling, seeking insight and providing feedback in implementing quality improvement and evidence-based practice.

Scholar

DNP-prepared nurses have a significant role in scholarship. Advanced practice nurses (APNs) with clinical expertise helps to bridge the gap between theory and practice of nursing. Through this rigorous Doctoral process, I have been able to review the literature, critically appraise it and translate evidence into clinical practice. Through academic advancement, mentorship and professional growth, I was able to successfully develop, implement, evaluate and disseminate an evidence-based project that will promote quality and improve health outcomes.

Project Manager

The Institute of Medicine (IOM) emphasized the development of leadership capacities and collaborative efforts which are fundamental to advancing the nursing profession (O'Grady, 2011). Effective and strong leadership is vital for nurses to

demonstrate their ability to collaborate with other disciplines in health care decision making. Nurse leaders are challenged to develop change strategies necessary to enhance patient satisfaction, quality and safety (O'Grady, 2011). As the project manager, I have learned the essence of interprofessional collaboration, transformational leadership, communication and organization. Stakeholder engagement is vital in project planning, implementation and evaluation. A potential challenge in data collection was staffing and coverage for nurses to attend the education session. However, though strategically collaborating with the Nursing Managers and nurse champions we were able to coordinate coverage so nursing could participate in the program. Ongoing collaboration and meetings with stakeholder and end-user was significant in the successful implementation of this DNP project.

Summary

The DNP project is innovative and unique to this specific population. There is an emphasis on opioid sparing and combining pharmacological and nonpharmacological therapy for postoperative pain management. The evidence-based education program was effective in increasing nurses' self-perceived knowledge and confidence on nonpharmacological techniques for postoperative pain management. The findings of this project will be disseminated on a local and national level, adding significant value to the nursing profession and the patience care experience.

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Appendix A: Nonpharmacological Techniques Knowledge Self-Assessment Questions

Pre/Postsurvey

Circle the answer that would best represents your self-perceived **Knowledge** on the non-pharmacological technique

1- Poor
2- Fair
3- Average
4- Good
5- Excellent

	Poor	**Fair**	**Average**	**Good**	**Excellent**
	1	2	3	4	5
Guided Imagery • **Purposeful use of imagination to achieve relaxation and/or direct attention away from undesired sensations**	1	2	3	4	5
Relaxation breathing • **Using breathing techniques to encourage and elicit relaxation for the purpose of alleviating symptoms**	1	2	3	4	5
Music therapy • **Using music to help achieve a specific change in behaviour, feeling or physiology**	1	2	3	4	5
Thermal Regulation (Heat/cold) • **Stimulation of the skin and underlying tissue with heat or cold to relieve pain**	1	2	3	4	5
Positioning • **Deliberate placement of the patient or body part to promote physiological or psychological well-being**	1	2	3	4	5
Environmental management • **Manipulation of the patient's surroundings for promotion of optimal comfort (e.g.to reduce light intensity, alarms and noise reduction)**	1	2	3	4	5

Circle the answer that would best represents your self-perceived **Confidence** in the use of the non-pharmacological techniques with your patients

1- Poor
2- Fair
3- Average
4- Good
5- Excellent

	1	**2**	**3**	**4**	**5**
• **Confidence in the use of non-pharmacological techniques with my patients**	1	2	3	4	5

Appendix B: Nonpharmacological Techniques Education Evaluation

Circle the answer that would best represents your evaluation of the program

1. Strongly Disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

	Strongly Disagree	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
	1	2	3	4	5
• **I gained new insight on the background and impact of opioid use**	1	2	3	4	5
• **I gained new insight on the benefits of non-pharmacological techniques**	1	2	3	4	5
• **I gained new knowledge and technical skills for using non-pharmacological techniques**	1	2	3	4	5
• **I feel empowered to use the techniques in patient care**	1	2	3	4	5
• **The topics discussed in the education session were relevant to my position as a registered nurse**	1	2	3	4	5
• **The information was appropriate for the time allotted**	1	2	3	4	5