Improving Nurses' Pain Management Knowledge and Attitude

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Abstract

This Quality Improvement (QI) project was conducted to improve Registered Nurse (RN) pain management knowledge and attitude. Pain control and management in the acute care setting is repeatedly described in the literature as inadequate. Ineffective management of pain is a current problem having financial impact related to ineffective pain control. Ineffective pain management costs approximately 635 billion annually with Medicare holding one fourth of the expenditures (IOM, 2010). This study examines the effect of an 8-hour pain educational program and its effect on the pain management knowledge and attitudes of (n=40) RNs' in attendance. A learning needs assessment identified an immediate need to improve our RNs' pain management knowledge and attitudes. RNs' attending the Pain Resource Nurse (PRN) eight-hour program were offered a voluntary pre-survey, attend the 8-hr. learning activity, and then completed a post-survey. The "Knowledge and Attitudes Survey Regarding Pain" a valid and reliable pre- and post-survey instrument for data collection to measure pain knowledge and attitudes. A matched pair t-test was performed to test the statistically significant difference between the Pre proportion correct and the Post proportion correct. The pain management knowledge improved as resulted by a mean test score = 0.145 and p-value 0.0002, attitude improved mean test = 0.07 and p-value 0.0009, overall improvement (knowledge and attitude) mean test = 0.18, p-value <0.0001. Findings showed a statistically significant difference in proportion correct. The statistically significant findings suggest the PRN program is a catalyst for nurses' improved understanding of pain management knowledge and attitude.

Chapter 1

Introduction

It is recognized that pain management is a priority in nursing care. The professional Registered Nurse (RN) in the acute care setting performs a vital role in managing a patient's pain symptoms. However, there is an acknowledged gap in nursing pain management knowledge and attitude. Evidence clearly indicates there is a RN knowledge deficiency prohibiting effective pain management. Insufficient treatment of pain is an ever-present clinical problem in hospitalized patients (Zhang et al., 2008, p. 617). Pain control in the acute care setting is repeatedly described in the literature as inadequate.

A pain resource nurse (PRN) program educates nurses on a variety of skills to improve the quality of patient care by increasing nursing's pain management knowledge and attitude. A PRN program offers nurses specific skills along with an understanding of how to positively change patient perceptions and empower nurses to effectively move toward meeting the benchmarks of patient satisfaction (Schroeder et al., 2016, p. 116). Safe and reliable patient-centered care can be achieved by incorporating a comprehensive evidence-based PRN educational program. A number of pain programs have suggested incorporating a valid and reliable pre- and post-survey evaluation tool. Pain researchers claim the "Knowledge and Attitude's Survey Regarding Pain" tool can be used to assess nurses and other professionals in

the clinical setting by functioning as a pre- and post-survey evaluation measure for educational programs and providing a means to communicate learning needs (Ferrell & McCaffery, 2012).

The implementation of a valid and reliable pre-and post-survey tool in combination with the delivery of behavior change teaching methods was selected. The application of an evidence-based pain management program was developed and delivered in an interactive learning format. The PRN program included a reliable and valid pain management knowledge and attitudes assessment that provides the learner insight of their current pain knowledge and personal attitudes toward a patient's pain. The PRN program learning objectives are developed to specifically improve pain management knowledge and attitude skills. Patient satisfaction may improve when nurses are provided education to increase pain management knowledge and attitudes to provide effective patient care.

Drake and Williams (2016) reveal nursing education interventions for pain management in acute care settings by completing a systematic review on clinical outcomes and teaching methods (p. 10). The majority of studies use a range of didactic and interactive teaching methods to facilitate behavior change. The teaching strategies ranged from role-plays, vignettes, feedback on performance, group discussions, and ongoing support that mapped into many of the domains involved in behavior change. The University of Pittsburgh Medical Center (UPMC) PRN program includes teaching strategies and educational interventions that facilitate behavior change.

Pain control in the acute care setting is repeatedly described in the literature as inadequate. Ineffective pain management has been recognized as a world-wide phenomenon. Increasing pain management knowledge is a best practice to managing pain effectively. The Institute of Medicine (IOM) goals aim to provide care that is safe, effective, patient centered, timely, efficient, and equitable (Rutherford, Moen, & Taylor, 2009, p. 5). Nurses are central to advancing health and are called to make transformations to achieve the IOM recommended pain management goals.

Background of the problem

There are barriers to optimal pain management in hospitalized patients. It has been stated that, "Inadequate treatment of pain is a pervasive clinical problem in hospitalized patients" (Zhang et al., 2008). Providing effective pain management is a clinical problem that plagues many healthcare systems.

There is an observed lack of nursing pain management knowledge in registered nurses. The literature shows that there is a lack of current knowledge and practice of effective pain management as commented in the statement, "Effective pain management is a national and global challenge" (Glowacki, 2015). The patient and the organization suffer when pain management is not achieved in the acute care setting.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is the first national, standardized, publicly reported survey of the patient perspectives regarding their hospital care and experience. The HCAHPS has six summary measures that condense how well nurses and doctors communicate with patients, how responsive hospital staff are to patients' needs, how well hospital staff help patients manage pain, how well the staff communicates with patients about medicines, and whether key information was provided to the patient at discharge. The goal of the UPMC organization is to provide world-class health care to every patient and excel in the HCAHPS reports. Patient perception is important particularly when considering how well hospital staff help patients manage pain.

Pain management is essential to patient care. A UPMC accreditation organization reports, "The Joint Commission and the World Health Organization, along with many national professional organizations and agencies, have recognized that pain management is an essential aspect of patient care" (Glowacki, 2015). In addition, the national database of nurse quality indicators (NDNQI) study, which concluded in May 2012, claims that disparities in treating pain continue and the failure to treat pain could be viewed as a breach of human rights (Glowacki, 2015, p. 39). Gaps in pain management knowledge and the care givers attitude regarding pain management could have significant consequences for the patient experiencing pain and the healthcare organization.

The basic principle of the PRN program is improve pain management knowledge and attitude. Improving pain management knowledge and attitude in the UPMC registered nurse (RN) enhances patient advocacy that can lead to improved pain management. Following the PRN program, the registered nurse will function by disseminating best practices in pain management, collaborating and communicating with the healthcare team, and partnering with patients and families to collaborate on treatment strategies to achieve effective pain management.

Nurses are key in assessing and caring for reported pain. As cited by Glowacki, 2015, p.34, "Pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does". Nurses are patient advocates and act on the patient's behalf to improve pain management. Nurse's knowledge and attitude is critical to effectively managing patient's pain.

Nurses assess and re-assess, plan, treat, monitor and evaluate in their professional practice. Glowacki (2015) lists "The five most current guidelines from the American Pain Society released in 2005, include prompt recognition and treatment of pain, involvement of patients in the pain management plan, improvement of treatment patterns, reassessment and adjustment of the pain management plan as needed, and monitoring processes and outcomes of pain management" (p. 34). Nurses are in a pivotal role to improve pain management.

When a patient receives adequate pain management, it is known to enhance earlier mobility and lessen potential complications related to a lack of movement. One article suggests, "Patients who receive pain management education required 50% fewer narcotics during

hospitalization, excluding the day of the procedure, and were discharged sooner than patients who did not receive the education" (Glowacki, 2015, p. 35). Nurses acknowledge that a lack of effective communication and patient pain management education by the health care team may result in poor outcomes for the patient.

The patient pain assessment completed on admission is critical. Collecting a thorough and adequate pain assessment is very important to achieving effective pain management. The patient reports pain as a subjective individual experience. Nurses are educated to follow the system pain management policy. When a patient reports having pain nursing must believe what the patient says they are experiencing and take action to develop an agreed upon pain management plan of care to manage the reported pain. The nurse needs to assess the current method of pain management and its effectiveness along with an assessment of their spiritual and religious beliefs and any socio-cultural components. It is important for nurses to do a thorough pain history assessment upon admission and discuss with the patient their individual goals and expectations for pain management. When the pain assessment is done thoroughly this nursing action can make a marked difference in the patient's pain control and can result in beneficial outcomes. The pain management treatment plan of care can benefit from increasing the pain management knowledge and attitude of the RN.

Purpose

The World Health Organization (WHO) reported that pain relief has been acknowledged as a basic human right. However, the research suggests that disparities in treating pain continue. Applying evidence-based practice approaches offered in the UPMC PRN program and enhancing the importance of collaborating with interdisciplinary teams could take steps toward an effective plan to manage pain. These practices are said to be highly correlated with improved patient recovery, outcomes, knowledge, and satisfaction with the patient pain management (Schreiber et al., 2014, p. 475).

Morgan and White (2009) claim, "Provider fears of addiction, lack of knowledge of pain management and lack of knowledge about the disease of addiction, as well as the stigma around opiate use have been identified as barriers to treatment of pain" (p. 41). Nurses can benefit from a pain management program that improves pain management knowledge and attitude. The PRN program will provide educational content to better assess, advocate, and appropriately manage every patient's pain experience individually and devoid of assumptions. The UPMC PRN program provides education on pain assessment and encourages reflection on the nurses' own personal attitudes toward complaints of pain especially pain reports from the addicted patient population. Morgan and White (2009) state, "Nursing attitudes toward complaints of pain in this population may result in inadequate pain assessment and management; assumptions that requests for medication our drug-seeking behaviors are a barrier to adequate pain assessment and treatment" (p. 41). Nurses may experience fear of the disease of addiction which may be a

barrier to treating a patient's pain, enhancing the importance for all healthcare providers to refrain from judgment during their pain assessment.

Research question

What is the effect of a Pain Resource Nurse (PRN) program on Registered Professional Nurses' pain management knowledge and attitudes, within an eight-hour time frame?

Nurses' lack of knowledge and attitude regarding pain management and ineffective team collaboration and communication are barriers to effective pain management. To ensure the best quality of care for hospitalized patients experiencing pain, nurses need effective knowledge and attitude to manage pain.

This study will examine the effect of an eight-hour pain management program and its effect on the pain management knowledge and attitudes of the UPMC professional registered nurses after attending.

Analysis from a healthcare systems perspective would be influenced by the improved outcomes of a PRN program as stated, "Pain is one of the chief complaints of patients in both primary care and emergency departments and pain is common in the hospital setting" (Zoega, Gunnarsdotti, Wilson, & Gordon, 2016, p. 7). It is necessary to improve nursing pain management knowledge and attitude in healthcare.

Theoretical Framework

Theory guides nursing practice and it is important for nurses to understand the intention of the theorist. Katherine Kolcaba's Nursing Comfort Theory provides a framework for application to pain management nursing practice. "Kolcaba theory of holistic comfort can guide nurses in the teaching and the application of comfort measures" (Koehn, 2000, p. 67). The Theory of Comfort considers patients to be individuals in need of health care and Kolcaba's Comfort Theory describes comfort as holistic and simply what the individual is experiencing.

Tracy and DiNapoli (2012) emphasize, "Dossey's (2008) theory of integral nursing is a new holistic theory that provides opportunities for nurses to invest in a worldview that embraces the caring behaviors central to the delivery of nursing care and encourages nurses to design care that is relationship centered and focused on healing" (p. 26). Pain is the most common symptom which nurses need to manage. Pain is a multi-dimensional subjective phenomenon that the patient may be experiencing. It is known by many healthcare members that pain is one of the most common symptoms experienced by most patients and the reason they seek medical assistance. The knowledge that nurses gain through education regarding effective strategies to manage pain is essential. Possessing knowledge of the integral nursing theory is currently lacking because it precludes effective application of its theoretical concepts in clinical practice. When a nurse doesn't have knowledge about the integral nursing theory, it inhibits the nurse from the improvement of pain management practice and inhibits the patient's ability to

participate in pain management interventions that are individualized to provide optimal patient pain management. Integral nursing theory is focused on a broader and deeper view of care where the nurse and the client collaborate in the development of a trusting relationship as they intentionally strive to improve client outcomes and ultimately enhance client, nurse, and provider satisfaction with care (Tracy & DiNapoli, 2012, p. 26).

Definition of Terms

Pain. The International Association for the Study of Pain (IASP) defines pain, "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." The American Pain Society supports the IASP definition of pain.

Pain Resource Nurse (PRN). A Pain Resource Nurse is a registered nurse who functions as both a resource and change agent in disseminating information, interfacing with nurses, physicians, other health care providers and patients and families to facilitate quality pain management at UPMC.

Chapter 2

Literature Review

Introduction

Pain management is a fundamental nursing role; however, many authors say that registered nurses' pain management knowledge and attitude are lacking. Studies have shown the effect of an evidence based Pain Resource Nurse (PRN) program on registered professional nurses' pain management knowledge and attitude. The literature provides exemplars of research that examine the effectiveness of PRN programs. With past research and interventions examined, this critique reviews previous effects of implementing a PRN program in addition to measuring learning using a valid and reliable survey. The literature review examines the effective outcomes of a PRN program on Registered Nurse (RN) pain management knowledge and attitude.

Critique and Synthesis of Previous Research

Past interventions to address enhancing pain management knowledge and attitude.

According to Tse and Ho (2014), it is of concern that registered nurses lack adequate pain management knowledge. In response to the lack of pain management knowledge Tse and Ho (2014), have investigated pain management education. The study focuses on healthcare workers'

current knowledge levels and attitudes regarding pain management and investigates the effectiveness following an intensive and comprehensive pain management program (PMP) in improving the knowledge and attitudes. Pain is a common symptom that can lead to many adverse effects that impact one's quality of life. A number of studies have looked at the need for nursing staff to improve pain management knowledge beginning with improving pain assessment skills.

The Nurse's Knowledge and Attitudes Survey Regarding Pain (NKASRP-C) pre-survey results reported knowledge deficits in pain management. The intervention designed by researchers Tse and Ho (2014) was an eight-week integrated Pain Management Program (PMP) aimed at translating behavioral intentions into practice using Knowles Adult Learning Principles. The quasi-experimental pre-test post-test design captured data from 88 healthcare providers. The reported study results showed there was a significant increase in pain knowledge after the eight week PMP. Common sense seems to dictate that PMP's are needed for healthcare professionals. Professional nurses' ongoing exposure to educational opportunities that focus to enhance pain management knowledge and attitude is critical to improving nursing care in pain management.

Schreiber, et al. (2014) report that ineffective management of pain is a worldwide phenomenon. They also recognize that the Institute of Medicine (IOM) 2010 report claims "Forty-three million Americans are affected by perioperative pain and less than 40% report adequate pain relief after discharge" (IOM, 2010). To elaborate further the IOM in their 2010

report stated, 74% of patients discharged from emergency departments experience moderate to severe levels of pain and more than 50% of cancer patients report ineffective management of pain (Schreiber, et al., 2014).

A national pain management expert worked with nurses over two days to examine the effect of the educational intervention implemented to improve the management of pain. Schreiber et al., (2014) implemented the Brockopp-Warden Pain Knowledge Bias Questionnaire (2014) as a pre-and post-intervention design. The BWPKBQ tool is a 24-item questionnaire designed to examine knowledge of pain management administered to 341 professional nurses (Schreiber, et al., 2014). The data reported for this study proved no statistically significant differences found in the pre-and post-intervention total pain knowledge scores. The study recognized that even though there were no statistically significant changes in overall professional nurses' knowledge or bias pre-and post-intervention; there were indeed areas for improvement identified from the survey results that led to key organizational changes in pain management.

In addressing the question, "Does a PMP improve the nurse's pain management knowledge and attitude?" it is important to consider the educational content being delivered, if the curriculum is evidence-based, and what healthcare providers are receiving the education. The University of Wisconsin Board Of Regents (2008) created the Pain Resource Nurse (PRN) program which is a widely used curriculum made up of multiple pain modules. The purpose of a PRN program is to prepare registered nurses to take an active role in pain management. The

modules provide a comprehensive pain program to deliver an evidence-based pain management curriculum to the healthcare provider.

The study was conducted at a small-town Hospital in Bindura, Zimbabwe located in South Africa. The study focused on the pain management knowledge and attitudes of registered nurses caring for adult medical patients. A number of researchers have recently suggested that this line of examination is vital because the absence of pain is part of the basic human rights to health (Manwere, Chipfuwa, Mukwamba, & Chironda, 2015). The Nurses Knowledge and Attitudes Survey Regarding Pain (NKAS) tool was selected and administered to 50 registered nurses to determine current state of pain knowledge.

When considering the Manwere et al., (2015) study in relation to other studies along the same lines, The Bindura Hospital study failed to meet the minimal acceptable score of 80% revealed by the pre-survey data. The mean total pre-survey knowledge score resulted in 64.5% and the mean total attitude score resulted in 56%. In summary, both pre-survey scores fell below acceptable range. The pre-survey results were quite disturbing for The Bindura Hospital leaders because they recognize nurses having a key responsibility in pharmacological and nonpharmacological therapies in pain management. In conclusion, then hospital plans for continuing education with the expectation that continued education will have a significant impact on nurses' knowledge and attitudes toward pain management.

A number of recent studies suggested that there is an enduring need for a PRN educational program. Grant et al. (2011) states, “PRN trained nurses expressed improved confidence in pain management and attributed course content to the improvement in their practice behavior”. The Bindura Hospital leaders acknowledge Knowles assumption of adult learning, in combination with, the City of Hope PRN training course as best practice and a course of action. The City of Hope PRN program can prepare nurses to function as role models for pain management. The PRN training course consists of evidence-based modules developed to train nurses who will act as resource and support at their own institutions. Grant, et al., (2011) conclude, “It is clear that nurses play a key role in advocating for optimal pain management, and pain education program such as the PRN course can be a catalyst for improved pain management.” Grant et al. claims, “The findings of this study contribute to the understanding of a nurse’s role in pain management as well as the impact of nursing knowledge on patient’s pain outcomes in clinical settings (Grant et al., 2011).”

According to both Chow and Chan (2015), there is a need for future research specifically on the development of pain knowledge and attitude evidence-based interventions. Chow and Chan (2015), completed a thorough analysis of eleven studies worldwide and documented the findings which can be categorized into two sections. One section focused on the assessment of pain knowledge and attitude and another section focusing on the evaluation of a pain education program for nursing students. The pain education program for nursing students reviewed four separate studies. All four studies were nursing students in a pre-licensure program using various

study designs. In conclusion, Chow and Chan (2015) defined the benefits of enhancing PMP for nursing students and the need for future research specifically on the development of evidence-based interventions to improve student nurses' pain knowledge and attitude.

Chow and Chan reporting on eleven studies utilized various versions of "The Nurses Knowledge and Attitudes Survey Regarding Pain (KASRP)" instrument developed by Ferrell and McCaffery in 1998. One study out of the eleven showed no significant effect on attitudes toward cognitive-behavioral pain management. That same study utilized a knowledge and attitude of pain management questionnaire designed by the author following a 20 minute training program. It is important that healthcare organizations have knowledge of the pain management curriculum provided to nursing students to prepare them for the responsibility of quality patient care in the real life setting to prepare them to perform their responsibilities in pain management once they move to the workforce as future nurses.

Nursing education interventions to improve pain management in the hospital setting.

Drake and Williams (2016) examined literature using a systematic review approach. Twelve studies were examined spanning the globe from ten different countries. The studies examined and conducted an educational intervention ranging from 20 minutes to 15 hours of education. All studies did include a didactic teaching component focusing on best practices,

skills training, and delivery of misconceptions about pain. The evaluation of educational interventions were lacking in the studies.

Zoega, Gunnarsdottir, Wilson, and Gordon, (2016) performed a concept evaluation on Quality Pain Management (QPM) in adult hospitalized patients. Pain is common in hospital settings; however, pain treatment continues to be lacking. QPM is a multidimensional concept that relates to the three pillars structure, process, and outcomes of quality healthcare. In 2010, The Joint Commission Pain Management Standards indicated healthcare providers should receive appropriate training on pain assessment and management. According to Zoega et al., (2016) the Donabedian Model indicates staff education and training as a structure within the model to improve patient outcomes and enhance quality of life.

Al Qadire and Al Khalaileh (2014) performed a study to evaluate the impact of pain education for Jordanian nurses. The study examined the effectiveness of a six hour PMP provided to 70 nurses. A pre-and post-survey instrument was administered to all 70 nurses measuring their knowledge and attitudes regarding pain management. The pre-test findings from the study revealed nurses' low level of knowledge regarding pain management. The post-test findings which occurred two weeks after the training revealed nurses showed significant improvement on all items in the survey. This study identified that a six hour PMP course can improve nurses knowledge.

Authors Machira, Kariuki, and Martindale (2013) performed a study to implement and evaluate a PMP for nurses in Kenya. The study examined the pre-and post-survey provided prior to the seven hour PMP and again after the educational intervention. The 27 pre-survey results of the nurse knowledge and attitudes regarding pain showed a relatively low pre-intervention knowledge and attitude scores. Following the education, the post survey scores had a positive impact on pain knowledge and attitudes. In conclusion, the PMP was effective in improving nurses' pain knowledge and attitudes (Machira, Kariuki, & Martindale 2013).

Glowacki (2015) reports, "What a patient believes and understands about pain is critical in influencing the patient's reaction to the pain therapy provided." The Joint Commission and the World Health Organization suggested that pain management is an essential aspect of patient care. Furthermore, Glowacki (2015) points out that pain relief has been acknowledged as a basic human right by the World Health Organization, and goes on to point out that, the failure to treat pain is viewed as an unethical breach of human rights. Nurses are part of the interdisciplinary healthcare team in pain management and are fundamental to quality patient outcomes. Nurses would benefit from attending an evidence-based PMP to stay current with best practice and enhance professional development.

Jarrett, Fancher-Gonzalez, and Lofton (2012) measured knowledge and attitudes of nursing regarding pain management. A longitudinal quasi-experimental and quantitative study was done. The pre-test post-test survey was used in a group setting of 206 bedside nurses in an

acute care facility resulting in 164 final post-test participants. The mean knowledge and attitude survey regarding pain score showed a 27.67 pre-test mean and a 31.66 post-test mean. The authors administered a six-month survey resulting in a 36.47 mean. The study suggests that having more knowledge in pain management and better attitude about pain may improve patient satisfaction of pain. This study claims that pain management is often under managed. The study insists that all nurses need to enhance their knowledge regarding pain, especially in regards to pain medications that can promote comfort. The strength in this study is the claim that stronger knowledge base may lead to better pain management, improved outcomes, and higher patient satisfaction scores.

Brant, Moore, Combs, Finn, and Wilmarth, (2017) studied the knowledge and attitude of pain in nurses who work in diverse settings. There were 217 registered nurses that completed the pain knowledge and attitude survey administered to professional nurses in diverse settings. This study suggests that having more knowledge and better attitude toward pain may improve patient satisfaction of pain. The conclusion was made that pain management is often under managed and all nurses need to enhance their knowledge and attitude regarding pain. The study implies that pain management will satisfy patients and lead to higher quality and improved outcomes.

Rationale for Study

The literature review reveals that pain is a common symptom experienced in the hospital setting. The WHO suggests that pain treatment is a basic human right. Multiple evidence-based

practice approaches were implemented to enhance nurses' pain management knowledge and attitude. The evidence suggests that developing an educational pain program was known to be highly correlated with improve patient recovery, outcomes, and patient satisfaction. The implementation of an evaluation tool was a method used frequently throughout the literature to effectively measure learning following the educational intervention. Design 22 Pain management is fundamental to quality of life and good patient outcomes. The PRN program is shown to be a catalyst to improve pain management knowledge and attitude to stay current with best practice and enhance professional development.

Chapter 3

Methods

Design

This scholarly project was a quality performance improvement (QI) study. The intention of this study was to examine the effectiveness of the University of Pittsburgh Medical Center (UPMC) Pain Resource Nurse (PRN) system program on UPMC registered professional nurses' pain management knowledge and attitudes. Every RN was employed by UPMC and worked in various healthcare areas. Evidence supports that UPMC nurses would benefit from the PRN educational program. In order to improve the quality of care for patients, research suggests nurses need evidence-based practice (EBP) education focused on effective pain management knowledge and attitude (Grant, Ferrell, Hanson, Sun, & Uman, 2011). The design for this QI study began with the development of the PRN learning objectives and curriculum development in addition to choosing a valid and reliable instrument to measure learning.

The UPMC PRN program stakeholders selected the evidence-based PRN program curriculum developed by the University of Wisconsin Board of Regents (UWBR) as the pain management EBP curriculum. The data collection survey was created by the City of Hope National Medical Center. The "Knowledge and Attitudes Survey Regarding Pain" (KASRP) was developed by Ferrell and McCaffery. The July 2014 revised version was utilized. The KASRP

instrument is a valid and reliable survey with 39 questions and written permission to utilize survey was obtained (see Appendix A).

Population

The sample for this scholarly project was a convenience sample of professional Registered Nurses (RN) who are employed by UPMC. UPMC operates more than 30 academic, community, and specialty hospitals nationally and internationally. UPMC employed more than 11,000 nurses. UPMC East, a 155-bed community hospital located in the eastern suburbs of Pittsburgh, Pennsylvania was the setting for the UPMC PRN program. At the time of the study UPMC East employed 342 registered nurses and was a recognized training center for UPMC. UPMC East was the lead researcher top choice for the UPMC PRN program.

All UPMC professional nurses attending the UPMC PRN program were informed of the Carlow University International Review Board (IRB) approved QI study (see Appendix B). In addition, all were informed of the UPMC International Review Board (IRB) approved QI study (see Appendix C). The PRN program RN learners completed the KASRP survey voluntarily.

Procedures

Written consent from the UWBR was obtained to utilize any of the nine evidence-based PRN modules in part or in whole. Written consent was obtained by the author of the KASRP

valid and reliable survey instrument. IRB approval was obtained from Carlow University IRB and UPMC IRB.

The project intervention began with the approvals obtained and the team of UPMC stakeholders' approval and support to conduct the educational program. The lead researcher began the process of obtaining the educational training space and took steps to create an informational PRN flyer to advertise internally (see Appendix C).

The UPMC PRN flyer included the desired audience, the program goal, along with the training schedule listing location and times that included registration instructions. The PRN flyer provided the UPMC East education department contact number in the event of questions. The PRN flyer included the program itinerary with times, educational topics, and the names and credentials of the various UPMC presenters. The PRN flyer advertised that there would be a survey offered pre-and post-program. Upon completion, every registered nurse learner who attended the full program was presented with a seven-hour certificate of continuing education recognition.

Instrument

The instrument of the scholarly project consisted of the KASRP pre-test and post-test survey (see Appendix D.) and answer key (see Appendix E). The KASRP survey is a valid and reliable instrument that has been revised multiple times since its original 1987 version. The

KASRP is a 39-item survey frequently utilized to assess pain knowledge, skills and attitudes before and after the PRN educational program intervention to measure learning.

The 2014 revised KASRP survey contains 22 true/false questions, 15 multiple choice, and 2 case studies. The content validity has been established by pain expert review. Construct validity has been established using the comparison of scores by nurses at various levels of experience and the tool was identified as emanating between levels of experience. The content of the tool was derived from the current standards in pain management. The standards of pain management are set by the American Pain Society (APS), the World Health Organization (WHO), and the National Comprehensive Cancer Network Pain Guidelines (NCCNPG) (McCaffery & Ferrell, 2014). Test re-test reliability was established along with internal consistency reliability reflecting both knowledge and attitude domains.

The KASRP tool was identified as discriminating between levels of RN expertise. A pain expert review performed a test-and retest reliability. The KASRP tool test-retest reliability was established ($r>.80$) by repeat testing in a continuing education class of staff nurses ($n=60$). Internal consistency reliability was established (alpha $r>.70$) with items reflecting both knowledge and attitude domains (Ferrell and McCaffery, 2014).

Data Analysis Plan

Data was collected pre-and post-PRN educational intervention. The paper survey scores were entered in an Excel spreadsheet for further analysis. All RN survey results collected were anonymous. The pre-test and post-test data was analyzed using the Microsoft Excel data analysis tool to formulate the t-Test paired two sample for means. The t-Test was performed to analyze the data to determine if there was a statistical significant difference, or a p-value less than 0.05.

The 40 anonymous pre-and post-survey scores were entered by investigator into a personal computer Excel spreadsheet. The data was entered into a data analysis tool pack as variable one range and variable two range data with the purpose to analyze. The data was analyzed to reveal the mean, median, standard deviation, and matched pair t-test results. The data analysis disclosed statistical results from the 40 anonymous pain management knowledge and attitude pre-and post-survey scores entered into data analysis tool pack to measure the learning that occurred following the PRN eight hour educational intervention.

This study was a quality performance improvement (QI) study. The purpose of this study was to examine the effectiveness of the University of Pittsburgh Medical Center (UPMC) Pain Resource Nurse (PRN) system program on UPMC registered professional nurses' pain management knowledge and attitudes. Data was collected pre-and post-PRN educational intervention. The survey data was measured separately to distinguish improved pain management knowledge, improved pain management attitude, and overall complete pain

management score. A matched pair t-test was performed on the 40 anonymous pre-and post-survey scores to test if there is a statistically significant difference between the Pre-proportion correct and the Post-proportion correct.

Chapter 4

Results

Analysis of Data

The data was collected before and after the eight-hour educational session. Participants consisted of a convenience sample of 40 staff nurses who are actively employed as Registered Nurse (RN) by the University of Pittsburgh Medical Center (UPMC). The RNs attending the Pain Resource Nurse (PRN) program volunteered to complete the anonymous pre-and post-survey and attend the eight-hour educational PRN pain management program. The study was conducted to answer the following research question:

"What is the effect of a Pain Resource Nurse (PRN) program on Registered Professional Nurses' pain management knowledge and attitudes within an eight-hour time frame?"

The City of HOPE National Medical Center July 2014 revised version of the Knowledge and Attitudes Survey Regarding Pain (KASRP) was utilized to evaluate this quality improvement study. In 2017, there were 11,000 nurses employed by UPMC. A total of 41 RNs were registered and signed an attendance roster. Of the 41 RNs, a total of 40 RNs were successful in completing the PRN program and pre-and post-survey. However, one UPMC RN signed the attendance roster and completed the voluntary pre-survey left the session after two hours and did

not return. The one participant pre-survey was omitted from the data analysis which resulted in 40 pre-and post-surveys evaluated.

The UPMC PRN program is supported by stakeholders. The stakeholders are healthcare providers and administrators with an interest in improving pain management. UPMC stakeholders support the ongoing PRN educational program offered to UPMC professional RNs. The stakeholder support the plan for the PRN program to be consistent offering the same curriculum and utilizing the same data collection instrument at each PRN program.

The class curriculum was developed based on Dossey's (2008) theory of integral nursing which is a new holistic theory that provides opportunities for nurses to deliver nursing care centered on what the patient is experiencing. Treatment fidelity is implemented through the program design to ensure the PRN program is delivered as intended. This was accomplished by standardizing the PRN educational content and implementing a valid and reliable pre-and post-survey instrument to measure learning. Evidence-based modules that are used throughout the PRN program give the trained providers' confidence that the learning intervention that is being utilized has integrity and is credible.

The PRN program was delivered by trained providers who met quarterly to review content and discuss program activities and survey results. The RNs that attended the program were provided with an itinerary of the class content. The delivery of the PRN content was taught by content experts. The knowledge improvement was measured by the survey administered at

the end of the PRN program. The enactment was determined by the data that measures knowledge and attitude change following the eight hour educational session. To maintain a consistent and accurate delivery of the PRN program an itinerary that allots a specific amount of time for each module's content was required to allow sufficient time to meet the learning objectives. Learning objectives were developed to eliminate as much bias as possible. The PRN program used the survey instrument as an objective method to assess knowledge skills and attitude of the registered nurse learner in attendance.

Forty anonymous pre- and post-Knowledge and Attitudes Survey Regarding Pain (KASRP) were analyzed in the eight-hour PRN educational program.

A matched pair t-test was performed on the data pre-and post-survey scores to test if there was a statistically significant difference between the pre-proportion correct and the post-proportion correct (see Table 1).

Table 1

40 Registered Nurse Mean Performance Scores Pre and Post PRN Intervention

	N	Mean difference (post-pre)	Standard deviation	t test statistic	p-value	95% CI mean difference
Knowledge	40	0.145	0.22	4.11	0.0002*	0.07, 0.22
Attitude	40	0.07	0.12	3.59	0.0009*	0.03, 0.11
Total	40	0.18	0.10	11.76	<0.0001*	0.15, 0.21

* There is a statistically significant difference in proportion correct.

Nurses' Knowledge.

The RNs' knowledge related to pain management was analyzed and results presented in Table 1 show a statistically significant difference in proportion of knowledge p-value.

Nurses' Attitude.

The RNs' attitudes related to pain management was analyzed and results presented in Table 1 show a statistically significant difference in proportion of attitude p-value.

Pre-and Post-Data Overall Analysis.

Data was collected before and after the PRN educational intervention. The pre-survey and post-survey data was analyzed to formulate the t-Test paired two sample for means. The t-test was performed to analyze the data to determine statistical significance related to pain management knowledge, attitude, and overall learning following the PRN program. The results shown in Table 1 determined that the studies p-value indicated a statistical significant difference.

The total sample size n=40 pre- and post-survey scores were evaluated by the data analysis tool pack, variable one range and variable two range, with the purpose to analyze mean, median, standard deviation, and t-test. This analysis provided supportive evidence that the pain management knowledge and attitude was significantly improved for participants as a result of the PRN educational intervention.

Further data analysis relates to the top five most improved knowledge and attitude questions on the KASRP survey before and after the educational intervention. Refer to Table 2, which demonstrates the percent improved in the UPMC RNs' pain management knowledge and attitude.

Table 2

Most Improved Top Five Knowledge & Attitude Questions on the KASRP

Knowledge Survey Questions Most Improved N= # correct / total 40	Pre-survey N (%)	Post-survey N (%)	% Improved
28 A patient with persistent cancer pain has been receiving daily opioid analgesics for two months. Yesterday the patient was receiving morphine 200 mg per our intravenously. Today he has been receiving 250 mg per hour intravenously. The likelihood of the patient developing clinical significant respiratory depression in the absence of new comorbidity is less than 1%.	10(25)	33(83)	58%
36 Following abrupt discontinuation of an opioid, physical dependence is manifested by the following: sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.	15(38)	34(60)	22%
33 How likely is it that patients' who develop pain already have an alcohol and/or drug abuse problem (5-15%).	18(45)	37(93)	48%
6 Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months (true).	15(38)	33(83)	45%

37 Which statement is true regarding opioid induced respiratory depression: obstructive sleep apnea is an important risk factor.	20(50)	38(95)	45%
Attitude Survey Questions Most Improved N= # correct / total 40	Pre-survey N (%)	Post-survey N (%)	% Improved
9 Opioids should not be used in patients with a history of substance abuse (false).	27(68)	38(95)	27%
3 Patients who can be distracted from pain usually do not have severe pain (false).	35(88)	38(95)	7%
4 Patients may sleep in spite of severe pain (true).	37(93)	40(100)	7%
32 Which of the following describes the best approach for cultural considerations in caring for patients in pain: patient should be individually assessed to determine cultural influences.	37(93)	40(100)	7%
11 Patients should be encouraged to endure as much pain as possible before using an opioid (false).	38(95)	40(100)	5%

The KASRP survey questions focus on the care providers' pain management knowledge and attitude. The lead researcher recognized the presenting trend in the survey results identifing the top five most improved pain management knowledge and attitude survey questions requiring further education. A trend emerged in that data.

This study also revealed the knowledge survey questions most improved from pre-survey data were pharmocological-based questions. Results showed a 58 percent learner knowledge improvement in critical thinking ability to identify the likelihood for possible respiratory

depressive effects resulting from intravenous opioid analgesics. Results showed a 22 percent learner knowledge improvement in physical symptoms that may occur due to the abrubt cessation of opioid use. Results showed a 48 percent knowledge improvement in the likelihood that patients who develop pain already have a substance use disorder. Results showed a 45 percent knowledge improvement in the effects of opioid dosing. Lastly, results showed 45 percent knowledge improvement in knowing that obstructive sleep apnea is an important risk factors of opioid-induced respiratory depression.

This study revealed the attitude survey questions most improved from pre-survey results. Results showed 27 percent attitude improvement in the RN learners misconception that a patient should not be given opioids when there is a history of substance abuse. Results showed 7 percent attitude improvement in the incorrect viewpoint that patients distracted from pain are not in severe pain. Results showed 7 percent attitude improvement in the RN learners' correct perspective that patient may sleep in spite of severe pain. Results showed 7 percent attitude improvement in the correct outlook that patients should be assessed to determine cultural influences regarding pain. Lastly, results showed a 5 percent attitude improvement in the incorrect perspective that patients should endure as much pain as possible before using an opioid for pain management.

The KASRP survey questions focused on the care providers' pain management knowledge and attitude. The survey results showed the most improved top five knowledge and

attitude questions and was successful in identifing an emerging trend in the survey results requiring further education. In the knowledge and attitude domains combined there were 7 most improved opioid pain management related questions. These seven opioid pain management related questions resulted in lower learner pre-survey scores then following the PRN eight-hour educational intervention; the post-survey trending suggests a need for further education related to opioid pain management. The lead researcher attributes the improved knowledge and attitude results to increased focus placed on knowledge-centered learning objectives and an increased awareness on learners' pain management attitude included in the educational content.

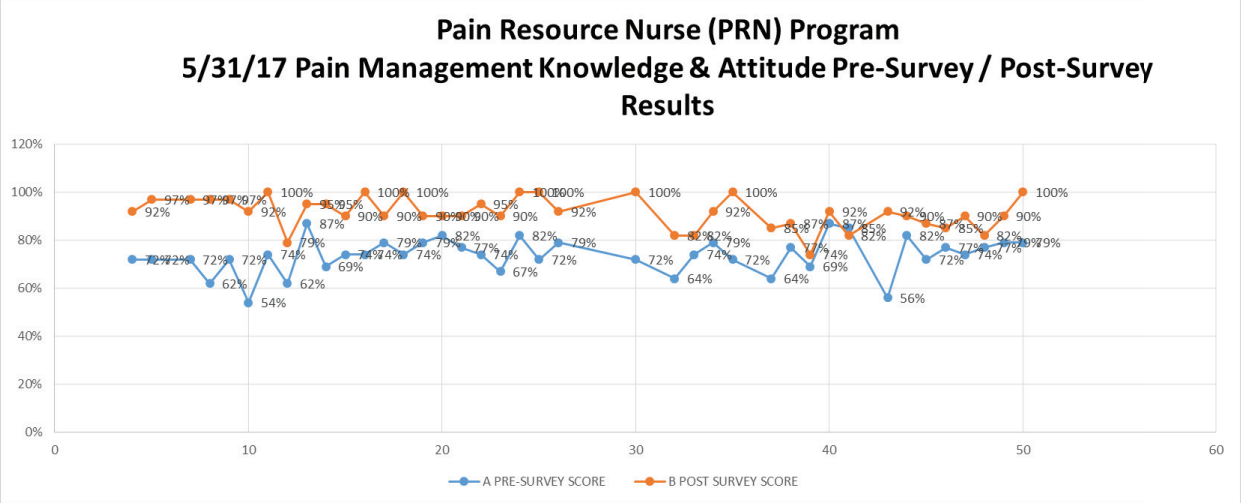
In summary, the most improved top five knowledge and attitude questions on the KASRP revealed improved scores in each of the top five knowledge and attitude survey questions (see Table 2). The lead researcher specifically identified the emerged trend in the learners' opioid pain management knowledge and attitude scoring initially low and improving the most. Opioid pain management is an area for ongoing education.

Pre- and Post-Survey Results.

The PRN May 31, 2017 pre-survey and post-survey program data is plotted out in scatter diagram with straight lines and markers for a visual demonstration of the data (see Figure 1).

Figure 1

Pain Resource Nurse Pain Management Knowledge and Attitude Survey Results



Summary of Findings

The effect of a PRN program educates nurses to improve the quality of patient care by increasing nursing pain management knowledge and attitude.

The study findings confirm concerns that there is a gap in nursing pain management knowledge and attitude prohibiting effective pain management. The study outcomes support that there is a deficit in knowledge and attitude related to opioid pharmacological pain management seen in 7 out of 10 most improved trending survey questions displayed in Table 1.

The results of the data show that the PRN program had a statistically significant effect on UPMC Registered Professional Nurses' pain management knowledge and attitudes upon completion of the eight-hour educational intervention.

The survey questions that focused on RN pain management knowledge show that the PRN program had a statistically significant outcome. The survey questions that focused on attitude in pain management identified that the PRN program had a statistically significant outcome. Overall, the KASRP survey questions show that the PRN program had a statistically significant outcome.

The most significant knowledge and attitude improvement the lead researcher identified was an emerging trend seen in knowledge and attitude of opioid pain management. The trend emerged in the learners' survey scores with pre-survey scores initially low then following educational intervention demonstrated the greatest improvement.

Chapter Five

Discussion and Conclusions

Discussion and Findings

Pain is a common symptom among patients in the acute care setting. Effective pain management is a clinical priority in healthcare and is often described as problematic. The professional registered nurse is a key patient advocate for pain management. An essential part of the RN role is practicing using the current clinical evidence and embracing learning in the ever changing healthcare landscape. RNs are required to complete 30 continued education hours for RN re-licensure and are aware of the professional rigor that is needed throughout a nursing career to stay current with best practice. This study will assess the effect of an educational UPMC Pain Resource Nurse (PRN) program.

The study began by asking the research question, "What is the effect of a Pain Resource Nurse (PRN) program on registered professional nurses' pain management knowledge and attitude, within an eight-hour time frame? The next step was to research options to deliver a robust educational pain management program and select a tool to measure the learning of the educational intervention. The UPMC PRN program stakeholders selected the evidence-based PRN program curriculum developed by the University of Wisconsin Board of Regents (UWBR) as the pain management EBP curriculum.

The Knowledge and Attitudes Survey Regarding Pain (KASRP) pre-and post-survey instrument was chosen for this study. The KASRP was developed in 1987 and has been used extensively and repeatedly revised to reflect the changes in pain management practice since 1987. This study utilized the July 2014 KASRP version to measure RNs' learning that occurred as a result of the UPMC PRN educational program. The survey questions measured the pain knowledge and attitude related to pain assessment, pain management, spiritual and personal beliefs, substance use and abuse, and pharmacological considerations. The KASRP survey provided the investigator data to identify the program's effect on learning. The survey aided in identifying future pain management curriculum development for RN continued education. Measuring learning is critical as it allows for future educational programs and facilitates continuous program improvement. UPMC nurses would benefit from an evidence-based PRN program that utilizes a valid and reliable survey tool which then analyzes the data.

The UPMC PRN program and KASRP can impact evidence-based practice and is in alignment with The Iowa Model of Evidence-Based Practice (Doody & Doody, 2011) to promote quality care with a focus on quality pain management. The PRN program prepares RNs with knowledge to function from an evidence-based perspective effectively impacting pain management when making clinical decisions regarding daily care and nursing practices that influence patient outcomes.

The UPMC stakeholders agreed to move forward with an eight-hour Evidence-Based Practice (EBP) PRN program in combination with the implementation of a valid and reliable pre-knowledge and attitude survey and post- knowledge and attitude survey.

The survey data was collected and analyzed following the May 31, 2017 eight-hour PRN program. The study findings showed there is an overall statistically significant difference between the pre-proportion correct and the post-proportion correct. The RNs' knowledge related to pain management showed a statistically significant difference in proportion correct. The RNs' attitude related to pain management showed a statistically significant difference in proportion correct.

In summary, the study findings attested to the stakeholders and investigator that there is supportive numerical evidence that the RNs in attendance showed improvement in pain management knowledge and attitude as a result of the eight-hour PRN educational intervention showing a statistically significant difference in proportion correct.

The findings in the mean data scores showed the actual overall knowledge of pain management prior to the PRN program. The mean data scores showed the actual difference of post minus pre-PRN program. The overall mean scores in this study suggest there is a RN knowledge gap most prevalent in overall pain management identified by improvement in both knowledge and attitude questions on the KASRP survey. The deficit in pain management knowledge measured in the pre-survey was seen in questions related to intravenous

pharmacological understanding in pain management, substance use and opioid dependence, and pain management and alcohol and drug abuse related questions. The deficit seen in pain management attitude questions was measured in the pre-survey related to opioid and the RNs' attitude related to pain interpretation.

Following the eight-hour educational intervention the pain management knowledge and attitude survey data indicated more favorable results reflected in post-survey scores. The post-survey scores indicated RNs' who participated in the PRN education scored higher overall indicating improved knowledge and attitude associated to the learning that occurred as a result of the intervention.

Due to the data analysis results the real value is the change in RN knowledge and attitude shown in the pain management knowledge and attitude survey scores completed by the forty RNs that attended. The data supports that significant learning occurred overall in the areas of intravenous pharmacological pain management, opioid use, opioid dependence, alcohol and drug abuse, and attitude related to pain interpretation. The PRN program was effective and had a impact on the RNs overall knowledge by educating current standards of pain management to RNs' presenting with various levels of expertise and improving on both pain management knowledge and attitude.

This PRN program is a Quality Improvement (QI) project that was designed to develop the nurses' pain management abilities, and empower nurses with pain management knowledge to

better collaborate with the healthcare team and partner with patients and families to facilitate pain management plans focused on improving the quality of patient care at UPMC. Clinical significance was as important in guiding practice as statistical significance is in evaluating research (AACN DNP Task Force, 2015). It is imperative that RNs are provided clinical education on pain management and pain related issues to improve patient care and patient outcomes.

Limitations

The limitations identified in this study are as follows:

1. This study was a convenience sample and limited in findings to the forty RNs who completed the May 31, 2017 PRN program.
2. This study was limited in use of technology to collect and measure data. Currently the PRN program uses paper and pencil surveys and lead researcher analyzes and enters the data manually into spread sheet.
3. This study design was limited in identifying current barriers that impact nurses' ability to effectively manage pain in the clinical setting.
4. This study was limited in providing nursing effective coping skills when interacting with negative patient reactions experiencing pain.
5. This study was limited in exploring patient care barriers related to stigma and marginalization.

Implications

Data analysis revealed that providing an EBP PRN program can significantly increase UPMC professional RNs' pain management knowledge and attitude. Findings in the pre-survey mean scores suggest there is a deficit in RN pain management knowledge and attitude.

Recommendations for Practice and Further Study

Continue to create awareness of the ever present deficit in pain management knowledge and attitude. Educate pain management by providing PRN programs quarterly to all UPMC registered nurses. Take steps to expand upon pain management education offered during nursing orientation by incorporating case studies focused on current pain management scenarios. Increase nursing education in pharmacological and non-pharmacological pain modalities available to patients. Improve the pain management module used in the nurse residency program. Continue to offer scholarly journal club articles focusing on pain management and improving knowledge and attitudes of RNs.

Develop a Pain Management Center of Excellence.

The first recommendation for practice is to develop a pain management center of excellence designed to educate bedside nurses in the various modalities of effective pain management focused on improving patient care, enhancing patient experience, and improving patient outcomes. In addition, the pain management evidence-based practice PRN modules were

published in 2008. Lead researcher recommends developing curriculum that is based on the most current best practices in pain management.

Managing Ongoing Data Collection Utilizing a Valid and Reliable Instrument.

To continue to build upon a data collection sample by administering surveys to each PRN program learner. A valid and reliable survey should be used at each UPMC PRN program offered. The current survey has a total of 39 questions and may take a learner 40 minutes to complete. Survey completion time occurs at the beginning and at the end of the eight-hour day and takes teaching time away from the core content.

For further research it may be beneficial to leverage technology using an electronic survey delivery method to continue to build upon sample size. Larger sample size may identify trends and gaps in pain management knowledge and attitude learning needs of RNs.

Recommendation for future study include researching best practices that deliver the most effective individualized pain management strategies that translate pain management research into practice. Future studies are needed to explore barriers to effective pain management that impact nurses' ability to effectively manage pain in the clinical setting.

Improve the Interdisciplinary Healthcare Team Involvement in Pain Management Plan.

In addition, recommendations for future PRN programs would be focused on areas for improvement by defining quality improvement plans involving the interdisciplinary healthcare team increasing nursing collaboration of care with nursing healthcare providers specializing in oncology, palliative, anesthesia, surgical services, and pharmacy.

Create Awareness of Marginalization and Stigma in Pain Management.

Furthermore, future PRN programs would benefit from education on diminishing healthcare provider negative attitudes toward pain symptoms, improving nursing coping skills with patient reported pain, and enhance nursing's attitude awareness regarding pain patient stigma and marginalization.

Answering the Research Question.

In conclusion, recognizing that pain is a common symptom among acute care patients, professional nurses identify pain management as a clinical priority. The study answered the research question, "What is the effect of a Pain Resource Nurse (PRN) program on registered professional nurses' pain management knowledge and attitude, within an eight-hour time frame? The study findings attested to the stakeholders and investigator that there is supportive numerical evidence that the RNs in attendance showed improvement in pain management knowledge and attitude as a result of the eight-hour PRN educational intervention showing a statistically significant difference in proportion correct.

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Appendix A

CARLOW UNIVERSITY INSTITUTIONAL REVIEW BOARD

To: Dawn Klejka

CC: IRB Committee

From: Ann Spence, DNP, RN

Co-Chair, Carlow IRB

Date: May 19, 2017

Re: IRB # 2016-164-G-X

Improving Nurse Pain Management Knowledge

The above project was reviewed and approved by the Co-Chair of Carlow's Institutional Review Board. The project is approved for a period of up to one year.

Approval Date: May 19, 2017

Expiration Date: May 19, 2018

If any untoward incidents or unanticipated adverse reactions should develop in the course of your research with human subjects, you must notify the Institutional Review Board Office at 578-6349 immediately.

Appendix B

UPMC QUALITY IMPROVEMENT REVIEW COMMITTEE

From: UPMC Quality Improvement Project Submission

Date: March 31, 2017 at 2:12:26 PM EDT

To: Klejka, Dawn klejkade@upmc.edu, Flemming, Tammy P. flemmingtp@upmc.edu

Project Sponsor,

The Quality Improvement Review Committee is pleased to inform you that your QI project has been approved.

We have also notified your local quality department of this approval and encourage you to share updates on the project's progress.

Project Title: Improving the UPMC Pain Resource Nurse (PRN) Program

Project ID: 981

Sponsor: Klejka, Dawn

Thank you for submitting this to us for our review.

J. Jegasothy, MD

Sr. Medical Advisor UPMC Quality & Research

Appendix C

UPMC
LIFE CHANGING MEDICINE

UPMC Pain Resource Nurse (PRN) Program

Audience: This UPMC Pain Resource Nurse (PRN) Program is designed for UPMC nurses.

Goal: This Pain Resource Nurse (PRN) Program enhances the UPMC nurse's pain management knowledge, attitude, and skills. The PRN program is designed to support safe, effective, patient-centered, and compassionate care.

Upcoming Trainings
All courses are held in Conference Room B/C at UPMC East, 2775 Mosside Boulevard, Monroeville, PA 15146.

All sessions will be held 8 a.m. to 4:30 p.m.

- Wednesday, May 31, 2017
  - > uLearn Class Code: ELM-1531-9
- Wednesday, September 27, 2017
  - > uLearn Class Code: ELM-1531-10
- Friday, December 8, 2017
  - > uLearn Class Code: ELM-1531-11

Participants will receive 7 hours of Continued Education (CE) upon completion.

How to Register in uLearn

1. Log in to your My HUB Account.
2. Click on Access the uLearn link on the right hand bottom portion of page.
3. Click on Find Learning.
4. Click on Advanced Search.
5. Type the first five characters of Course Code with dash (example ELM-1531) then Search
6. Click ENROLL NOW next to the correct class date.

Questions? Contact the UPMC East Education Department at **(412) 357-3092**.

Continued

UPMC
LIFE CHANGING MEDICINE

Itinerary

8 to 8:15 a.m. . . . . . *Welcome/Disclosure Statement*

8:15 to 8:45 a.m. . . . . *Pre-Knowledge and Attitudes Survey Regarding Pain*
Dawn Klejka, MSN, RN

8:45 to 9 a.m. . . . . . *UPMC Chronic Pain Service*
Jennifer Letzelter, CRNP

9 to 9:30 a.m. . . . . . *Overview of Pain Types and Prevalence*
Tammy Flemming, CRNP

9:30 to 10 a.m. . . . . . *Assessment of Pain*
Tammy Flemming, CRNP

10 to 10:10 a.m. . . . . *Break*

10:10 to 11:10 a.m. . . . *Pain Management: Pharmacological*
Tammy Flemming, CRNP

11:10 to 11:40 a.m. . . . *Pain Management: Non-Pharmacological*
Dawn Klejka, MSN, RN

11:40 a.m to Noon . . . *Pain Management: Delivery Systems*
Tammy Flemming, CRNP

Noon to 12:45 p.m. . . *Lunch*

12:50 to 1:20 p.m. . . . *Oncology & Pain Management*
Donna Durant, CRNP

1:20 to 1:50 p.m. . . . *Palliative Care & Pain Management*
Donna Durant, CRNP

1:50 to 2:20 p.m. . . . *Principles of Acute and Chronic Non Cancer Pain Management*
Tammy Flemming, CRNP

2:20 to 2:30 p.m. . . . *Break*

2:30 to 3 p.m. . . . . . *PRN Nurse Role Implementation*
Lois Pizzi, MSN, ACNS-BC, RN-BC

3 to 3:30 p.m. . . . . . *Principles of Pain Management in Patients with Substance Abuse*
Tammy Flemming, CRNP

3:30 to 4 p.m. . . . . . *Testimonials: Substance Use Disorder Patients and Pain*
Dana Grant, senior peer specialist

4 to 4:30 p.m. . . . . *Post-Knowledge and Attitudes Survey Regarding Pain*
Dawn Klejka, MSN, RN

Program Evaluation/Continued Education (CE) Recognition Certificate

Appendix D

Knowledge and Attitudes Survey Regarding Pain

True/False – Circle the correct answer.

T F 1. Vital signs are always reliable indicators of the intensity of a patient's pain.

T F 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.

T F 3. Patients who can be distracted from pain usually do not have severe pain.

T F 4. Patients may sleep in spite of severe pain.

T F 5. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.

T F 6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.

T F 7. Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.

T F 8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.

T F 9. Opioids should not be used in patients with a history of substance abuse.

T F 10. Elderly patients cannot tolerate opioids for pain relief.

T F 11. Patients should be encouraged to endure as much pain as possible before using an opioid.

T F 12. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.

T F 13. Patients' spiritual beliefs may lead them to think pain and suffering are necessary.

T F 14. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

T F 15. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T F 16. Vicodin (hydrocodone 5 mg + acetaminophen 300 mg) PO is approximately equal to 5-10 mg of morphine PO.

T F 17. If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.

T F 18. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.

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T F 20. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

T F 21. The term ‘equianalgesia’ means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.

T F 22. Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression.

Multiple Choice – Place a check by the correct answer.

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is

a. intravenous

b. intramuscular

c. subcutaneous

d. oral

e. rectal

24. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is

a. intravenous

b. intramuscular

c. subcutaneous

d. oral

e. rectal

25. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged
moderate to severe pain for cancer patients?

a. codeine

b. morphine

c. meperidine

d. tramadol

26. A 30 mg dose of oral morphine is approximately equivalent to:

a. Morphine 5 mg IV

b. Morphine 10 mg IV

c. Morphine 30 mg IV

d. Morphine 60 mg IV

27. Analgesics for post-operative pain should initially be given

a. around the clock on a fixed schedule

b. only when the patient asks for the medication

c. only when the nurse determines that the patient has moderate or greater discomfort

28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is

a. less than 1%

b. 1-10%

c. 11-20%

d. 21-40%

e. > 41%

29. The most likely reason a patient with pain would request increased doses of pain medication is

a. The patient is experiencing increased pain.

b. The patient is experiencing increased anxiety or depression.

c. The patient is requesting more staff attention.

d. The patient's requests are related to addiction.

30. Which of the following is useful for treatment of cancer pain?

a. Ibuprofen (Motrin)

b. Hydromorphone (Dilaudid)

c. Gabapentin (Neurontin)

d. All of the above

31. The most accurate judge of the intensity of the patient's pain is

a. the treating physician

b. the patient's primary nurse

c. the patient

d. the pharmacist

e. the patient's spouse or family

32. Which of the following describes the best approach for cultural considerations in caring for patients in pain:

a. There are no longer cultural influences in the U.S. due to the diversity of the population.

b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).

c. Patients should be individually assessed to determine cultural influences.

d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).

33. How likely is it that a patient who develops pain already has an alcohol and/or drug abuse problem?

< 1% 5 – 15% 25 - 50% 75 - 100%

34. The time to peak effect for morphine given IV is

_____a. 15 min.

_____b. 45 min.

_____c. 1 hour

_____d. 2 hours

35. The time to peak effect for morphine given orally is

_____a. 5 min.

_____b. 30 min.

_____c. 1 – 2 hours

_____d. 3 hours

36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:

_____ a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.

_____ b. Impaired control over drug use, compulsive use, and craving.

_____ c. The need for higher doses to achieve the same effect.

_____ d. a and b

37. Which statement is true regarding opioid induced respiratory depression?

_____ a. More common several nights after surgery due to accumulation of opioid.

_____ b. Obstructive sleep apnea is an important risk factor.

_____ c. Occurs more frequently in those already on higher doses of opioids before surgery.

_____ d. Can be easily assessed using intermittent pulse oximetry.

Case Studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication.

Directions: Please select one answer for each question.

38. Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain.

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort Worst Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time.

1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.

39. Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information:

BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain:

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No pain/discomfort Worst Pain/discomfort

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Appendix E

Knowledge and Attitudes Survey Regarding Pain - Answer Key

True/False – Circle the correct answer.

F 1. Vital signs are always reliable indicators of the intensity of a patient's pain.

F 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.

F 3. Patients who can be distracted from pain usually do not have severe pain.

T 4. Patients may sleep in spite of severe pain.

F 5. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.

T 6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.

T 7. Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.

F 8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.

F 9. Opioids should not be used in patients with a history of substance abuse.

F 10. Elderly patients cannot tolerate opioids for pain relief.

F 11. Patients should be encouraged to endure as much pain as possible before using an opioid.

F 12. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.

T 13. Patient's spiritual beliefs may lead them to think pain and suffering are necessary.

T 14. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

F 15. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T 16. Vicodin (hydrocodone 5 mg + acetaminophen 300 mg) PO is approximately equal to 5 - 10 mg of morphine PO.

F 17. If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.

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7/14

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