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Nursing Knowledge and Attitudes toward Pain Management

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Nursing Knowledge and Attitudes toward Pain Management

by

Joycelyn A. Craig

A thesis submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

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Abstract

In many clinical settings, nurses have a vital role in pain assessment and titration of opioid doses. Surveys of nurses have revealed knowledge deficits in these areas that are thought to contribute to under-treatment of pain. The present study surveys nurses' knowledge and attitudes about assessment and treatment of pain and confirms that nurses continue to undertreat pain. As shown in previous studies, nurses may be more influenced by the patient's behavior than the patient's self-report of pain, especially in relation to decisions about opioid administration. Nurses are less likely to manage a previously safe but ineffective dose of opioid for a smiling patient than a grimacing patient. Survey results reveal a tendency for nurses' personal opinions and lack of understanding about the patients' pain, rather than their assessments, to influence choice of opioid dose and to contribute to insufficiency of managing pain. A quantitative study was used. Postoperative nurses (n = 384) were recruited from a large academic medical center. Data was collected on nurses' knowledge of pain management using the Nurses' Knowledge and Attitudes Survey, on perceived barriers to pain. The overall average correct response rate for the knowledge scale was 72.2%, indicating poor knowledge of pain management. Knowledge of pain management was significantly and negatively related to perceived barriers to pain management. Knowledge of pain was not correlated by nurses' education level or years of experience. The results indicated a need to strengthen pain education. Pain education should target knowledge deficits and barriers to changing pain management approaches for all nurses.

Keywords: pain management, nurses' knowledge, postoperative pain

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Thanks to my church family and friends who prayed me through these two years. The prayers of the righteous availeth much! - James 5:16

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Lastly, I want to say to my dad - If you could see me now, I know you would be so proud. I did it! *FINALLY!!!* I love you!

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TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

Problem Statement	1
Significance.....	1
Purpose.....	2
Conceptual Framework.....	2
Research Question	6
Definition of Terms.....	6
Summary.....	7

CHAPTER II: RESEARCH BASED EVIDENCE

Review of Literature	8
Theoretical Literature Review	20
Strengths, Weaknesses, Gaps, and Limitations	22
Summary.....	24

CHAPTER III: METHODOLOGY

Design	25
Setting.....	25
Sample.....	26
Methods.....	26
Protection of Human Subjects	27
Instrument	27
Data Collection	29
Data Analysis	29

CHAPTER IV: RESULTS

Demographics	31
Primary Analyses	36

CHAPTER V: DISCUSSION

Implication of Findings.....	42
Application to Theoretical/Conceptual Framework.....	43
Limitations	44
Recommendations.....	46
Conclusion	47

REFERENCES	49
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APPENDICIES

A: Nurses' Knowledge and Attitudes Survey Regarding Pain	54
B: Demographic Graphic Form	62
C: Consent Form.....	63

List of Tables

Table 1: Frequencies and Percentages for Categorical Demographic Variables	32
Table 2: Means and Standard Deviations for Continuous Demographic Variables	33
Table 3: Pearson's Product-Moment Correlation for Age with Experience	33
Table 4: Means and Standard Deviations for Age by Education and Unit	34
Table 5: Means and Standard Deviation for Experience by Education and Unit	35
Table 6: Frequencies and Percentages for Q1S to Q37BS	37
Table 7: Means and Standard Deviations for Score and Percentage	40
Table 8: Means and Standard Deviations for Percentage	41

CHAPTER I

Introduction

Problem Statement

Pain is the main symptom that leads people to seek health care. Many disciplines are involved in pain management; however, nurses play a pivotal role in the assessment, relief, and evaluation of pain. Surgical patients experience moderate to severe acute pain related to trauma or recent surgery, which reduces their comfort level. If ineffectively managed, acute pain can lead to negative physiological and psychological ramifications including the development of chronic pain syndromes (Kehlet, Jensen, & Woolf, 2006). Optimal pain relief is reliant on nurses' knowledge and understanding; systematic and consistent assessment; and regular documentation of pain (Francis & Fitzpatrick, 2013).

Clinician-related barriers, including knowledge deficits regarding pain assessment and management principles, failure to assess and acknowledge the existence of pain, personal and cultural bias, and communication difficulties between the patient and the health-care team, contribute considerably to suboptimal pain management among critically ill patients (Pasero, 2009). This study was designed to get insight on nurses' knowledge and attitudes related to pain of postsurgical patients.

Significance

Despite advances in technology and medications, unrelieved postoperative pain continues to be problematic for surgical patients. Statistics indicate that about 43 million patients in the United States experience acute postoperative pain, with pain intensities of moderate to severe reported by 80% of these patients. Additionally, about 50% of postoperative patients report unrelieved pain (Centers for Disease Control and

Prevention, 2013). The assessment and management of acute postoperative pain is important in the care of postoperative surgical patients. Management of postoperative pain relieves suffering and leads to earlier mobilization, shortened hospital stay, reduced hospital costs, and increased patient satisfaction. Inadequate relief of postoperative pain can contribute to postoperative complications such as atelectasis, deep vein thrombosis, and delayed wound healing (Francis & Fitzpatrick, 2013). Nurses who care for surgical patients in postoperative settings must recognize the need for adequate pain management and look at the latest data and concepts in how to best manage postoperative pain (D'Arcy, 2011).

Purpose

The role of the nurse is pivotal in the assessment and management of postoperative pain. Nurses need to understand the pathophysiology of pain and recognize that pain management is vital in the recovery of postoperative patients. Pain assessment and reassessment are components of the nurse's role that are significant in pain management. Therefore, the purpose of this study was to determine nurses' knowledge and attitudes regarding postoperative pain.

Conceptual Framework

Kolcaba's Theory of Comfort served as the conceptual framework for this study. This framework is applicable to this area of nursing because patient comfort is cited as a goal in its standards of care and is an established value for many nurses (Kolcaba & Wilson, 2002). The specialized definition of comfort, developed from reviews of multidisciplinary literature on comfort and nursing literature on holism, is "the state of being strengthened by having needs for relief, ease, and transcendence met in four

contexts of experience (physical, psychospiritual, sociocultural, and environmental)” (Kolcaba, 1992, p. 1). Kolcaba’s major concepts include health care needs, intervening variables, comfort, enhanced comfort, institutional integrity, best policies, and best practices.

Comfort Theory is a nursing theory developed in the 1990s by Katharine Kolcaba. In Comfort Theory, human needs are addressed. Kolcaba described comfort as existing in three characteristics: relief, ease, and transcendence. Also, Kolcaba described four contexts in which patient comfort can occur: physical, psychospiritual, environmental, and sociocultural (Kolcaba, Tilton, & Drouin, 2006).

Relief is the state of having a severe discomfort mitigated or alleviated, ease is the absence of specific discomforts, and transcendence is the ability to overcome discomforts when they cannot be eradicated or avoided (Kolcaba & Wilson, 2002). Nurses assess the holistic (physical, psychospiritual, sociocultural, and environmental) comfort needs of patients in all settings. Furthermore, nurses are able to implement a variety of interventions to meet those needs and measure or assess patients’ comfort levels before and after interventions. This part of comfort theory also describes positive and negative intervening patient variables over which the nurse has little control, but that have considerable impact on the success of comfort interventions.

Kolcaba’s Taxonomic Structure of Comfort

- 1) Physical context pertains to bodily sensations and homeostasis, for example, pain relief or turning and repositioning (Kolcaba et al., 2006).
- 2) The psychospiritual context relates to having an internal awareness of self, esteem, sexuality, and gives meaning in one’s life, for example,

enhancing independence and accommodating religious practices (Kolcaba et al., 2006).

- 3) Environmental is the external background of human experience, for example, temperature, noise, and views from the window (Kolcaba et al., 2006).
- 4) The concept of sociocultural connects interpersonal, family, and societal relationships, family traditions and rituals; for instance, caring attitudes, continuity of care, information and education, enhancing family and friend support, and cultural customs (Kolcaba et al., 2006).

Major Concepts and Definitions used in Conceptual Framework

- Healthcare needs are those identified by the patient/family in a particular practice setting ("Katharine Kolcaba Theoretical Model," n.d., para. 1).
- Comforting interventions are nursing interventions that are designed to address specific comfort needs of recipients. This includes physiological, social, financial, psychological, spiritual, environmental, and physical interventions ("Katharine Kolcaba Theoretical Model," n.d., para. 1).
- Intervening variables are interacting forces that influence recipients' perceptions of total comfort. This includes factors such as past experiences, age, attitude, emotional state, support system, prognosis, and finances ("Katharine Kolcaba Theoretical Model," n.d., para. 1).
- Enhanced comfort is an immediate desirable outcome of nursing care, according to Comfort Theory. When comfort interventions are delivered consistently over time, they are theoretically correlated a trend toward

increased comfort levels over time, and with desired health seeking behaviors (HSBs) ("Katharine Kolcaba Theoretical Model," n.d., para. 1).

- Health-Seeking Behaviors (HSBs): The concept of HSBs was first introduced by Scholtfeldt (1975) ("Katharine Kolcaba Theoretical Model," n.d., para. 1).
 - Internal: healing, immune function, white blood cell count, etc.
 - External: health related activities, functional outcomes
 - Peaceful Death
- Institutional Integrity is defined as the values, financial stability, and wholeness of health care organizations at local, regional, state, and national levels ("Katharine Kolcaba Theoretical Model," n.d., para. 1).
 - Best practices are those protocols and procedures developed by an institution for specific patient/family applications after collecting evidence.
 - Best policies are protocols and practices developed by an institution for overall use after collecting evidence.

Kolcaba's Comfort Theory is applicable to many populations including Alzheimer's, hospice, postanesthesia nursing, women and childbirth, pediatrics, and ambulatory care. Comfort Theory states enhanced comfort strengthens patients to consciously or subconsciously engage in behaviors that move them toward a state of well-being. These behaviors are called health-seeking behaviors and provide rationale for implementing comfort interventions.

Ultimately, Comfort Theory involves the process of comforting actions performed by a nurse for a patient. According to this theory, patients experience comfort needs in stressful health care situations. Patients and their families meet some needs but other needs remain unmet. These needs can be identified by a nurse who then implements comfort measures to meet the needs. Enhanced comfort readies the patient for subsequent healthy behaviors. Comforting measures can provide pain relief, help ease distress or help support the patient to go through the experience or condition.

Research Questions

The following question is addressed in this study:

- What is the nurse's knowledge and attitude regarding pain?

Definition of Terms

Post-surgical/ postoperative pain has been described as a complex response to tissue trauma during surgery that stimulates an aversion of the central nervous system. Management of post-surgical pain is a basic patient right (Kehlet et al., 2006).

Attitudes are unconscious motivations for actions and reaction in life that either be reinforced or altered by experience (Francis & Fitzpatrick, 2013).

Merriam-Webster online dictionary (2014) has described comfort in several ways: (1) to cause someone to feel less worried, upset, frightened; (2) to give comfort to someone; (3) to ease the grief or trouble of; (4) to give strength and hope to; (5) a state or situation in which you are relaxed and do not have any physically unpleasant feelings caused by pain, heat, cold, etcetera; and (6) a state or feeling of being less worried, upset, frightened; during a time of trouble or emotional pain. From the definitions above, comfort ranges from positive (giving strength and hope) to negative (not to have any

unpleasant feelings) and can be used as a noun, verb, adverb, or adjective. By the multiplicity of these definitions, it can be seen that comfort is a holistic, interchangeable term.

Summary

Postoperative pain management can be effective if well planned, delivered in a consistent, evidence-based manner and based on patients' assessment of their own pain whenever possible. There are many factors that cause postoperative pain which means that no two patients, even if they are having the same operation, will experience the same pain and nurses need to be aware of this. Pain can be considered as the fifth vital sign and protocols, team work, and regular pain evaluations are need to reinforce postoperative pain management.

CHAPTER II

Research Based Evidence

The purpose of this chapter is to present a comprehensive review of relevant literature. Most of the research available to date regarding nurses' knowledge of pain management almost always includes the correlation of nurses' attitudes, as they are so closely intertwined.

Review of Literature

A review of the literature shows there is relevance in pain control among patients, nurses, other healthcare professionals, and family members. Various aspects of perceptions of pain management have been studied and have shown that inadequate assessment, individual variability in the experience and exhibition of pain, poor communication among members of the health care team and their patients, negative attitudes toward the use of opioids, and misconceptions about pain are the most frequently cited factors accounting for unsatisfactory pain treatment. Patients have a right to pain relief; however, the barriers to assessing and managing patient pain in practice have not as yet been overcome. Conclusively, findings suggest that attitudes and beliefs of nurses and patients are significant factors hampering adequate pain management.

Pain Management

Chung and Lui (2003) used a prospective survey that was conducted in a 1,200-bed hospital to examine postoperative patients' current pain intensity, most intense pain experienced, satisfaction with postoperative pain management, and differences regarding pain and satisfaction levels. All adult patients admitted to a hospital in Hong Kong for

surgery, except those receiving local anesthesia, were eligible to enter this study. The patient outcome questionnaire developed by the American Pain Society was used to solicit data about patients' pain and satisfaction with pain relief. The subjects were 294 postoperative patients. Approximately 85% complained about varying degrees of pain during the 24 hour prior to the assessment of their pain. Approximately 80% of the subjects indicated that both the nurses and physicians reminded them to report pain when it occurred. Only 143 (48.6%) agreed that the nurses and physicians sufficiently emphasized the importance of pain relief. Those who received acute pain services, provided by anesthetists, reported lower levels of current pain intensity. Over 65% of the subjects were satisfied with all levels of health care providers, regarding their postoperative pain management.

Klopper, Andersson, Minkkinen, Ohlsson, and Sjostrom (2006) used both qualitative and quantitative methods to describe strategies used in postoperative pain assessment among a group of nurses in South Africa. The study was conducted in a 950-bed academic hospital complex. A total of 12 surgical nurses ($n = 12$) carried out pain assessments of 36 postoperative patients ($n = 36$) in pain. Data was collected using detailed interviews and pain intensity was estimated on a visual analogue scale (VAS, 0–10 cm). Nurses used four categories of criteria: (a) how the patient looks, (b) what the patient says, (c) the patient's way of talking, and (d) experience of similar circumstances and drew on their past experiences in five different ways: (1) some patients report lower pain intensity than expected, (2) a typology of patients, (3) a focus on listening to patients, (4) what to look for, and (5) what to do for patients were identified. The results

showed that the participant nurses used different assessment criteria to decide on the patients' level of pain.

Manias, Botti, and Bucknall (2006) used a single-group non-comparative study design to identify the strategies used by postoperative patients to bring about pain management decisions with their nurses. A total of 52 nurses and 312 patients participated in the study, and 316 pain activities were observed in two surgical units of a metropolitan teaching hospital in Australia. The most common strategy used was patients acting as a passive recipient for pain relief (60%), whereas problem solving (23%) and active negotiation (17%) were less commonly used. Patients in this study were admitted for surgical treatment of a particular condition, and their subsequent pain was specifically related to this acute event. Therefore, the lack of familiarity of the situation and the severity of pain experienced may have encouraged passivity. Patients may have also felt uncertain about how to approach the pain decision, preferring to defer to nurses. Because increased pain levels can be associated with fear, patients could have been unwilling to speak with nurses to discuss their need for pain relief. Conclusively, this study showed that patient decision making for postoperative pain relief largely involves the use of passive requests, compared with problem solving and active negotiation.

Sloman, Rosen, Rom, and Shir (2005) used a comparative study to compare nurses' ratings of pain intensity and suffering in adult surgical patients with patients' own ratings of these variables, and to investigate whether pain ratings were influenced by cultural and ethnic differences. A convenience sample of 95 patients and 95 nurses in adult surgical units from four hospitals in Jerusalem, Israel were used in this study. A

questionnaire was administered to each patient by the researcher. The questionnaire included a Hebrew translation of the Short-Form McGill Pain Questionnaire for pain sensation, pain affect, and present pain intensity at rest and on movement; a visual analogue scales for overall pain intensity, suffering, and satisfaction with treatment; and demographic and cultural data. The findings were that nurses significantly underestimated all dimensions of pain on the above scales, but accurately assessed patient treatment satisfaction. There were no statistically significant effects for cultural and ethnic differences in pain assessment. Both types of clinical area where nurses worked and the nurses' level of education were found not to influence their assessment. The outcomes of this study have implications for the management of postoperative pain by highlighting the need for more accurate pain assessment among nurses.

Niemi-Murola et al. (2007) used a correlational study to survey the factors affecting patient satisfaction with postoperative pain management. A questionnaire with 41 items was given on the third postoperative day to 102 patients undergoing major orthopedic or vascular surgery. To the knowledge of the researchers, there were no validated questionnaires focusing on patient satisfaction concerning management of postoperative pain. A patient questionnaire was constructed using some questions of the biannual patient perioperative satisfaction questionnaire of the hospital. The routine questions included questions about the patient's demographic data, preoperative visit, and condition before anesthesia and during recovery. Questions concerning measurement of pain and pain during recovery and rehabilitation agreed by the panel of the authors were added to the questionnaire. Intensity of pain was assessed using a 10-cm visual analogue scale (VAS) and given analgesics was recorded. Nurses (n = 74) working on the units

received a questionnaire concerning attitudes toward management of pain. The questionnaires were returned by 75.5% of the patients and 86.3 % of the nurses. Mean VAS on all units was 2 (scale 0-10). Twenty-eight percent of the patients agreed having hard pain during the day of the operation and 39.3% during the first postoperative night. Eighty percent of the patients were satisfied with pain management, and their satisfaction correlated significantly with received preoperative information and preoperative well-being. However, there was discrepancy between the amount of experienced pain and values of the frequent VAS recordings, which did not seem to be due to the nurses' attitudes toward pain.

Gunningberg and Idvall (2007) used a descriptive and comparative design to study the quality of postoperative pain management. Corresponding patient and nurse assessments of patients' pain management were conducted in general and thoracic surgery services. The Strategic and Clinical Quality Indicators in Postoperative Pain Management questionnaire was completed by 121 patients and 47 nurses. An audit of patient records was also completed. The findings revealed that the mean score for four question items in general surgery and five items in thoracic surgery indicated high quality of patient care. Patients in general surgery experienced more pain than patients in thoracic surgery. Patients in general surgery assessed their worst pain to be significantly higher than the nurses did. The mean score for the patients' worst pain during the past 24 hours was 5.7 and the nurses' score was 4.5 on a scale range of 0-10. A significant difference was found in both services in the assessments of worst pain during the past 24 hours between patients, nurses, and documentation in the patient record. Pain intensity assessment was documented significantly more often in general surgery (41%) than in

thoracic surgery (6.7%). In both departments, areas for improvements could be found in all subscales of the Strategic and Clinical Quality Indicators in Postoperative Pain Management questionnaire, for example, communication, action, trust, and environment.

Idvall, Berg, Unosson, and Brudin (2005) used a descriptive study to investigate the differences between nurse and patient assessments of postoperative pain management in two hospitals. A convenience sample of 209 inpatients and 63 nurses from a central county hospital, and 77 inpatients and 34 nurses from a university hospital were used for this study. The Strategic and Clinical Quality Indicators in Postoperative Pain Management questionnaire was used, comprising 14 items in four sub-scales (communication, action, trust, and environment) and two questions concerning the worst pain experienced during the past 24 hours and general satisfaction. Correlations between patient and nurse ratings concerning all assessments were significant in both hospitals. Both groups of patients had significantly higher scores than judged by the nurses on the environment sub-scale and general satisfaction segment. In contrast, nurses from both hospitals tended to significantly underestimate patients' worst pain during the past 24 hours. In summary, this study does not support the belief that the nurses tend to underestimate severe pain more often than mild pain.

Nurses' Attitudes

Dihle, Bjolseth, and Helseth (2006) used a descriptive observational study with nine nurses on three surgical wards at two hospitals. Each nurse was observed during five shifts, day and night, and interviewed after the final observation. The collection and analysis of data followed principles of qualitative research. One main theme emerged about the nurses' approach to postoperative pain management; a discrepancy between

what the nurses said they did and what they actually did. The study revealed a gap between what nurses said and what they did in postoperative pain management. This gap was smaller when the nurses took an active approach. An active approach towards patients about postoperative pain seemed to improve pain alleviation.

Francis and Fitzpatrick (2013) used a pilot study with a descriptive exploratory design to investigate nurses' knowledge and attitudes regarding postoperative pain and identify postoperative patients' pain intensity experiences. The convenience samples included 31 nurses from the gastrointestinal and urologic surgical units and 14 first- and second-day adult postoperative open and laparoscopic gastrointestinal and urologic patients who received patient-controlled analgesia (PCA). The Knowledge and Attitudes Survey Regarding Pain was used to measure nurses' knowledge about pain management. The Short-Form McGill Pain Questionnaire (SF-MPQ) was used to measure patients' pain intensity. The nurses' mean score on the Knowledge and Attitudes Survey Regarding Pain was 69.3%. Patients experienced moderate pain, as indicated by the score on the SF-MPQ. Conclusions were that there was a need to increase nurses' knowledge of pain management.

McNamara, Harmon, and Saunders (2012) used a descriptive study to assess the effectiveness of an acute pain educational program in improving nurses' knowledge, skills, and attitudes around postoperative pain management. A convenience sample of 59 nurses attending an educational program on acute pain management was surveyed. Validated questionnaires were completed before, immediately after and six weeks after the educational program to assess nurses' knowledge and attitudes towards acute pain management. Nurses were also asked to rate their views on 18 statements on acute pain

management. The end result was the acute pain educational program intervention improved nurses' knowledge and attitudes towards pain assessment and management. Effective pain management was most successful immediately after the pain education program. To conclude, continuing evidenced-based educational programs on pain management can improve nurses' knowledge of pain. The results of this study could guide the development and implementation of continuing educational programs for nursing staff in providing patients with evidence-based pain management.

Abdalahim, Majali, Stomberg, and Bergbom (2011) used a descriptive study to explore nurses' knowledge of and attitudes toward pain in surgical units before and after implementation of a postoperative management program at a university hospital in Jordan. The program consisted of an education program for nurses, and its effect was evaluated by using a pre- and post-intervention design. A convenience sample of 65 registered nurses was asked to respond to a 21-item questionnaire, and a total of 240 patients' records were audited. After implementation of the program, the mean scores for all the questionnaire items were found to increase to 75%, with an average of 16/21 for the correct answers. There was a statistically significant difference between the number of correct answers between nurses' responses in the pre-intervention phase and their responses in the post-intervention phase for most of the questionnaire items. Also, there was a statistically significant improvement in the documentation of patients' care in 85% of the audited patients' records. It was recommended to introduce an Acute Pain Services (APS) using a well-established and safe pain management routine to increase the quality of care.

Wilson (2007) used a descriptive study to establish if post registration education and clinical experience influence nurses' knowledge of pain. A pain knowledge survey of 20 true/false statements was used to measure the knowledge base of two groups of nurses. This was incorporated in a self-administered questionnaire that also addressed lifestyle factors of patients in pain, inferences of physical pain, general attitudes, and beliefs about pain management. One hundred questionnaires were distributed; 86 nurses returned the questionnaire giving a response rate of 86%. Following selection of the sample, 72 nurses participated in the study; 35 hospice/oncology nurses (specialist) and 37 general nurses. To put it briefly the specialist nurses had a more comprehensive knowledge base overall than the general nurses; however, their knowledge scores did not appear to be related to their experience in terms of years within the nursing profession.

Matthews and Malcolm (2007) used a comparative study to examine the knowledge and attitudes of nurses who had completed a knowledge and competency training program within an orthopedic center (group one) against a group of nurses who were attending a pain conference who had not completed this program (group two). The questionnaire used was the Nurses' Knowledge and Attitudes Survey Regarding Pain. Findings from the survey revealed that there was no significant difference in the total correct responses between the two groups and there was a severe deficit in knowledge relating to questions about non-pharmacological methods of treating pain and opioid use in chronic pain conditions. However group one had a higher correct response rate in the category based on daily nursing practice.

Machira, Kariuki, and Martindale (2013) used a quasi-experimental pre-and posttest design. The purpose of this study was to implement and evaluate an educational

pain management program (PMP) for nurses in Kenya. Twenty-seven nurses from two units in a single health institution in Kenya participated in a baseline assessment using the Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP). Nine randomly selected nurses then received seven hours of focused education. This group completed the assessment again both immediately after and two weeks after the (PMP). As the researcher was not stationed in the units during the baseline data collection, different approaches to the collection of the completed questionnaires were explored. The nurses unanimously agreed to hand in the completed questionnaires to either their head ward nurse or the deputy nurse. Questionnaires completed at baseline were kept in an envelope that the researcher collected from the head/deputy nurses. This process took two weeks, after which the PMP was implemented in the intervention group. A deficit in knowledge and attitudes related to pain management was prominent at baseline. The nurses who received the PMP scored significantly higher on the NKASRP following the PMP. The PMP appeared to be effective in improving nurses' pain knowledge and attitudes.

Wang and Tsai (2010) used a cross-sectional study to explore nurses' knowledge and barriers regarding pain management in intensive care units. A total of 370 intensive care nurses were recruited from 16 hospitals chosen by layered sampling across Taipei County in Taiwan. Data was collected on nurses' knowledge of pain management using the Nurses' Knowledge and Attitudes Survey-Taiwanese version, on perceived barriers to pain management using a researcher-developed scale, and on background information. The overall average correct response rate for the knowledge scale was 53.4%, indicating poor knowledge of pain management. The top barrier to managing pain identified by

these nurses was ‘giving proper pain medication needs the doctor’s approval.’

Knowledge of pain management was significantly and negatively related to perceived barriers to pain management. In addition, scores for knowledge and perceived barriers differed significantly by specific intensive care unit. Knowledge also differed significantly by nurses’ education level, clinical competence level (nursing ladder), and hospital accreditation category. Results indicated an urgent need to strengthen pain education in these nurses. Also pain education should target knowledge deficits and barriers to changing pain management approaches for Taiwanese nurses in intensive care units.

Al-Shaer, Hill, and Anderson (2011) used a non-experimental, descriptive study to investigate nurses’ knowledge of pain assessment and interventions. A convenience sample of 129 registered nurses participated from 10 separate nursing units in a Midwestern metropolitan hospital. Data was collected using a modified-with-permission version of the Nurses’ Knowledge and Attitude Survey Regarding Pain (NKASRP) and a demographic tool developed for this study. Out of a possible 32 points, the average knowledge score was 25.9. Overall, nurses continue to demonstrate inadequate knowledge of pain assessment and pain management interventions. Although the results of this study indicated relatively high knowledge scores, some nurses were not prepared adequately to care for patients who experience pain. Knowledge of pain management principles and interventions were insufficient.

Naser, Sinwan, and Bee (2005) used a descriptive study to investigate the pain management knowledge of registered nurses in a restructured hospital, did intensive care nurses have a better knowledge of pain management than nurses from other units, and did

nurses with longer work experience have better understanding of pain management. Data was collected using a convenience sample of 237 registered nurses in a restructured hospital. The questionnaire used was the Nurses' Knowledge and Attitude Survey Regarding Pain. A total of 198 questionnaires were returned, giving a response rate of 84%. A passing score on the survey was noted to be 80%. The overall general knowledge on pain assessment was poor. Nurses with longer working experience did not score better than those with shorter working experience. Education level also did not show a significant difference. Intensive care nurses scored better, likely due to the exposure of different pain control methods. In general, the findings implicated a strong need to provide more education on pain management for nurses.

Horbury, Henderson, and Bromley (2005) used a descriptive study to investigate nurses' intention to treat pain in different patients. The study participants were 866 registered nurses working in the inpatient areas of surgery, medicine, oncology, and critical care areas. The motivation for this study arose from poor attendance by nurses at in-service sessions discussing pain assessment and management. A total of 221 completed questionnaires were returned. This was a response rate of 24.9%. A 10-page questionnaire with eight different patient scenarios was distributed to every nurse across all clinical divisions of an acute tertiary facility. The Nurses' Knowledge and Attitude Survey Regarding Pain was also used. The findings indicated knowledge deficits regarding optimum pain relief for patients. The overall study suggested that a more active role in the provision of education about pain assessment and management to nursing staff is required.

Theoretical Literature Review

Holistic comfort is a desirable outcome of nursing care in the clinical setting. Furthermore, it is a canopy term under which the discomforts that patients experience as a result of surgery or procedures can be placed. These discomforts are many and include pain, nausea, anxiety, and hypothermia.

A literature review was conducted by searching a variety of databases and search engines to identify studies utilizing Kolcaba's theory of comfort. These databases include Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, PubMed, and the search engine Google. Two studies identified below, used Kolcaba's theory to investigate nurses' perceptions of comfort as it relates to pain.

In 2004 a descriptive study conducted by Wilson and Kolcaba asked nurses attending annual conferences for American Society of Perianesthesia Nurses (ASPAN) and the Association of PeriOperative Registered Nurses (AORN) about their perceptions of patient comfort. A total of 722 nurses completed the survey, which asked, what were the top three comfort concerns of patients? Warmth was cited most often (33.3%) as the top comfort concern, followed by pain management (18.3%), position (12.2%), and all others (36.2%). Those who participated in the survey were also asked how often cold was a comfort issue for their patients. The majority 71% responded that cold is often a comfort issue, 25% reported sometimes, and just four percent responded that cold is rarely a comfort issue. These results underscored the need for aggressive warming interventions and also as a means of increasing overall patient comfort in the perianesthesia setting. Interviews of 27 critical care nurses were also conducted to provide further insight into nurses' perceptions of patient comfort. In this unpublished

data, the nurses described trusting their own intuition and the family's intuition about a loved one's comfort. In addition, they assessed vital signs, gestures, and grimaces to determine the presence of pain.

Kolcaba identified three types of comfort. The first type, relief, is the state of having a specific discomfort relieved. In the perianesthesia setting, some of the common discomforts to which this relates are pain, nausea, cold, or anxiety. The second type of comfort is ease and refers to a state of contentment for the patient. This can refer to comfort needs arising from a patient's previous experience with a particular need or by the patient's diagnosis or prognosis. For example, patients with uncertainty regarding their diagnosis may need emotional support to achieve comfort in this area. Nurses can prevent or minimize these needs, often without patients realizing that they are doing so, thus keeping patients in a state of ease. The third type of comfort is transcendence, which encompasses the need for inspiration, strengthening, and motivation. Nurses often focus on meeting the needs of transcendence when they are unable to fully meet the other types of comfort needs for their patients. Relief, ease, and transcendence are standard comfort interventions that are designed to support homeostasis such as monitoring vital signs and laboratory results, and responding to changes in patient assessment findings that indicate homeostatic compromise. Standard comfort interventions also include attention to pain, hypothermia, administration of appropriate medications, and repositioning. These comfort interventions are designed to help the patient maintain or regain physical function and comfort and prevent complications (Wilson & Kolcaba, 2004).

Krenzischek and Wilson (2003) conducted a descriptive study in which a convenience sample of 220 nurses who attended the 2001 ASPAN national conference

were surveyed to better understand their perceptions of pain and comfort. The study sample consisted of perianesthesia nurses from different settings including Pre-Admission Testing (PAT), holding room, remote anesthesia, and all phases of the post-anesthesia care unit (PACU). Findings showed that during the preoperative phase, nurses identified patients' desired outcome levels of pain and comfort at frequencies of 21% and 20%, respectively. These findings validated the importance of further education on pain and comfort for perianesthesia nurses.

Strengths, Weaknesses, Gaps, and Limitations

A review of the literature illustrates the need for educating nurses on pain management. The literature indicates that nurses were aware of postoperative pain assessment practices but were not using them consistently. This confirms that a gap still exists between education and practice. This literature review; however, offers potential educational and practice interventions to influence nurses' decisions to adopt evidence-based postoperative pain assessment practices (Wilson & Kolcaba, 2004). Given the large disparity between the amount of pathophysiologic data on the mechanisms responsible for acute pain and the subsequent translation of this scientific evidence into clinical practice, the most immediate way forward is to begin by routinely implementing procedure-specific, evidenced-based pain management protocols in the perioperative period (White & Kehlet, 2010). Integrated collaborations are necessary between the departments of anesthesiology and surgery, acute pain management teams, and nursing staff to achieve the full benefits of improved pain management for patients.

Important areas for future research in acute pain management relate to the influence of metabolic factors, aging, gender, and ethnicity on patient responses to

analgesic medications. Although the proportion of population in the elderly age category continues to increase at a rapid rate, surprisingly few clinical studies have carefully examined the effect of aging on the response to opioid and non-opioid analgesic medications, as well as comfort measures in the postoperative period (White & Kehlet, 2010).

Nurses can play a crucial role in pain management by using a range of strategies and interventions. To make an effective contribution to the alleviation of pain, nurses need to be knowledgeable about pain processes and understand the physiological basis for the nonpharmacological approaches used, such as concepts from the comfort theory. Nonpharmacological pain management therapies are increasing in popularity; however, medical personnel as well as patient's knowledge of these therapies are not well researched (Kolcaba et al., 2006). Physicians and nurses level of knowledge and attitudes of nonpharmacological pain management greatly affects whether a patient is given these options. Nonpharmacological pain therapies and techniques have great potential to relieve someone's pain and can be used with or without pharmacological methods (Wilson & Kolcaba, 2004). There are many advantages to using nonpharmacological methods in relieving pain, therefore, the barriers keeping patients, nurses, and physicians from using them need to be explored. Nurses' attitudes and knowledge of nonpharmacological pain management therapies needs to be assessed, and any deficits identified need to be resolved so patients have access to other options to more effectively manage their pain.

Summary

Nurses spend the most time of all health professionals with patients and are therefore in a unique position to assess and manage pain (MacLellan, 2004). Nurses are responsible for communicating with patients to meet their needs and provide appropriate care based on in-depth assessments. Meeting patients' needs during pain assessment and management involves encouraging patients to express their needs and allowing them to take a more active role in their care. Pain should be assessed both before and after the administration of analgesics; moreover, pain scales should be utilized in practice to measure the effects of pain management in an empirical approach, and pain scores should be documented in the patient's chart (Bell & Duffy, 2009). Educational programs are a potential method of improving nurses' knowledge of pain management and provide an opportunity to address negative attitudes and beliefs. However, these programs may not always be successful in improving nursing staff knowledge or attitudes (McNamara et al., 2012).

CHAPTER III

Methodology

Pain is a common and treatable condition among postoperative patients. Quality care of these patients depends on the pain knowledge and pain management skills of nurses. The purpose of this study was to assess the knowledge and attitudes that nurses have regarding postoperative surgical pain. This chapter presents the design, setting, sample, methods, considerations to protect human subjects, instrument, data collection procedure, and data analysis procedure used in this study.

Design

A quantitative design was used to examine differences in knowledge of pain assessment and pharmacologic pain management strategies among registered nurses from a large academic medical center. Subjects were selected using type of nursing unit in which they work and a convenience sampling plan.

Setting

This study was conducted at an academic trauma Medical Center. It is an 850 bed general medical and surgical facility with 61 trauma/burn and surgical intensive care unit (ICU) beds. The trauma center admits approximately 3,000 injured patients a year. Of these over 500 adult patients require trauma ICU admission where critical care is provided by 10 trauma surgeons with added qualifications in surgical critical care (SCC). In addition, the surgical ICU admits over 450 critically ill adult patients each year most of whom require operative intervention and critical care in the post-operative period of time. In the past year, the Medical Center performed 14,291 annual inpatient and 19,821 outpatient surgeries.

The Medical Center's Level I trauma center designation has been renewed by the state Office of Emergency Medical Services (OEM). The Medical Center was also re-established as a Level I trauma center by the Committee on Trauma of the American College of Surgeons. The Level I designation is awarded to hospitals that demonstrate the highest commitment to caring for injured patients. The Level I achievement recognizes the trauma center's dedication to providing the most advanced up-to-date and highest quality care in the case of major or life-threatening injury. The hospital first received Level I designation in 1982.

Sample

A convenience sample of 384 postsurgical nurses currently employed at the Medical Center and working in one of the nursing units that receive postoperative patients were approached about participating in this study. Of the 384 nurses surveyed 102 nurses responded, resulting in a response rate of 26.6%. Sample size was determined by statistical analysis software. It has been determined to use a standard deviation of (.5); the margin of error or confidence interval is determined to be $\pm .5$; with a 95% confidence level. Therefore, this estimates my sample size to be 384 respondents needed.

Methods

Three hundred and eighty-four nurses, located at the medical center and who currently work in trauma, cardiac, general surgery, palliative care, oncology, burn, postanesthesia recovery care, and medical-surgical units were asked to complete a 37-question knowledge and attitudes questionnaire regarding pain. Implementation of the study took place over 14 days. Nurses were asked to complete the survey during their break time, as not to interrupt patient care and other daily duties. Surveys were emailed

to staff nurses using their work email address. Nurses were given two weeks to complete survey.

Protection of Human Subjects

Permission to conduct the study was obtained from the Medical Center's Institutional Review Board. This study was considered exempt due to minimal risk to participants. Prior to completing the survey each nurse was informed that the completion of the survey was considered as his or her consent to participate. All participation was voluntary. No identifying data was placed on completed surveys, maintaining obscurity and anonymity. Results were analyzed based on findings among the total number of participants; therefore, no individual results were reported. There were no risks associated with participation in this project, and there was no penalty associated with refusal to participate.

Instrument

The Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP) tool has been used to assess nurses in hospital settings and as an indicator of nurses' perception of pain management (Appendix A). This tool was developed in 1987 and has been used considerably from 1987 – present (City of Hope, 2012). The NKASRP tool has been revised over the years to reflect changes in current pain management practices. The content of the tool is derived from current standards of pain management such as the American Pain Society, the World Health Organization, and the National Comprehensive Cancer Network Pain Guidelines (City of Hope, 2012).

Pain is a universal patient phenomenon. Likewise, effective pain management should be a universal response by nurses and other healthcare professionals. Regarding

issues of reliability and validity, it took several years for the authors of this tool to create an instrument of measurement that was valid to pain experts. Validity has been established by comparing scores of nurses at various levels of expertise such as nursing students, new graduates, and experienced nurses with five or more years of experience. The tool was identified as discriminating between levels of expertise. Internal consistency reliability was established by the authors as ($\alpha r > .70$) with items reflecting both knowledge and attitude domains (City of Hope, 2012). This is based on the entire 37-question survey. On the NKASRP tool, the maximum raw score achievable will be 37, which is equal to a 100% correct response. Each correctly answered item will be scored a '1' and each incorrectly answered item will be scored a '0'. The unprocessed scores will be analyzed and formulated to determine the mean score and percentage score overall.

When the NKASRP tool was originally developed, no acceptable pass mark for the survey was predetermined. However, in later studies a passing score of 80% was set for the NKASRP survey (McCaffery & Robinson, 2002). It was noted that if a nurse scored less than 80%, their ability to care for a patient experiencing pain was significantly compromised (McCaffery & Robinson 2002). Therefore, a score of 80% or greater was the threshold set for the purpose of analysis and discussion in this study. Nevertheless, an ideal score on this survey would be 100%. Nurses must be highly competent, knowledgeable and possess positive attitudes towards pain management so that patients receive high quality pain management practices to facilitate optimal patient health outcomes following surgery.

A demographic data form (Appendix B) was also created for use in this study. The form contained items such as age, gender, level of education, years of experience, and area of practice.

Data Collection

Prior to completing the NKASRP, each participant was given a brief explanation (consent form) of the study (Appendix C). Nurses were informed that the survey was voluntary and then were asked to complete the survey. The participants were informed that their answers were anonymous and no identifiable markers were used in the survey. Completion of the survey was considered as their consent to participate in the study.

Surveys were assigned to the trauma, cardiac, general surgery, palliative care, oncology, burn, post anesthesia recovery care, and medical-surgical units. The surveys were distributed electronically via participants work email addresses.

Data Analysis

Descriptive analyses, including means and standard deviations of continuous variables and frequencies and percentages of categorical variables, were calculated to describe the sample. Pearson's correlation, Kruskal–Wallis tests, and one-sample t-tests were conducted to investigate the relationships among demographic variables and to answer the research question.

There were five questions in the demographic part of the survey. The resulting categorical data in the demographic part was summarized using frequency tables, means, and deviations in the knowledge and attitudes survey regarding pain, there were 21 true or false questions and 15 multiple choice questions. The categorical data in the knowledge and attitudes survey were summarized using frequency tables, correlations,

and percentages. The numerical data in the knowledge and attitudes survey regarding pain survey results were summarized using means, frequency tables and correlations.

The exact (and approximate) 95% confidence intervals, test statistics and p -values were reported. The data was analyzed using Statistical Package for the Social Sciences (SPSS) Version 21. The p -value ($p < 0.05$) was defined to be statistically significant.

CHAPTER IV

Results

The main purpose of this study was to investigate nurses' knowledge and attitudes regarding pain management. Descriptive analyses, including means and standard deviations of continuous variables and frequencies and percentages of categorical variables, were calculated to describe the sample. Pearson's correlation, Kruskal–Wallis tests, and one-sample t-tests were conducted to investigate the relationships among demographic variables and to answer the research question.

Demographics

A total of 102 nurses participated in this study. As shown in Table 1, 96 (94.1%) were female, and only six (5.9%) were male. The majority of participants had bachelor's degrees ($n = 66$, 67.3%), 22 (22.4%) had associate's degrees, and 10 (10.2%) had master's degrees. Additionally, 30 (29.4%) participants were from medical/surgical units, 27 (26.5%) were from ICUs, 24 (23.5%) were from trauma units, 10 (9.8%) were from oncology units, and 11 (10.8%) were from other units.

Table 1

Frequencies and Percentages for Categorical Demographic Variables

	<i>n</i>	%
Education		
Associate's Degree	22	22.4
Bachelor's Degree	66	67.3
Master's Degree	10	10.2
Gender		
Female	96	94.1
Male	6	5.9
Unit (Original)		
Burn	4	3.9
Cardiac	3	2.9
Medical/Surgical	16	15.7
Neurology/Neurosurgical	6	5.9
Oncology/Bone Marrow Transplant	8	7.8
Surgical	4	3.9
Trauma	23	22.5
Other	38	37.3
Unit (Recoded)		
ICU	27	26.5
Medical/Surgical	30	29.4
Oncology	10	9.8
Trauma	24	23.5
Other	11	10.8

Note. Frequencies not summing to $N = 102$ and percentages not summing to 100 reflect missing data.

Means and standard deviations for continuous demographic variables are displayed in Table 2. As shown, participants' ages ranged from 22 to 65 years with a mean of 37.6 ($SD = 11.3$). Participants' years of experience ranged from 0.5 to 43 years with a mean of 11 years ($SD = 10.4$).

Table 2

Means and Standard Deviations for Continuous Demographic Variables

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Age	102	37.62	11.28	22.00	65.00
Experience	102	11.01	10.40	.50	43.00

To better understand the structure of the participants, some analyses were conducted to investigate relationships among demographic variables. As shown in Table 3, Pearson's Product-Moment correlation was conducted to examine the correlation between participants' ages and experience. Results showed that they were significantly and positively correlated, $r = .799$, $p < .001$, indicating that older participants had more years of experience.

Table 3

Pearson's Product-Moment Correlation for Age with Experience

	Age
Experience	.799 **

Note. ** $p < .01$.

Kruskal–Wallis tests were conducted to test for differences among participants who have different degrees (i.e., associate’s degrees, bachelor’s degrees, master’s degrees) or participants who work in different units (i.e., ICU, medical/surgical, oncology, trauma, other), regarding their ages. Results in Table 4 revealed a significant age difference among participants with different degrees, $\chi^2 (2) = 7.59, p = .023$. Follow-up Mann–Whitney U tests were conducted to evaluate differences among the three groups. Results indicated that participants who had associate’s degrees were significantly older ($MR = 56.2, Mdn = 45.0, M = 41.9, SD = 10.8$) than were participants who had bachelor’s degrees ($MR = 40.61, Mdn = 32.5, M = 35.7, SD = 11.5$). Participants with master’s degrees were not significantly different from the other two groups in terms of age. However, results did not reveal any significant age difference among participants from different units, $\chi^2 (4) = 4.76, p = .313$.

Table 4

Means and Standard Deviations for Age by Education and Unit

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	χ^2	<i>p</i>
Education					7.585	.023
Associate’s Degree	22	41.91	10.75	45.0		
Bachelor’s Degree	66	35.67	11.48	32.5		
Master’s Degree	10	39.10	6.54	41.5		
Unit					4.758	.313
ICU	27	34.63	10.99	33.0		
Medical/Surgical	30	40.80	13.55	40.5		
Oncology	10	35.60	11.29	33.5		
Trauma	24	38.54	8.96	38.0		
Other	11	36.09	8.67	33.0		

Note. Means with different superscripts differ, $p < .05$.

The same analyses were conducted to test for differences among participants with different degrees or participants from different units regarding their experience. Results in Table 5 revealed a significant difference among participants with different degrees, $\chi^2(2) = 8.47, p = .014$. Follow-up Mann–Whitney U tests were conducted to evaluate the differences among the three groups. Results indicated that participants with associate's degrees had significantly more years of experience ($MR = 58.2, Mdn = 13.5, M = 13.9, SD = 11.5$) than did participants with bachelor's degrees ($MR = 43.9, Mdn = 5.0, M = 9.1, SD = 9.7$), and participants with master's degrees had significantly more years of experience ($MR = 67.2, Mdn = 14.5, M = 14, SD = 6.3$) than did participants who had bachelor's degrees. However, results did not reveal any significant difference on experience among participants from different units, $\chi^2(4) = 7.95, p = .093$.

Table 5

Means and Standard Deviation for Experience by Education and Unit

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	χ^2	<i>p</i>
Education					8.473	.014
Associate's Degree	22	13.89 ^a	11.49	13.5		
Bachelor's Degree	66	9.06 ^b	9.74	5.0		
Master's Degree	10	14.00 ^a	6.34	14.5		
Unit					7.953	.093
ICU	27	7.89	7.88	5.0		
Medical/Surgical	30	14.52	13.28	8.5		
Oncology	10	7.65	10.27	4.5		
Trauma	24	12.52	9.56	12.0		
Other	11	8.82	5.32	9.0		

Note. Means with different superscripts differ, $p < .05$.

Primary Analyses

The NKASRP tool was used to assess participants' knowledge and attitudes regarding pain. Table 6 shows the percentages of correct and incorrect responses for each question. As shown, the correct rates of each question ranged from 99% to 12.7%. Among all questions, Question 30 received the most correct responses, and Question 27 received the least amount of correct responses. In total, 18 questions had correct rates greater than 85%, 13 questions had correct rates between 80% and 50% and eight questions had correct rates less than 50%.

Table 6

Frequencies and Percentages for Q1S to Q37BS

		% (Correct)	% (Incorrect)
Q30	Most accurate judge of patient's pain	99.0	1.0
Q14	Patients' spiritual beliefs	98.0	2.0
Q21	Narcotic/opioid addiction definition	97.1	2.9
Q7	Combining analgesics with other mechanisms is better than single analgesic	96.1	3.9
Q12	Patients should endure pain before using opioid	96.1	3.9
Q19	Anticonvulsant drugs produce pain relief after single dose	96.1	3.9
Q1	Vital signs are reliable indicators of pain	95.1	4.9
Q13	Children cannot reliably report pain	95.1	4.9
Q31	Best approach for cultural considerations of patients	95.1	4.9
Q37A	Circle the number representing Robert's pain	94.1	5.9
Q28	Most likely reason patient would request more medication	93.1	6.9
Q15	After initial opioid analgesic dose, other does should be adjusted	92.2	7.8
Q23	Recommended administration of opioid analgesics for brief pain	92.2	7.8
Q36A	Circle the number representing Andrew's pain	91.2	8.8
Q11	Elderly patients cannot tolerate opioids for pain relief	90.2	9.8

Table 6, *continued**Frequencies and Percentages for Q1S to Q37BS*

		% (Correct)	% (Incorrect)
Q3	Patients distracted from pain do not have severe pain	89.2	10.8
Q4	Patients may sleep in spite of severe pain	87.3	12.7
Q16	Sterile water by injection is useful to test if pain is real	86.3	13.7
Q24	Analgesic medication considered to be drug of choice for prolonged pain	78.4	21.6
Q2	Children have decreased pain sensitivity and limited memory of pain	77.5	22.5
Q10	Opioids should not be used in patients with histories of substance abuse	76.5	23.5
Q29	Identify treatment most useful for cancer pain	74.5	25.5
Q33	The time to peak effect for morphine given IV	71.6	28.4
Q8	Duration of analgesia of 1-2 mg morphine IV is 4-5 hours	69.6	30.4
Q26	Identify when analgesics for post-operative pain should initially be given	65.7	34.3
Q5	Nonsteroidal anti-inflammatory agents are not effective analgesics for bone metastases	61.8	38.2
Q34	Identify time to peak effect for morphine given orally	60.8	39.2
Q22	Identify recommended administration of opioid analgesics for persistent cancer pain	54.9	45.1

Table 6, *continued**Frequencies and Percentages for Q1S to Q37BS*

		%	%
		(Correct)	(Incorrect)
Q18	If source of patient's pain is unknown, opioids should not be used	53.9	46.1
Q25	Identify which IV doses of morphine over 4 hours, equal to 30 mg of oral morphine given q 4 hours	53.9	46.1
Q20	Benzodiazepines are not effective pain relievers	52.9	47.1
Q32	Identify how likely patients already have alcohol/drug problem	49.0	51.0
Q37B	Identify action taken after Robert's analgesia is "morphine IV 1-3 mg q1h PRN pain relief"	48.0	52.0
Q6	Respiratory depression is rare in patients with opioids	42.2	57.8
Q36B	Identify action taken after Andrew's analgesia is "morphine IV 1-3 mg q1h PRN pain relief"	41.2	58.8
Q9	Promethazine and hydroxyzine are reliable potentiators of opioid analgesics	32.4	67.6
Q35	Identify physical dependence after discontinuation of opioid	28.4	71.6
Q17	Vicodin PO is approximately equal to 5-10 mg of morphine PO	20.6	79.4
Q27	Identify likelihood of patient developing respiratory depression	12.7	87.3

The total score and percentage score of each participant were computed. Each correctly answered question was scored a 1, and each incorrectly answered item was scored a 0.¹ The total score was the sum of all questions' scores. The percentage score equaled the total score divided by 37 (the number of questions). Means and standard deviations for total scores and percentage scores are displayed in Tables 7 and 8. As shown, participants' total scores ranged from 13 to 37 with a mean of 26.7 ($SD = 3.5$), and participants' percentage scores ranged from 35.1% to 100.0% with a mean of 72.2% ($SD = 9.5$).

Table 7

Means and Standard Deviations for Score and Percentage

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Score	102	26.73	3.51	13.00	37.00
Percentage	102	72.23	9.48	35.10	100.00

¹. Question 36 and Question 37 contain two pieces (A and B), so each piece was given a "0.5."

A one-sample *t*-test was conducted to determine whether the percentage scores were significantly different from 80%. As shown in Table 8, the average percentage score was significantly less than 80%, $t(101) = -8.28, p < .001$. The 95% confidence interval of the difference between the percentage score and 80% was from -9.63 to -5.91.

Table 8

Means and Standard Deviations for Percentage

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Percentage Score	102	72.23	9.48	8.28	.000

One-way ANOVAs and Pearson's product-moment correlations were conducted to test relationships between percentage scores and demographic variables (i.e., education, unit, age, and experience). However, no significant relationship was found. Participants' ability to care for patients experiencing pain was compromised in general.

CHAPTER V

Discussion

The role of the nurse is pivotal in the assessment and management of postoperative pain. Nurses need to understand the pathophysiology of pain and recognize that pain management is vital in the recovery of postoperative patients. Pain assessment and reassessment are components of the nurse's role that are significant in pain management. Therefore, the purpose of this study was to determine nurses' knowledge and attitudes regarding postoperative pain.

Implications of Findings

This study has provided an insight into the knowledge and attitudes of nurses working in a trauma academic medical center. Overall, the findings in this study have revealed some knowledge deficits and insensitive attitudes of nurses working in the medical center surrounding the perspective of pain management. The findings revealed that the respondents' knowledge of pain management was not ideal. The mean correct answer rate in this study was only 72.2%, which is notably below the threshold of 80% which has been indicated as the minimum level at which is acceptable in order for nurses to deliver appropriate care to patients who are experiencing pain. Consequently, only 21 nurses (20.6%) of those surveyed had scores above 80%.

Ultimately, these knowledge deficits and attitudinal beliefs may have impact on the administration of effective and optimal care given to patients who are experiencing pain in the postoperative setting. The findings from this study reflect those of previously published studies, which reinforce the universal concern of the significant problem of poor knowledge and attitudes held by nurses caring for patients experiencing pain. The

lack of pain-related knowledge and attitudes found in the present study existed in several key areas in the perspective of pain management. The major areas which showed the most substantial knowledge deficits and weaknesses revolved around (a) pharmacology based knowledge (b) fear of respiratory depression (c) misperceptions of opioid addiction and (d) potentiators of opioid analgesics.

Application to Theoretical/Conceptual Framework

Katherine Kolcaba's Comfort Theory provides a framework for care of patients experiencing pain. This theory addressed *relief* as the state of having a discomfort mitigated or alleviated; *ease* as the absence of a specific discomfort such as surgery pain and *transcendence* as the ability to 'rise above' discomforts when they can not be eradicated or avoided which can be related to cancer pain. Although relatively new, the Comfort Theory has materialized into a world renowned theory that challenges nurses to prioritize patient comfort. It is relevant to nurses in guiding their interventions to promote comfort for their patients. Its significance is crucial in practice, for all nurses to assess and decide the best pain intervention to care for their patients. It has been important within this research in showing that application of this theory does make the patient feel more comfortable as well as promote healing. However, evidence from the study conclusions support that we as nurses are not very knowledgeable of how to make our patients feel comfortable, or even how to appropriately manage their pain.

Provision of comfort is paramount to the practice of all nurses. However, the approach to regulate pain needs holistically is often intuitive or based on lack of understanding in knowing adequate comfort coincides with management of pain. The findings of this current study suggest that nurses have serious knowledge deficits and

erroneous beliefs that may implicate ineffective management of patients' pain and the lack of comfort we actually give our patients.

Limitations

All studies have some inherent limitations that must be taken into consideration. While providing baseline information regarding the knowledge and attitudes of nurses working within an academic medical center, this study had limitations. First, this study utilized quantitative research design to investigate and describe the knowledge and attitudes of nurses working in the medical center. While a quantitative research design was considered the most appropriate means of examining the phenomenon under investigation, it is limited by the fact that knowledge yielded might be too abstract and general for direct application to specific situations, contexts, and individuals.

This study was limited to surveying nurses in specific adult nursing units, which may have introduced bias. Additionally, the study sample was mostly limited to nurses working within postsurgical adult units, so it cannot be generalized to other sample populations of nurses. Furthermore, this study did not investigate nurses' knowledge and attitudes regarding pain of patients with complex problems such as chronic pain conditions or cognitively impaired or non-verbal patients. Looking retrospectively at the study, the researcher, upon reflection recognizes certain limitations and flaws with the current study. Although the participation of a major academic medical center was positive, the study was limited by geographical location. While the findings are indicative of the nurses working within this hospital where the study was commenced, the findings cannot be generalized to a larger population of nurses.

It may have been better to survey more widely to obtain findings, which could be generalized, to a larger population of nurses. In addition, this study was limited to the investigation of nurses' knowledge and attitudes regarding pain, yet their actual pain management practice was not examined. It may have been beneficial to assume some research exploring nurses' clinical practice, which would have complimented and validated the research findings obtained from the NKASRP survey. For example, observational data of nurses working within the various units could have been considered and the researcher could have compared the results of the NKASRP survey with the observational data to provide a more substantive insight into the phenomenon. Also, an audit of patient charts could have been warranted to dissect the documentation practices of the nurses with regard to pain assessment and intervention. This audit of patient charts could be used to establish the administration practices of analgesics by the nurses to their patients. This information would have been advantageous in looking at 'actual' administration trends of analgesics by nurses as opposed to 'supposed' administration trends. While the results of the patient picture could be indicative of what nurses do in clinical practice, we cannot be certain. In reflection, the researcher acknowledges that it may have been beneficial to examine actual practice in addition to conducting the NKASRP survey to add accuracy to the research findings and to provide a more valid and comprehensive insight into the phenomenon. Correspondingly, it may have been beneficial to know if years of experience in nursing or higher degrees in nursing coincide with further pain comprehension. However, due to the apparent constraints such as time, expenditures, and resources, it would have been unfeasible for the researcher to carry out these additional viewpoints. Despite these possible limitations, the results of the present

study do provide a good description of the knowledge and attitudes of nurses working in postsurgical units and provide a substantive basis for future investigations and research initiatives. Ideally, findings originating from this research will provide a rationale for further research initiatives to examine the phenomena investigated in this present study. Owing to the apparent limitations, the researcher will suggest recommendations for future research endeavors which will expand and elaborate on the findings derived from this current study.

Recommendations

The findings of the present study provide an unfortunate indictment of nurses' knowledge and attitudes regarding pain within this medical center. The findings are congruent with previously published studies, which underscore the extensive knowledge deficits and poor attitudes of nurses working within numerous clinical settings. It has been acknowledged that this lack of knowledge is an important barrier to the adequate management of pain (Lewithwaite et al., 2011). The researcher suggests that intensive and comprehensive educational initiatives should be tailored to meet the specific needs of nurses at all levels of nursing. A thorough review of nursing core curriculum both at under-graduate and post-graduate level should be instigated to ensure the content of educational modules provide adequate, relevant and appropriate information and subsequently equipping nurses to effectively manage pain (McNamara et al., 2012). The researcher suggests that these educational initiatives should be mandatory for all nurses and they should be provided on a continuing basis. Furthermore, the outcomes of these educational initiatives should be investigated to ensure they are effective. The researcher proposes that further endeavors such as quality-improvement programs should be rolled

out within health care organizations which could include many strategies aimed at enhancing the knowledge and improving the practices of pain management. These strategies may possibly include; (a) theoretical education on areas of pain management which are observed to be weak, (b) incorporation of a protocol for the administration of as required or as needed (PRN) opioid analgesics which would guide nurses in making safe and effective decisions with regard to opioid selection and titration (McCaffery, Pasero, & Ferrell, 2007), (c) facilitation of best practices by updating policies, procedures, and guidelines relating to pain management, and (d) undertake regular audits of nursing pain management practices to establish additional strategies aimed at improving practice if the application of pain management practice is not congruent to best practice standards.

Conclusion

It is estimated that in the United States more than 76 million people suffer from pain. Pain can be chronic or acute, such as post-surgical pain (The Joint Commission [TJC], 2001, para. 1). Another key area for future research is that this study could be undertaken with nurses working in various adult and pediatric clinical settings who care for different patient populations experiencing both acute and chronic pain conditions. Similarly, it would be beneficial to empirically evaluate the efficacy of quality improvement initiatives such as training programs on nurses' knowledge, attitudes, and subsequent practices in pain management. Additionally, initiatives aimed at larger scale studies integrated with pain management education programs for student nurses and healthcare professionals at the postgraduate level would assist with implementing national and international strategies and policies to meet patients' rights to best practice

in pain management. This present-day study supports other findings in showing that a targeted focus is required to adequately meet pain management education needs of healthcare professionals to facilitate their developing competencies to be able deliver services that sufficiently meet all aspects of patients' pain management needs to ensure comfort and optimal patient health outcomes. As shown by this and other studies, pain management is particularly vital in the acute postoperative pain setting to prevent the onset of chronic pain. Nevertheless, the comfort theory helps to guide nursing decisions regarding the patient, and creates a tangible picture of the interventions needed to achieve comfort for the patient.

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Appendix A

Nurse's Knowledge and Attitudes Survey Regarding Pain

October 2012

The "Knowledge and Attitudes Survey Regarding Pain" tool can be used to assess nurses and other professionals in your setting and as a pre and posttest evaluation measure for educational programs. The tool was developed in 1987 and has been used extensively from 1987 - present. The tool has been revised over the years to reflect changes in pain management practice.

Regarding issues of reliability and validity: This tool has been developed over several years.

Content validity has been established by review of pain experts. The content of the tool is derived from current standards of pain management such as the American Pain Society, the

World Health Organization and the National Comprehensive Cancer Network Pain Guidelines.

Construct validity has been established by comparing scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise. 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 ($\alpha > .70$) with items reflecting both knowledge and attitude domains.

Regarding analysis of data: We have found that it is most helpful to avoid distinguishing items as measuring either knowledge or attitudes. Many items such as one measuring the incidence of addiction really measure both knowledge of addiction and attitude about addiction. Therefore, we have found the most benefit to be gained from analyzing the data in terms of the percentage of complete scores as well as in analyzing individual items. For example, we have found it very helpful to isolate those items with the least number of correct responses and those items with the best scores to guide your educational needs.

Enclosed for your use is a copy of our instrument and an answer key. You may use and duplicate the tool for any purpose you desire in whole or in part. References to some of our studies which have included this tool or similar versions are included below. We have received hundreds of requests for the tool and additional use of the tool can be found in other published literature. We also acknowledge the assistance of several of our pain colleagues including Pam Kedziera, Judy Paice, Deb Gordon, June Dahl, Hob Osterlund, Chris Pasero, Pat Coyne and Nessa Coyle in the revisions over the years. If using or publishing the tool results please cite the reference as "**Knowledge and Attitudes**

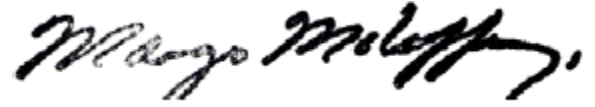
Survey Regarding Pain” developed by Betty Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN, (<http://prc.coh.org>), revised 2012.

We hope that our tool will be a useful aid in your efforts to improve pain management in your setting.

Sincerely,



Betty R. Ferrell, RN, PhD, FAAN
Scientist



Margo McCaffery, RN, MS, FAAN
Research Lecturer and Consultant

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. Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics. |
| T | F | 10. Opioids should not be used in patients with a history of substance abuse. |
| T | F | 11. Elderly patients cannot tolerate opioids for pain relief. |
| T | F | 12. Patients should be encouraged to endure as much pain as possible before using an opioid. |
| T | F | 13. 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 | 14. Patients' spiritual beliefs may lead them to think pain and suffering are necessary. |

- T F** 15. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.
- T F** 16. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.
- T F** 17. Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5-10 mg of morphine PO.
- T F** 18. 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** 19. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.
- T F** 20. Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.
- T F** 21. 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.

Multiple Choice – Place a check by the correct answer.

22. 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

23. 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

24. 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

25. Which of the following IV doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours?

- a. Morphine 5 mg IV
- b. Morphine 10 mg IV
- c. Morphine 30 mg IV
- d. Morphine 60 mg IV

26. 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

27. 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%

28. 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.

29. 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

30. 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
31. 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).
32. How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem?
- < 1% 5 – 15% 25 - 50% 75 - 100%
33. The time to peak effect for morphine given IV is
 a. 15 min.
 b. 45 min.
 c. 1 hour
 d. 2 hours
34. The time to peak effect for morphine given orally is
 a. 5 min.
 b. 30 min.
 c. 1 – 2 hours
 d. 3 hours
35. 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

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.

36. 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 1-3mg 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.

37. 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:

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.

Appendix B

Demographic Data Form

1. What is your level of education?
 - Associate Degree
 - Bachelor's Degree
 - Master's Degree
 - Other
2. What is your age? _____
3. How many years of nursing experience do you have? _____
4. Gender
 - Male
 - Female
5. What type of nursing unit do you work on?
 - Surgical
 - Medical-Surgical
 - Trauma
 - Burn
 - Cardiac
 - Post-Anesthesia Care Unit
 - Oncology/Bone Marrow Transplant
 - Neurology/Neurosurgical
 - Other, please specify _____

Appendix C

Consent Form

Dear Nurse,

As part of the requirements for the Master of Science in Nursing Degree, I am conducting a study about nursing knowledge and attitudes about pain management. You are being invited to participate in this research study. Before you make a decision to participate, it is important for you to understand what participation consists of and the purpose of this study.

The purpose of this study is to assess the level of knowledge among registered nurses who care for adult patients. You will be asked to complete a survey provided to you. You can expect to complete the survey in approximately 15-20 minutes. Please select the response best suited to each question.

There is minimal risk of being identified by demographic information provided in the survey. Your participation in this study is completely voluntary and you may choose not to participate without any penalty. If you choose to participate, you may withdraw your participation at any time during the survey. Completion of the survey will serve as your consent to participate.

There will be no direct benefits to you for participation in this study. It is my hope that information obtained from this study may be useful to the body of nursing to increase understanding and management of pain.

The Institutional Review Board (IRB) is a group of people who review the research to protect your rights. If you have a question about your rights as a research participant, or you would like to discuss problems or concerns, have questions or want to offer input, or you want to obtain additional information, you should contact the Chairman of the IRB at (336) 716-4542.

Also should you have any questions about the research study or anything related to the study, please contact the researcher Joyce Craig at jcraig2@gardner-webb.edu or my professor, Tracy Arnold at taronld@gardner-webb.edu.

By returning the survey, I confirm that I have read and understood the information. I understand that participating in the study is voluntary and I may withdraw at any time.

Click on the following link to enter the survey

<http://www.surveygizmo.com/s3/1671728/Knowledge-and-Attitude-Survey>