2012

Knowledge and Attitudes of Nurses Toward Pain Management

Penny Hennessee
Gardner-Webb University

www.manaraa.com

Knowledge and Attitudes of Nurses Toward Pain Management

by

Penny Hennessee

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

Boiling Springs, NC

2012

Submitted by: Approved by:

_____   _____

Penny Hennessee, BSN, RN   Rebecca Beck-Little, PhD, RN

_____   _____

Date   Date

Abstract

The under-treatment of pain is a problematic area for hospitalized patients nationwide. Pain diminishes a person's quality of life and this issue can be of great concern to healthcare personnel. The purpose of this study was to explore nurses' knowledge and attitudes towards pain and pain management. Fifty nurses from various practice areas participated in the survey that included a demographic data form and the Knowledge and Attitudes Regarding Pain Management questionnaire. A literature review was conducted to review and explore nurses' knowledge and attitudes towards pain and pain management. This provided empirical evidence of nurses' assessment and documentation behaviors, potential knowledge and attitude deficits, assessed the effectiveness of pain intervention, and provided evidence of personal and systematic barriers to effective pain management. Patricia Benner's Novice to Expert Model provided the framework for the study. The investigator used a quantitative approach of descriptive research, and a correlational study design to examine relationship among the demographic data and the actual knowledge of registered nurses who practice in a variety of acute care settings. The Statistical Package for the Social Sciences (SPSS), version 18 was utilized for data analysis. The results of the study indicated that there are deficits in nurses' knowledge and attitudes towards pain and pain management. Specifically, knowledge deficits were seen in analgesic dosing, analgesic ceiling dose of opioids and discerning addiction from tolerance and physical dependence. Strengths were indicated in physiology and planning.

Keywords: k*nowledge, attitudes, pain management*

Acknowledgments

iv

TABLE OF CONTENTS

Chapter I

Introduction

A leading challenge in acute healthcare today is the provision of appropriate pain management in patients who experience acute or chronic pain. As the population ages and longevity is seen among people, quality of life issues arise. Unfortunately, some patients cannot self-report pain verbally. A thorough pain assessment is vital in the management of pain and should be priority in the care and treatment. Pain is a subjective experience, and no objective tests exist to measure it (American Pain Society (APS), 2009). The Joint Commission developed pain management standards that require providers to recognize the rights of patients by appropriately assessing and managing their pain. Patients are to be screened for pain during their initial assessment, when clinically required, and during ongoing reassessments. In addition, patients are to receive education about pain management (The Joint Commission, 2012).

The under treatment of pain has been the subject of research and was first documented in a landmark study by Marks and Sachar (1973). These researchers found that 73 % of hospitalized medical patients had moderate to severe pain. More currently, in 2002, the American Geriatrics Society Panel reported 45 to 80 % of elderly patients in nursing homes have substantial pain that is undertreated. According to the Wells, Pasero, and McCaffery, (2008), physicians and nurses identify lack of an appropriate pain assessment tool as one of the most problematic barriers to achieving good pain control (p. 3). Nurses may experience confusion of their responsibilities in the provision of pain management. Under current practice, the prescription of analgesics is the responsibility of physicians; while physiotherapists may implement non-pharmacological interventions for

pain relief. Nurses may therefore confuse how to integrate pain assessment and intervention into daily practice (Lui, So, & Fong, 2008).

The American Pain Society, 2009 states that chronic non-cancer pain is one of the most common reasons patients consult healthcare providers, and is frequently inadequately treated. In a landmark study on pain management, conducted by McCaffery and Ferrell (1997), it is stated that the "under treatment of pain and lack of knowledge about pain management have been evident for approximately two decades. Because nurses are often the cornerstone of pain management, nurses' knowledge in this area is especially important" (p.175). As part of efforts to address shortcomings in the treatment of pain, the U.S. Congress declared the 10- year period beginning in 2001 the "Decade of Pain Control and Research". In addition, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) published pain management standards in 2000 that recognized the right of individuals to appropriate assessment and management of pain (American Pain Society, 2009).

Problem Statement

The ethical principal of beneficence oblige health care professionals is to provide pain management and comfort to all patients, including those vulnerable individuals who are unable to speak for themselves. Providing quality and comparable care to individuals who cannot report their pain is directed by the principal of justice (American Nurses Association (ANA), 2001). In clinical settings nurses play a vital role in pain assessment and management, and must be knowledgeable regarding how to best assess and manage pain. Pain may be undertreated as a result of inadequate assessment or the inappropriate use of analgesics, especially opioids (Al-Shaer, Hill, & Anderson, 2011; McCaffery &

Robinson, 2002). Many people in pain and their healthcare providers often face a variety of barriers that impede effective pain management. These barriers include issues of knowledge, attitudes, and perceptions that exist in patients and their clinicians, and real or perceived legal and regulatory impediments to good pain care (APS, 2009).

Literature synthesis over the past decade shows that one reason patients continue to suffer from improper pain management is the lack of expertise of nurses and physicians (Wells et al., 2008). Unfortunately, many of these studies have indicated that nurses have a knowledge deficit regarding pain, and in addition hold negative attitudes and misconceptions towards pain and usage of associated medications. Many nurses have insufficient knowledge about basic mechanisms of action of medications, dosages and uses of certain pharmaceuticals, in addition to other pain management interventions (Lasch et al., 2002).   According to the American Nurses Association (2001), nurses are required to maintain current knowledge in pain assessment and management. The American Pain Society positions that all persons with pain deserve prompt recognition and treatment (APS, 2009). In addition, the Oncology Nursing Society's (ONS) 2004, position on cancer pain makes it clear that all people have the right to optimal pain relief, which includes culturally relevant and sensitive pain education, assessment, and management (ONS, 2004). The Joint Commission defines standards that require health care providers to recognize a patients right to appropriate pain assessment and management by providing pain screening on initial contact, when clinically required, and ongoing during periodic re-assessments. Nurses are also required to provide education to patients and their families in regard to pain management (The Joint Commission, 2012).

Pain is one of the most common reasons that patients seek medical treatment as well as being one of the most feared sequela for patients (Turk & Dworkin, 2004). Pain is a personal experience that impacts the quality of life, increases vulnerability in an already vulnerable population, and promotes dependence on health care providers for access to adequate pain management (ONS, 2004). Literature reviews have indicated that there is an overall problem with nursing knowledge and attitudes towards pain management. Many nurses lack the education and training for effectively managing pain, resulting in longer hospital stays and reducing the quality of life for patients.

Justification of the Research

It is estimated that in the United States more than 76 million people suffer from pain (The Joint Commission, 2012). Negative effects of uncontrolled-undertreated, prolonged pain are a significant implication for further research. Studies show that in addition to being common, chronic non-cancer pain is also very costly. In 1998, total healthcare expenditures incurred by individuals with back pain, the most common cause of pain, were $90.7 billion in the U.S., with incremental costs attributed to back pain $26.3 billion (APS, 2009). In addition to direct medical costs, chronic pain results in substantial indirect costs due to days lost from work. When pain is inadequately managed, patients continue to suffer and seek treatment, therefore driving up healthcare expenditures that could have been avoided with proper management.

In the health care professional's efforts to effectively control pain, an often overlooked facet of care to consider is physically harmful effects. It is often actually physiologically unsafe to have pain (Wells et al., 2008). Research suggests pain

negatively affects the endocrine and metabolic system, cardiovascular system, gastrointestinal system, and immune system and is often responsible for stress (Wells et al., 2008). The endocrine system reacts by releasing excessive amounts of hormones, resulting in carbohydrate, protein, and fat catabolism, poor glucose use, and other harmful effects. This reaction, combined with natural inflammatory responses, can produce weight loss, tachycardia, tachypnea, fever, shock, and death (Wells et al., 2008). Unrelieved pain also prolongs the stress response, adversely affecting the patient's recovery. Although an ubiquitous phenomenon, pain is inherently subjective. The only way to know about someone's pain is by what they say or show by their behavior. There is an assumption that pain is highly associated with emotional and physical functioning, and that a reduction in pain will inevitably lead to an improvement in function and patient satisfaction (Turk & Dworkin, 2004).

Purpose

The purpose of this study was to explore nurses' knowledge and attitudes regarding pain management. Pain control is a critical aspect of nursing care and subsequent management must be optimal to ensure patient satisfaction and quality patient outcomes. Pain is a complex, subjective experience that is difficult to evaluate. No objective measure exists (Al-Shaer et al., 2011; American Pain Society 2009) to assess pain. Data collected during this study evaluates the knowledge and attitudes of nurses practicing in a variety of areas towards pain, and will presumptively assist in determining if nurses are accurately assessing pain in a growing subgroup of the acute healthcare population.

Thesis Question or Hypothesis

The research questions that were addressed in this study are:

1. What is the level of Registered Nurses' knowledge regarding pain and pain management?

2. What is the attitude of Registered Nurses regarding pain and pain management?

3. What is the relationship among demographic variables and Registered Nurses' knowledge and attitudes toward pain and pain management?

Theoretical or Conceptual Framework

Patricia Benner's conceptual framework, Novice to Expert Model of Skill Acquisition was used to guide this study. Benner's model lends itself well to the study of knowledge in a variety of nursing situations. Benner asserts nurses move through five skill acquisition stages in the context of the Dreyfus Model (Tomey & Alligood, 2006). Initially, nurses lack the intuitive background experience needed for situational decision-making; this is referred to the novice phase. Beginner nurses need to learn the simpler aspects of situations before moving on to understand the whole complex, unfolding clinical situation. Recognizing the nature of the clinical situation is at the heart of good clinical reasoning (Benner, Kyriakids, & Stannard, 2011). In the second phase, the advanced beginner can perform in a marginally acceptable manner if exposed to the particular situation to increase knowledge. The competent nurse during the third phase is able to demonstrate some efficiency in time management, planning, and knowledge of the situation. According to Benner (1984) the competent nurse has a "feeling of mastery and the ability to cope with and manage the many contingencies of clinical nursing" (p.231).

The fourth phase is the proficient nurse. Benner asserts proficient nurses are able to view the situation as a whole rather than focusing on individual tasks at hand. It is crucial for the nurse to understand completely the physiology and reasoning for enforcing this education. The fifth and final phase of acquisition is the expert nurse. At this phase, when applied to pain management, would be considered expert in the field of pain management. Expert nurses possess an intuitive nature which reacts to a situation, focusing in on the most important aspects of the problem. When questioned why certain decisions were made, the most likely response would be "because it felt right" or "it looked good" (Benner, 2001, p. 32). Benner describes a qualitative change in the expert nurse. The expert nurse "knows the patient," i.e., knows the typical pattern of response and knows the patient as a person. Benner was among the first nurse theorists to emphasize the significance of intuition to reasoning skills, and to correlate forms of knowledge, such as experimental and theoretical, to the trajectory of professional nursing practice (Banning, 2008).

The stages of Benner's model are detailed in all five levels with respect to skill acquisition in relating to the knowledge of the nurse. The stages of Benner's model are further categorized according to the nurse's acquisition of assessment skills and development of confidence in practice (see Appendix A). This theoretical referencing does not suggest that each nurse caring for a patient, who is experiencing pain, will become expert, but moreover implies that novice to proficient references the nurse's progression from a mere base knowledge of pain assessment into a the development of strong assessment skills and situational knowledge related to cause, recognition of pain, and available resources for pain control. For the purpose of this study, the staff nurse

managing the primary care of the acute patient will therefore not be expected to reach this level of Benner's acquisition model as expert, but will strive to attain proficiency in their ability to provide the patient with the pathophysiology, assessment, planning, and intervention to achieve target pain control, and continually work toward the goal of being comfortable if not pain-free during their hospital stay.

The major premise of Benner's work is knowledge. She wants to "discover and describe" the role that knowledge has in the nursing practice. She calls her work "articulated research" and it distinguishes a difference between practical and theoretical knowledge (Tomey & Alligood, 2006, p. 142). Benner contend that the nurse's role to provide quality patient care is situational. As described by Benner (2001), there is a knowledge difference in "knowing that" as opposed to "knowing how". There is the external criterion of performance. For instance, proficient and expert nurses will assess a situation more accurately and make decisions more efficiently than the novice, the advanced beginner, or even the competent nurse (Paley, 1996). Internal criterion can be described as the mental processes characteristic of each stage that vary. This is where the novice nurse must rely on rules and application of those rules, whereas the competent nurse draws on experience and familiarity with the way situations unfold (Paley, 1996). Nursing is practiced in real life situations with real world constraints, possibilities, and resources. Certain environments may influence the individual's ability to respond effectively. Performance measures can only be as useful and precise at the competencies selected to be measured (Benner, 2001). Benner's model describes the knowing that comes from cultural backgrounds, taking into consideration that one's cultural experience is valuable because it shapes how one will make clinical judgments later on. In

application of Benner's theory to the current study, it becomes clear that knowledge and attitudes occur in the same manner as Benner suggests in the Novice to Expert model. The ability of new graduates to make the complex decisions required for safe care in our current environments is not adequate for the complex, patient-care assignments they currently receive. Benner, Tanner, and Chesla, (2009) have suggested that today's workplace demands make the transition from being a competent nurse, who is able to pass the licensure exam, to being a proficient nurse, who is able to prioritize effectively, increasingly difficult.

<div align="center">**Definition of Terms**</div>

Chronic pain is defined by the International Association for the Study of Pain (IASP),(2012) as "pain that persists beyond normal tissue healing time, which is assumed to be three months."

Knowledge is defined as the fact or condition of knowing something with familiarity gained through experience or association (Merriam-Webster Online Dictionary, 2012).

Pain is defined by the International Association for the Study of Pain, 2012, as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage".

Pain attitude is defined as a persisting set of beliefs and values that affect how one responds or reacts when pain is involved (McMillian, Tittle, Hagan, Laughlin, & Tabler, 2000).

Pain Management is defined by the American Pain Society Quality of Care Task Force, as all interventions used to understand and ease pain, and alleviate the origin of the pain (Gordon et al., 2005).

Summary

Pain is a subjective experience, and no objective tests exist to measure it (APS, 2009). The ethical principles of beneficence and no maleficence oblige health care professional to provide pain management and comfort to all patients, including those challenging individuals who are unable to speak for themselves. Respect for human dignity, the first principal in the "Code of Ethics for Nurses" (ANA, 2001), directs nurses to provide and advocate for humane and appropriate care. Based on the principal of justice, this care is given with compassion and unrestricted by consideration of personal attributes, economic status, or the nature of the health problem. In alignment with these ethical tenants, the International Association for the Study of Pain , 2012, initiate the Declaration of Montreal at the International Pain Summit, a statement acknowledging access to pain management as a fundamental human right endorsed by 64 IASP chapters and many other organizations and individuals (IASP, 2012).

The purpose of this study is to explore nurses' knowledge and attitudes regarding pain management. Pain control is a vital part of nursing provision of care, and pain control must be optimal to assure that outcome goals are met. Data collected during this study will describe the knowledge and attitudes of nurses towards pain management, and will presumptively assist in determining if nurses are accurately assessing pain in a growing subgroup of the acute healthcare population.

Chapter II

Literature Review

Pain control is a critical aspect of nursing care and subsequent management must be optimal to ensure patient satisfaction and quality patient outcomes. The purpose of this literature review was to explore nurses' knowledge and attitudes towards pain management. The literature identifies numerous impediments to effective pain management, and therefore demonstrates their impact on patient outcomes. Understanding the significance of this potential impact is crucial for both the patient and the nurse caring for the patient to assist in the prevention of complications, to decrease length of hospital stay, and reduce revisits and readmissions for acute care. Nurses' knowledge and attitudes towards pain management is a common theme in nursing literature, and has been the focus of nursing practice for decades. Despite the numerous studies on the subject, barriers to effective assessment and intervention continue to exist. Barriers analyzed include, knowledge deficits and negative attitudes of nurses possibly stemming from preconceived notions regarding pain management.

Review of Literature

The researcher searched the topics of knowledge and attitudes towards pain management utilizing the Cumulative Index for Nursing and Allied Health Literature [CINAHL]. Terms searched included: pain, pain assessment, pain management, pain knowledge, pain attitudes, beliefs about pain, under-treatment of pain, and barriers to pain.

Theoretical Literature

The aim of a study conducted by Fero, Whitsberger, Wesmiller, Zullo, and Hoffman (2007) was to identify critical thinking learning needs of new and experienced nurses with varying levels of educational preparation. The expectation was that nurses with more years of experience and those prepared at the baccalaureate level would have higher levels of critical thinking skills. The theoretical framework guiding this expectation was Patricia Benners's Novice to Expert model (1984). A sample of 2144 newly hired nurses in a university-affiliated health system completed the Performance Based Development System Assessment consisting of 10 videotaped vignettes depicting change in patient status. Results were reported as meeting or not meeting expectations. Overall, 74.9% of participants met expectations. Controlling for level of preparation, associate ($p=0.0007$) and baccalaureate ($p=<0.0001$) nurses were more likely to meet expectations as years of experience increased; a similar trend was not seen for diploma nurses ($p=0.10$).

Four themes were identified in a study conducted by Richards and Hubbert (2007).The purpose of their study was to learn how expert nurses assess, manage, and care for patients with postoperative pain. A qualitative design with a phenomenologic design was used to conduct the study. Dreyfus Model of Skill Acquisition, which Benner validated for nursing practice, provided the conceptual framework for recruitment and data analysis. Three registered nurses who practiced on a 41-bed acute care unit in a large urban hospital in the western United States participated in the study. The researchers chose Benner's framework was selected for this study because of her differentiation of various levels of skill acquisition, specifically her articulation of

qualities held by the expert nurse. Two interviews were conducted with each participant; the second interview was for validation of data collected in the first interview. The questions that the researchers used to guide the interviews were: (1) How do expert nurses know that their patients are having pain? (2) What kind of pain management techniques or strategies do expert nurses use? Four themes were identified in the study: (1) consider the whole person; (2) the independent art of nursing; (3) accepting what the patient says; and (4) commitment to surgical nursing. The small sample size of the participants was identified as a limitation of the study. Researchers believe that the findings in the study could have significant implications on future research and education.

Developing expert nurses is essential for effective and quality-based healthcare outcomes, yet little is understood about what conditions foster expert development. A study conducted by Haag-Heitman (2008), examined expert nurses' perceptions of personal and environmental influences on attainment of expert performance. A group of ten hospital-based practicing expert nurses working for two Midwest healthcare systems participated in this study. The nursing divisions at both systems use a five-stage novice to expert framework based on the Dreyfus Model of Skill Acquisition as adapted to nursing by Benner (1984), as the foundation for their clinical practice model for promotion and recognition. This study used an exploratory qualitative descriptive design. There were three exposures to the author/researcher during this study. The first exposure involved completion of a short survey designed to capture brief historical details of the participants' journey to the expert stage of performance, beginning with entry into practice. The second exposure entailed a 45- to 60-minute interview using a semi-

structured interview protocol. The third exposure included participation in a focus group to confirm the interview and survey findings. The author/researcher used two self-developed data collection instrument to address the research question: (1) the Expert Nursing Practice Questionnaire (ENPQ) and (2) a semi-structured interview protocol titled the Development of Expert Performance in Nursing (DEPN). Descriptive statistics were used to summarize and examine responses to the open-ended questions on the ENPQ. Findings indicate the developmental importance of risk taking, deliberate practice, social models/mentors, and recognition. These results help inform nurses in staff development on processes and programs that enhance staff clinical practice development.

Knowledge

McCaffery and Robinson (2002) discovered that nurses with advanced degrees and more than 15 years of experience were more likely to have higher scores on the pain knowledge and attitudes survey. The purpose of their survey was to provide individuals with a tool for self-evaluation of knowledge about pain management, and provide educators with information to help them set education priorities. Nurses were invited to take part of an online survey published in the January issue of *Nursing2002*. A total of 3,282 individuals responded to the survey questions on pain knowledge and attitudes. The average survey respondent was a 41-year-old female RN with about 10 years' experience working as a medical/surgical nurse in a small-town or urban hospital. In order to achieve a passing score, the respondents must answer 80% of the questions on the survey correctly. Only 129 (3.9%) answered all of the questions correctly. The average participant got 11 of 15 questions correct (73.3%). Only 42.2% of the respondents scored 80% or more, meaning that more than half of the respondents did not

achieve a passing score. Older nurses and those with more years of experience scored higher than younger nurses and those with less experience. Respondents most likely to answer questions correctly were nurses with a master's degree, those who practiced in a hospice or oncology setting, and those who have more years of experience. Based on the findings of this study the conclusion can be made that the greatest need for education appears to be staff nurses working in medical/surgical nursing in a hospital setting with less than five years' experience.

It is well documented that pain assessment and pain management are fundamental parts of the nursing care provided to patients. In a cross-sectional study conducted by Rahimi-Madiseh, Tavakol, and Dennick, (2010), the researchers sought to quantify the current knowledge and attitudes toward pain of nursing students in Iran. They used a well-validated questionnaire entitled the Knowledge and Attitudes Survey Regarding Pain (KASRP). A total of 146 nursing students participated in the survey. The mean age was 22.4 years and the typical student was enrolled in the BS degree program. The groups mean score was 37% correct, no student answered 60% of the items correctly and only 4.8% of the students answered at least 50% of the items correctly. The results showed severe knowledge deficit relating to pain and pain management. The study raised the argument that there is a real need for improving the content of pain and management in the undergraduate nursing education curriculum.

A study was conducted by Stolee et al. (2007) to explore pain assessment and management issues in geriatric psychiatry. Seventy-four staff members of a geriatric psychiatry service in Ontario participated in a self-administered, paper-based, and anonymous survey to assess current pain assessment and management practice, and to

identify indicators used to assess pain in the geriatric psychiatric population. Using SPSS, means, SDs, and frequencies were calculated for all survey questions (Stolee et al., 2007). The majority of survey respondents (91.8%) agreed that pain assessment and management could be improved for patients; only 14.9% reported that there was a consistent approach to pain management (Stolee et al., 2007) The findings highlighted the need for comprehensive, practical, and consistent approach to pain assessment and pain management, and provide insight into the critical components, including behavioral indicators, that could be incorporated into a pain protocol to be used with this population (Stolee et al., 2007).

A study conducted by Wilson (2007) found that post-education programs contribute to the increase of knowledge, but the working environment influences the development of this knowledge. Wilson (2007) administered a survey of 20 true/false statements to measure the knowledge base of two groups of nurses. Eighty-six percent of nurses who questionnaires were distributed to responded to the survey; 37 were general nurses and 35 were hospice/oncology nurses. Data was analyzed using SPSS. The study determined that nurses who were specialists had a more comprehensive knowledge base than did the general nurses; however, years of experience as a nurse did not appear to have an effect on the outcome of the survey.

A cross-sectional study design, conducted by Zwakhalen, Hamers, Peijnenburg, and Berger (2007), was used to develop a 17-item questionnaire, and to evaluate nursing staff knowledge and beliefs about pain in elderly nursing home patients with dementia. Data were collected in two nursing homes in the Netherlands; the participants included 109 women and 14 men, all participants specialized in the care of elderly nursing home

patients. Because to the author's knowledge, no questionnaire was available to assess nursing staff knowledge and beliefs about pain in the elderly nursing home residents with dementia, a new questionnaire was developed. The responses to statements on participant's knowledge and beliefs about pain in the elderly nursing home residents were examined by calculating percentages of extent of agreement with each statement (Zwakhalen et al., 2007).   Descriptive statistics were generated about the characteristics of the nursing staff. A principal components analysis (PCA) was performed to refine the scale and to investigate its underlying factor structure (Zwakhalen et al., 2007). The study demonstrated a relationship between nurses' level of experience and their knowledge of pain among the elderly. There was also a finding in the responses between regular nursing home staff and a group of trainee pain nurse specialists. As part of their training to become pain nurse specialists, these individuals were more exposed to palliative care, and tended to have different beliefs and higher levels of knowledge about pain treatment. Findings show that educational level seems to influence nursing staff beliefs and knowledge about pain in elderly nursing home patients with dementia (Zwakhalen et al., 2007).

A prospective questionnaire survey conducted by Matthew, Matthew, and Singhi, (2011) investigated nurses' knowledge, sensitivity, and attitudes about pain in children and its management. Children who are in critical care settings undergo more painful procedures than children on general units (Matthew et al., 2011). The survey was carried out in a tertiary care teaching hospital in a developing country, and included nursing staff from three pediatric/neonatal intensive care units. Data was analyzed using descriptive statistics and logistic regression. Shockingly, 50% of the respondents felt that infants

perceive pain less than that of an adult, and the use of local anesthetics and judicious use of sedatives were not common practice, as distraction was the most common modality used to facilitate painful procedures. The findings concluded that pain management practices needed to be improved with better training for better quality of pain management.

Al-Shaer et al. (2011) conducted a study using a non-experimental, descriptive design, with a convenience sample of 129 registered nurses from 10 separate nursing units in a Midwestern hospital located in the United States. The study utilized a modified version of the Knowledge and Attitudes Survey Regarding Pain (KASRP). Data was analyzed with descriptive statistics utilizing SPSS version 14.0. As with similar studies, this one concludes that nurses continue to demonstrate inadequate knowledge of pain assessment and pain management interventions. No statistical differences existed in knowledge scores with respect to shift worked, work status, age, category, or total years of nursing practice.

A prospective comparative study design using two convenience samples was conducted by Matthew and Malcom (2007) to conclude whether registered nurses working in an orthopedic area, whose pain management knowledge improved after completing knowledge and competency training, demonstrated better general knowledge and better attitudes when compared with registered nurses from a range of clinical backgrounds. The validated tool to collect data was the Nurses' Knowledge and Attitudes Survey Regarding Pain tool, and data was analyzed with the help of a statistician from ORECNI. One hundred and thirteen registered nurses participated in the survey. Group One included 65 registered nurses from the orthopedic area and Group

Two included 48 registered nurses from various clinical backgrounds. The mean score of correct responses from the total group (*n=113)* was 25.06 (73.8%). Group One achieved mean score of 26.26 (75%) and Group Two achieve a mean score of 25.42 (72.6%). Passing score according to McCaffery and Robinson (2002) is 80%. Findings from this study were consistent with findings of like studies regarding deficits in nurse's knowledge and attitudes in clinical practice regarding pain management.

A descriptive study using a modified version of McCaffery and Ferrell's Knowledge and Attitudes Survey Regarding Pain (2008) concluded that nurses require ongoing education on pain. The study was conducted by Lewthwaite et al. (2011) in a urban tertiary care hospital in Midwestern Canada with 324 nurses returning surveys out of the 761 surveys that were sent out for response (43% response rate). Ninety-three percent of the respondents were female, the mean age was 42 years old, and 58% were diploma prepared, 42% held bachelor's degrees or master's degrees. The nurses worked in a variety of areas but the majority (68%) reported working in surgery. The mean score of the survey was 79% with a range of 40.9% to 100%; 48.8% scored 80% or higher on the survey. SPSS, version 14, was used for data analysis. Using the Mann-Whitney U test for significance, the test showed that bachelor's- and master's-prepared nurses achieved significantly higher scores when compared with diploma-prepared nurses. Lewthwaite et al. (2011) concluded that pain management is a continuing challenge in all healthcare facilities. Research has identified that pharmacology is an area that nurse lack knowledge, but even with the acknowledgement that education is a key aspect that needs to be improved, that alone will not raise the bar (p. 256).

In a study conducted by Pliasance and Logan (2006) researchers investigated nursing students' knowledge and attitudes about pain management. This descriptive cross-sectional study explored nursing students' knowledge and attitudes about pain management. The Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP) was used to collect data from clinical nursing students. The sample (*n=313)* was obtained for approximately one-fourth of the baccalaureate of science in nursing and associate degree in nursing programs in Louisiana.

The study revealed misconceptions about analgesics administration and duration, along with an exaggerated fear about the incidence of addiction among patients. The students did better in pharmacology items than non-pharmacology items. Most students responded appropriately to scenario-based questions. However, when the situation required reassessment based on a patient's response, the students' chosen intervention was more often incorrect. The students in the baccalaureate program scored a bit higher (65% correct) than those in the associate degree program (60.8% correct) (t [311] = -3.321, p = .001). Their combined score was 64% indicating inadequate knowledge of pain management. The authors concluded that despite major initiatives by accrediting agencies, statewide pain initiatives, and professional organizations, knowledge of pain management remain sub-par. Nursing instructors and directors need to critically analyze their curriculum to determine whether students are being taught in-depth and up-to-date pain management information that includes evidence based research and current standards of care.

Surgical patients routinely experience pain, either as a preoperative symptom or as a direct result of surgery, according to Burns et al. (2010). Patients' feedback about

their perianesthesia experience at an acute care 609-bed teaching hospital in Washington, DC, indicated that pain management was an area in need of improvement.   A non-experimental descriptive study related to pain management was conducted in the perianesthesia areas to assess knowledge and attitudes of health care providers. McCaffery's and Ferrell's Knowledge and Attitudes Regarding Pain Management Survey(2008) was given to providers (*(n=138)*, with 72 responding, yielding a 52% response rate. The overall mean score, 72.25%, was low, indicating that future research to develop a pain management knowledge and attitudes tool that evaluates current perianesthesia practices.

Attitudes

A Finnish research study investigated nurse's attitudes and perceptions of pain assessment in neonatal intensive care and the demographic factors related to these attitudes and perceptions of pain. Polkki et al. (2010) recruited 257 nurses from Finland's five university hospitals that care for premature infants receiving intensive care or monitoring to take part in the survey. A structured questionnaire that consisted of two sections, was mailed to the ward sisters and then forwarded to the nurses participating in the study. The response rate was 71%. Descriptive statistics were used to summarize the demographic characteristics of the nurses and their attitudes and perceptions of pain assessment in neonatal intensive care. The findings indicated that almost all (97%) of the nurses agreed that pain assessment in premature infants is important; however, 60% of the respondents agreed that they could assess the premature infants pain reliably without pain scores. One fourth of the participants were unaware that a premature infant could be more sensitive in sensing pain than a full term infant. The study concluded that there is a

need to develop systematic and evidenced-based guidelines for pain assessment practices in neonatal units. It will also be beneficial to arrange pain assessment education for healthcare providers and test the efficiency of the program on pediatric patients' care.

A pre- and post-test deign study conducted by McMillan, Tittle, Hagan, and Small (2005) to determine the changes in knowledge and attitudes of pain resources nurses (PRNS) as a result of an intensive pain management course. Eighteen RN's from multiple units at a Veterans Administration Hospital in the southeastern United States were tested before and after participating in a 32-hour intensive pain management course. The test utilized was the Pain Management Principles Knowledge Test (PMPKT) and the Nurses 'Attitude Survey. The pre-test knowledge scores were close to passing at 67% but after undergoing the intensive pain management course scores showed significant improvement (p <0.001) by increasing to 80%. Scores on measurement of attitudes towards patients in pain were low with a mean score of 66.6% and did not show a marked improvement post-test with a post-test mean of 69.3%. The findings concluded that improvement in scores supported the effectiveness of the intensive pain management course and the researchers recommend that courses like this should be offered in other settings to encourage practicing nurses to prove better care to patients in pain.

It has been suggested that nursing attitudes and beliefs contribute to and affect the overall outcome of patient care in acute care settings. A study conducted by Young, Horton, and Davidhizar (2006) sought to determine if nurses' attitudes towards pain assessment tools and the relationship of the attitudes to education and experience. Young et al. (2006) used an open ended questionnaire developed for this study, which was based on Fishbein and Ajzen expectancy-value model. A convenience sample of 52 nurses on

an acute care unit ward was asked: (1) What do you believe about the assessment of pain? (2) What do you believe about the use of pain assessment tools? (3) What do you believe about the use of pain assessment tools in improving the patient's outcome? The nurses then rated their attitudes about how each belief made them feel. Nurses' attitudes towards pain assessment ranged from somewhat negative to very positive, but they generally held somewhat positive attitudes about the use of pain management tools to improve patient outcomes. Fishbein and Ajzen's formula was used to calculate attitudes, with scores ranging from -6 to 28 with an overall mean score of +8.3. Data suggested that an increase in years of experience did not relate to a positive outlook on the use of pain assessment tools and their benefit for patient outcomes. The authors concluded that the Fishbein and Ajzen model proves a useful way to obtain information on the attitude of nurses towards the uses of pain assessment instruments. In order to provide further information, this study should be conducted with an open-ended instrument, should be followed with a fixed-response survey with a larger sample size and in various settings.

It is known that knowledge deficits and attitudinal barriers to pain management exist, but research has not determined why such attitudes exist and how they may be addressed in medical and nursing criteria (Lasch et al., 2002). A qualitative study conducted by Lasch, et al. (2002), explored the beliefs and attitudes towards pain and cancer pain management held by medical and nursing students and faculty who participated in the Cancer Education Module for the Management of Pain (CEMMP) project. The researchers used purposive sampling and conducted a series of in-depth interviews, focus groups and observations of students, faculty, and administrators of nursing and medical schools and residency programs. The interview, focus group, and

observation data were tape-recorded, transcribed, and entered into a computer program, Folio Views, which is designed to facilitate the storage, coding, and analysis of qualitative data (p. 60). The Principal Investigator (PI) of the study, in collaboration with two research assistants, developed a coding scheme that included codes for both demographic information and thematic trends in the data (Lasch et al., 2002). Three principal themes Lasch et al. (2002) identified from the analysis of the data: (1) the prioritization of pain, (2) informants knowledge of pain, and (3) the meaning(s) of pain. Themes in prioritization included the importance of learning about pain versus cancer pain, and the responsibility of primary care providers versus specialists for pain and cancer pain management. Themes in informants' knowledge of pain included knowledge deficits about medications and adjunct therapies and the presence of pain management in the curriculum, and the role of knowledgeable faculty members and mentors in the dissemination of information about pain management. Themes in the meanings informants' assigned to pain included opioidphobia, and the (inter-)subjectivity of pain. An all-important implication of this study is that faculty and students will likely bring their misconceptions and biases about the meaning of pain and addiction into their interaction with patients unless they receive education to the contrary.

Perceived Barriers in Pain Management

Barriers exist to effective pain management by both the healthcare providers and the patients. Pain is defined by the individuals who are experiencing it (Pasero & McCaffery, 2001). Wells et al. (2008), reported in the Agency for Health Care Policy and Research guide for acute pain management, the single most reliable indicator of the existence and intensity of pain is patient self-reports. In a report by Pasero and

McCaffery (2001), the authors responded this question "To comply with the pain treatment standard of the JCAHO, my hospital's health care providers are required to use the 0 to 10 pain rating scale to assess patient's pain. We have been told to believe what the patient says, but sometimes I don't. Do I have to provide pain relief when I don't believe the patient's report?" Pasero and McCaffery (2001) responded by stating that personal opinions do not determine clinical practice. The JCAHO and AHCPR standards for pain management state that all patients have the right to appropriate pain management. The authors conceded that there may be a few patients who are addicts or malingers, by adhering to the standards it ensures that everyone who has pain receives the best possible management. Healthcare professionals do not have the right to deprive a patient of appropriate treatment simply because they believe that the patient is lying. Barriers to adequate pain management in the older adult arise from three major sources: the patient, the health care community, and society at large. Patients, families, and health care professionals hold strong personal beliefs and fears about the meaning of pain and pain treatment options. Some of the barriers that could potentially interfere with pain management include: lack of appropriate education regarding pain assessment and management, concern regarding regulatory scrutiny, fear of opioid related side-effects, time, and cultural biases regarding opioid use (Hanks-Bell, Halvey, & Paice, 2004).

Pain is a common and treatable condition among intensive care patients. Quality care of these patients depends on the pain knowledge and pain management skills of critical care nurses. The top barrier to managing pain identified by a group of nurses was physicians not prescribing the proper medication, according to a cross-sectional study conducted by Wang and Tsai (2010). Three hundred and seventy intensive care unit

nurses were recruited from 16 hospitals chosen by stratified sampling across Taiwan. Data was collected on a Taiwanese version of the Nurses' Knowledge and Attitudes Survey and a scale designed by the researcher on perceived barriers to pain management. The overall correct response rate for the knowledge scale was 53.4%, indicating poor knowledge of pain management. Regarding perceived pain barriers, the mean item ratings indicated that the major barriers originated from three sources: nurses themselves, patients and their family, and government and hospital policies. Drawing from the study results the authors recommend that intensive care unit nurses should be provided with ongoing pain management courses.

Pain is the most common complaint in the emergency department, according to Tsai, Tsai, Chien, and Lin (2007), who conducted a research study on 249 nurses recruited from nine hospitals chosen by stratified sampling across Taiwan. Data was collected using a Taiwanese version of the Nurses' Knowledge and Attitudes Survey and a scale to assess perceived barriers to pain management. The top barrier to managing pain was identified as the responsibility of caring for other acutely ill patients in addition to a patient with pain. The overall average rate for the knowledge scale was 49.2%, indicating that the participants had a poor knowledge of pain management. The results indicate an urgent need to strengthen pain education for emergency nurses in Taiwan, in particular by emphasizing the analysis and integration of data from clinical pain assessments, and by targeting barriers to changing pain management approaches.

Nursing education could be considered a barrier to effective pain management. In a study conducted by Goodrich (2006), students in a baccalaureate nursing program in central Virginia were surveyed using McCaffery's Pain Knowledge and Attitude Survey

at the beginning and end of each semester for two academic years. Faculty also completed the survey and answered open-ended questions pertaining to the inclusion of pain management into the curriculum. The purpose of this study was to determine the baseline knowledge and attitudes of nursing students about the science of pain management, and to evaluate the content of pain management material and the extent to which its integrated into the curriculum. Student's achieved scores of 100% in five categories, but deficiencies were documented in evaluating respiratory depression and related assessment parameters, calculation of analgesic equivalents, understanding the concept of the analgesic ceiling of specific opioids, and differentiating addiction from tolerance and physical dependence. Faculty surveys identified strengths in the area of patient assessment and drug therapy. Areas needing improvement included knowledge about the ceiling effects of opioids and differentiating addiction from tolerance and physical dependence. Recommendations to modify the current curriculum includes the development of a matrix in which faculty will document pain management objectives, techniques for integrating pain concepts into course content, and methods of testing.

Summary

The purposes of this review of literature are multiple: to assess the current knowledge and attitudes of nurses within the target population, to provide empirical evidence of nurses' assessment and documentation behaviors prior to an intervention designed to address real and potential knowledge and attitude deficits, to assess the effectiveness of the intervention in terms of changes in knowledge and frequency of documentations and finally, to provide evidence of personal and systematic barriers to effective pain management.

The review of the literature illustrated Patricia Benner's Novice to Expert Model as an appropriate framework for this study. In addition, the literature provided the current state of knowledge regarding pain pathophysiology, the pharmacologic management of pain, barriers to effective pain management and inadequate pain management documentation.

The review of current literature regarding pain and pain management found barriers to effective pain management can interfere with appropriate pain management. The barriers may be healthcare provider or patient related (Pasero & McCaffery, 2001). Patient related barriers include fear of addiction or tolerance, aversion to side- effects, or an ingrained belief that taking pain medication is "bad or poisonous" (Ferrell, McCaffery, & Rhiner, 1992). Some healthcare identified barriers included: nursing fears of over sedating patients or suppressing respirations, general lack of knowledge regarding pain management or pain medications, and a bias that patients may not be accurate with their pain intensity ratings (Pasero & McCaffery, 2001; Ferrell et al.,1992; McMillian et al., 2000; Rushton, Eggert, & Sutherland, 2003).

In addition to barriers to appropriate pain management there is also a concern identified in the literature review regarding inadequate pain management documentation by nurses. The Joint Commission (TJC) has identified deficits in nursing documentation as well as other professional and regulatory organizations (TJC, 2012).

There have been several attempts identified in the literature review to determine the most effective way to educate nurses regarding pain management. The studies reviewed have met with mixed results, with good short term improvement, but no long

lasting effects (Sternman, Gauker, & Krieger, 2003; Cleary, 2002; Howell, Bulter,

Vincent, Watt-Watson, & Sterns, 2000; Alley, 2001).

Chapter III

Methodology

The purpose of the research study was to explore and compare knowledge and attitudes of nurses towards pain management. These nurses worked in various areas of practice. This chapter presents the methodology that was used to address the research questions for this study. The research design, setting, population and sampling plan, protection of human subjects, instruments, procedures, and data analysis plan are also discussed. The results of this study have the potential to improve the quality of patient care by providing a cross-sectional view of pain knowledge and attitudes of nurses who are involved in direct patient care.

Implementation and Design

This quantitative research study utilized a descriptive and correlational study design to examine demographic variables, knowledge of pain and pain management, and attitudes of nurses towards pain management. A cross-sectional sample of registered nurses that work in a variety of practice settings participated in the study.

Setting

An invitation to participate in the study was posted on an internet social networking site, requesting interested candidates to respond to the researcher with a valid email address. The link to the survey was emailed to potential respondents using a secure network. Registered nurses from the Piedmont Region of North Carolina and the Upstate of South Carolina were invited to participate in the survey. The link provided access to the demographic survey, the Knowledge and Attitudes Survey Regarding Pain, and the informed consent form. The participants had from August 16, 2012 through September

15, 2102 to respond to the survey. One hundred and eight emails were sent out and 56

participants completed the surveys (52%). Fifty of these surveys were usable.

Sample

For the purposes of this study, the targeted population was professional registered

nurses who have met educational requirements to currently practice, who are employed in

various practice areas, and live or work in the Piedmont Region of North Carolina and the

Upstate of South Carolina.

Protection of Human Subjects

Prior to conducting the study, approval was acquired by the Institutional Review

Board (IRB) committee of the university. The researcher provided contact information to

each participant in the event of questions regarding participation in the survey.

Participants were assured of anonymity in joining the study and were informed of its

voluntary participation. Each participant was provided written copy of the informed

consent related to this study and completion of the questionnaire served as consent to

participate (Appendix B). All surveys returned were anonymous in nature, therefore

protecting the identity of the participant. All potential participants were informed that

responses would be anonymous with data reported only in the aggregate. There were no

risks involved with this survey.

Instruments

A well validated self-reported questionnaire entitled the 'Knowledge and

Attitudes Survey Regarding Pain" (KASRP)(2008) was the instrument used in this survey

to collect data. The KASRP is a self-administered test with 38 items. Of these, 22 are

true and false, 16 multiple-choice items. The last two items have a two-part statement to

the patient care scenarios that require the participant to assess and reassess a patient. This resulted in a total of 40 responses. The questionnaire was designed to test pain management knowledge and attitudes regarding characteristics of pain management, pharmacology, addiction, physical dependence, tolerance, and principals of assessment and management. (Appendix C)

Respondents were asked to complete a demographics survey that provided information about: number of years practicing as a nurse, current area of practice, age, gender, and educational background. (Appendix D).

The KASRP was chosen as it clearly distinguishes between knowledge deficits and attitudinal barriers in pain management, which made it appropriate for the evaluation. Ferrell and McCaffery (2008) suggested not distinguishing between items as measuring either knowledge or attitudes. The authors originally developed this tool in 1987, and it has been used in several stings over the years to assess nurses' knowledge and attitudes related to pain. The tool was revised in April, 2008 and tested in pain education courses (Ferrell & McCaffery, 2008).

The KASRP was established by review of pain experts and content derived from current standards of pain management such as those of the American Pain Society and the World Health Organization (WHO). 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 *r*>.70) with items reflecting both knowledge and attitude domains (Ferrell and McCaffery, 2008).

Written permission to use the tool was received from the authors, Betty R. Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN. Copies of the instrument and of the permission to duplicate the tool for any purpose and use the instrument are provided in Appendix E and Appendix F.

Data Analysis

Once the anonymous questionnaires were returned to the investigator, each individual questionnaire was assigned a unique identification number and the data was entered into a personal computer using the Statistical Package for Social Sciences (Version 18) for calculation of results. Data analysis was intended to include frequency tables, *t-tests,* and Analysis of Variance (ANOVA) results. Descriptive statistics were collected for all participants who returned a completed demographics form and KASRP questionnaire. Results are available for any participants who are interested in obtaining them.

Summary

The purpose of the research study was to explore and compare knowledge and attitudes of nurses towards pain management. These nurses work in various areas of practice**.** The investigator used a quantitative approach of descriptive research, and a correlational study design to examine the demographic data and the actual knowledge of registered nurse who practice in a variety of acute care settings. Data collected during this study will evaluate the knowledge and attitudes of nurses towards pain management,

and will presumptively assist in determining if nurses are accurately assessing pain in a growing subgroup of the acute healthcare population.

Chapter IV

Results

The purpose of this study was to investigate the knowledge and attitudes towards pain and pain management of practicing registered nurses who work in various practice areas. A comparison was conducted between correctly answered questionnaire items and the educational background, area of practice, and years of experience of the participants. The participants were all professional registered nurses who had met educational requirements to currently practice, who are employed in various practice areas, and live or work in the Piedmont Region of North Carolina and the Upstate of South Carolina.

Sample Characteristics

Fifty (*n*=50) currently practicing registered nurses participated in the study. Participation was invited through posting a notice on an internet social networking site, requesting interested candidates to respond to the researcher with a valid email address. One hundred eight respondents replied to the request. A total of 108 questionnaires were emailed to potential participants and a total of 56 (52%) completed surveys were returned to the investigator by the deadline date of September 15, 2012. Six questionnaires were eliminated from the sample because of incomplete information on the questionnaires. Nurses who participated in the study ranged in age from 26 years to 62 years of age respectively with a mean age of 44.44 (*SD*=9.786). Forty-three females (86%) and seven males (14%) participated in this study.

Most of the RN's in this study held an associate degree (ADN) in nursing: 42%, *n*=21 were ADN-prepared; 36%, *n*=18 held a baccalaureate (BSN) degree; 6%; *n*=3 graduated from a diploma nursing program; and 16%, *n*=8 were masters prepared nurses

(MSN). Nurses from a variety of practice areas responded to the survey. These areas included: critical care, emergency department, medical-surgical, oncology, pediatric, renal, surgical services, and critical care step-down units. The majority of the participant's current area of practice was the emergency department (36%) (*n*=18). Participants had an average of 16.62 years of professional work experience (*SD*=10.158). Years of professional work experience ranged from 1 year to 41 years, 36% of the respondents had 20 years or greater of professional experience and 38% had 10 years or less of professional experience.

Major Findings

The intent of this study was to determine Registered Nurses level of knowledge regarding pain and pain management and attitudes regarding pain and pain management. The questionnaire used in this study, the KASRP, consisted of 40 questions regarding nurse's knowledge and attitudes regarding pain management. The KASRP consisted of 22 true and false questions and 18 multiple choice questions. McCaffery and Pasero (1999) indicated that a score of 80% is the minimal acceptable score on the KASRP questionnaire. Ferrell and McCaffery (2008) suggest avoiding distinguishing items as measuring either knowledge or attitudes. Many items such as one measuring the incidence of addiction really measures both knowledge and attitude about addiction. Therefore, they 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, they have found it very helpful to isolate those items with the least number of correct responses and those items with the best scores. Therefore, survey scores were

reported as the percentage of correct responses; cumulative scores ranged from 45% to 100%. Table 1 and Table 2 illustrate the descriptive statistics for the KASRP test scores.

Table 1

Means and Standard Deviations for Test Scores on the KASRP

Variable	N	Mean	Median	Standard Deviation
KASRP Test Score	50	70.25	72.5	13.01

Table 2

Frequency and Percentage of Test Scores on the KASRP

Test Score	Frequency	Percent
45.0	2	4.0
50.0	3	6.0
52.5	3	6.0
55.0	2	4.0
57.5	3	6.0
62.5	1	2.0
65.0	1	2.0
67.5	3	6.0
70.0	3	6.0
72.5	5	10.0
75.0	8	16.0
77.5	7	14.0
80.0	3	6.0
82.5	2	4.0
90.0	1	2.0
95.0	1	2.0
97.5	1	2.0
100.0	1	2.0

A one sample t-test was conducted on the KASRP scores to evaluate whether their mean was significantly different from 80, the lowest acceptable score. The sample mean of 70.25 (SD = 13.01) was significantly different from 80 (t (49) = -5.296 , $p <$ .05). The 95% confidence interval for the KASRP mean ranged from 73.94 to 66.55.

The results support the conclusion that nurses are not knowledgeable regarding pain and pain management.

The survey questions, frequency of the top five correct responses to the true false portion of the questionnaire and the percentage of participants who answered those items correctly, can be found in Table 3. Questions 1,3,4,7,12,13,14,15,16,17,20, and 22 were answered correctly 80% of the time or greater; questions 15 and 16 were answered correctly 100% of the time. Table 4 illustrates the top five most frequently incorrect responses to the true false portion of the questionnaire. Question 9 was answered incorrectly 84% of the time, making it the most missed question on the questionnaire. This question addressed the perception that use of promethazine or hydroxyzine reliably potentiates opioid analgesics. According to McCaffery and Robinson (2002), promethazine neither relieves pain nor potentiates opioid analgesics. It is possible that due to the side-effect of sedation often experienced with promethazine and hydroxyzine, nurses confuse the sedative effect with analgesia. Question 18 was the second most incorrectly answered question, only 32% of the participants knew that Vicodin 5/500 mg is approximately equal to the analgesic effect of 5-10 mg of oral morphine.

Nurses' knowledge and attitudes towards addiction and dependence were a challenge on the survey for many of the participants. Thirty-eight percent (n=19) felt that opioids should not be used in patients with a history of substance abuse. Forty-eight percent (n=24) felt that patients who develop pain already have a drug or alcohol abuse problem. Question 36 asked for the signs of physical dependence that manifest after abrupt discontinuation of an opioid, less than half the participants (42%) answered correctly. In contrast, nurses did comparably well on question 1, 3, 4, 12, 13, 14, 15, 22,

29, 31, 32, the average cumulative percentage of these questions being answered

correctly was 94.8%.

Table 3

Five Most Frequent Correctly Answered True/False Questions on the KASRP

Test Questions	Frequency	% Correct
7. Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side–effects than using a single analgesic agent.	49	98
13. Patients should be encouraged to endure as much pain as possible before using an opioid.	48	96
15. Patients' spiritual beliefs may lead them to think pain and suffering are necessary.	100	50
16. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patients' response.	50	100
22. Narcotic/opioid addiction is defined as a chronic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, continued use despite harm, and craving.	48	96

Table 4

Five Most Frequent Incorrectly Answered True/False Questions on the KASRP

Test Questions	Frequency	% Correct
5. Aspirin and other non-steroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	22	44
9. Research shows that promethazine (Phenergan) and Hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.	8	16
11. Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).	23	46
18. Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5 – 10 mg of morphine PO.	16	32
19. 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 the pain.	23	46

The majority of the items of the KASRP are pharmacology-based questions, which are important in the management of pain. Unfortunately, the questionnaire results indicated that the nurses' knowledge of pain management was poor, especially in the area of pharmacology. The four most correctly answered multiple choice questions were associated with assessment (Table 5) whereas, the four most frequently missed multiple choice questions were related to opioid use and addiction (Table 6).

Table 5

Four Most Frequent Correctly Answered Multiple Choice Questions on the KASRP

Test Questions	Frequency	% Correct
24. The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset, such as trauma or postoperative pain is:	45	90
29. The most likely reason a patient with pain would request increased doses of pain medication is:	48	96
31. The most accurate judge of the intensity of the patient's pain is:	49	98
32. Which of the following describes the best approach for cultural consideration in caring for patient's pain:	48	96

Table 6

Four Most Frequently Incorrectly Answered Multiple Choice Questions on the KASRP

Test Questions	Frequency	% Correct
23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is:	27	54
28. A patient with persistent cancer pain has been receiving daily Opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hr. intravenously. Today he has been receiving 250 mg/hr. intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of a new comorbidity is:	17	34
33. How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem:	26	52
36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:	21	42

Two patient case studies were used to explore implied knowledge for making decisions regarding assessment data and interventions. The case vignettes present two patients, both 25 years old and both on their first day following abdominal surgery. Patient (A)-Andrew and Patient (B)-Robert both have vital signs that are within normal parameters and they both verbally report their pain intensity as 8 out of 10 when assessed by the nurse. The two patients are comparable and the only difference noted between them is their expressed behavior. The first patient, Andrew, smiles and jokes with his visitor when the nurse enters his room to assess his pain, whereas, the second patient, Robert, is lying quietly and grimaces as turns in his bed when the nurse goes into his room. In the first case study, 86 (*n* = 43) of the participants documented the patient's

stated rating correctly as 8 on a scale from 0 to 10. In the second case, 47 (94%) of nurses marked the patient's stated rating correctly as 8 on the scale. Only 20 (40%) and 29 (58%) marked that they would 'administer morphine 3 mg IV now' on the basis of assessment data in the first and second case (Table 7). Fear of causing respiratory depression is a major cause of under treatment of pain (McCaffery & Robinson, 2002). This finding indicated indifference between assessment and intervention. In most instances the patient received less than the recommended dose of an analgesic. Opioids are safe when used appropriately, and, in the majority of cases, highly effective. Unfortunately, a misconception regarding their use leads to significant stigmatization and resultant under-treatment (Hanks-Bell et al., 2004). Almost 25 years after the WHO published its guidelines on cancer pain, nearly one of two patients with cancer pain remains undertreated. Under-treatment is often attributed to an inadequate use of opioids for reasons conceptualized as barriers in the health care system, among health care providers, and/or with the patient and their family (Colleau, 2009).

Table 7

Frequency and Percent of Case Study Questions Answered Correctly on the KASRP

Test Questions	Frequency	% Correct
37. Case study Patient A- Part A:	43	86
38. Case study Patient A- Part B:	20	40
39. Case study Patient B- Part A:	47	94
40. Case study Patient B- Part B:	29	58

Cumulative scores were calculated to determine if any trends could be identified when comparing test scores in areas of practice, educational background, and years practicing as a nurse. Nurses from the critical care areas had the most passing scores, five nurses passed with a score of 80% or greater, but the average cumulative score of critical care was 77% (n=15). The average cumulative score for the other areas surveyed are as follows: emergency department 73.75% (n=18), medical-surgical department 67.8% (n=8), oncology 72.5% (n=1), pediatrics 52.5% (n=1), renal 52.5% (n=1), surgical services 60% (n=3), and telemetry step-down unit 65% (n=2).

Only marginal differences existed between educational backgrounds when averaging test scores of the various educational programs that the nurses surveyed graduated from. Masters prepared nurses had the highest cumulative score at 75% (n=8), bachelor prepared nurses had a cumulative score of 70.83 (n=18), associate degree nurses 68.57% (n=21), and diploma nurses 67.5% (n=3). The majority of the nurses scoring greater than 80% were associate degree nurses but the highest scoring nurses were bachelor prepared nurses. An Analysis of Variance (ANOVA) was conducted to determine if there was a difference in the pain management knowledge and attitudes of registered nurses based on educational backgrounds. The result of this statistical test, F (49) = .425, p = .736, indicated that there were no statistically significant differences between KASRP test scores based on educational backgrounds.

Further evaluation using the demographic components, 'years of practice as a nurse' and 'age of respondent', was calculated in the interest of a possible relation to knowledge and attitudes towards pain and pain management, the results are revealed in Table 10. The results of the statistical analysis (r = .-215; p = .135) revealed that there

was no significant relationship found between the number of years of practice as a professional registered nurse and knowledge and attitudes towards pain and pain management. However, the results of the statistical analysis did show a significant correlation between age of the respondents and test scores (r = .746; p= 0.01).

Table 8

Correlations

		Test Score	Years practicing nursing	Age of Respondent
Test Score	Pearson Correlation	1	-.215	.095
	Sig. (2-tailed)		.135	.512
	N	50	50	50
Years practicing nursing	Pearson Correlation	-215	1	.746[**]
	Sig. (2-tailed)	.135		.000
	N	50	50	50
Age of Respondent	Pearson Correlation	.095	.746[*]	1
	Sig. (2-tailed)	.512	.000	
	N	50	50	50

**Correlation is significant at the 0.01 level (2-tailed).

Summary

The results of the data suggest that there is a significant deficit of the knowledge of nurses in regards to pain management. The study elicited information about knowledge of pain and pain management, particularly in regards to pharmacology which was tested in relation to analgesic types, dosages and side-effects. The study finding support concerns already identified in the literature that some nurses have a knowledge deficit of pharmacology and inadequate pain assessment skills.

Chapter V

Discussion

The purpose of this study was to explore nurses' knowledge and attitudes regarding pain management. This was achieved by addressing two questions: (1) What is the level of Registered Nurses knowledge regarding pain and pain management? (2) What is the attitude of Registered Nurses regarding pain and pain management? This study utilized a convenience sample of registered nurses who completed a knowledge and attitudes survey tools, and a demographic data form. This study was indicated to provide a basic framework of knowledge deficits and attitudes present among registered nurses regarding pain management. This chapter presents a discussion of the findings and the limitations of the study, the implications for nursing practice, and recommendations for further research.

Implication of Findings

Data analysis revealed various responses overall in the actual knowledge of pain management nurses caring for patients. Findings in the mean scores of actual, accurate and current knowledge of pain, and pain management suggests that there is a gap in the understanding of pharmacology related to pain management, as well as deficits in knowledge related to addiction and substance abuse. The minimum 80% score set by the authors of the KASRP was not met 82% of the time. Deficits in knowledge were particularly evident in the areas of analgesic dosing, analgesic ceiling of opioids, and discerning addiction from tolerance and physical dependence.

Test scores indicated that attitudes of nurses who participated in this study were marginally more favorable towards pain management. Nurses scored higher on survey

questions in relation to physiology and planning. These were assessment based questions and could be indicative of the higher number of critical care nurses who responded to the survey. If the pain knowledge and attitude survey reflects knowledge about pain assessment, medication considerations, and pain management, it is imperative that facilities that employ nurses take a strategic approach to educating nursing about pain and pain related issues.

Application to Theoretical/Conceptual Framework

Benner's (1984) Novice to Expert model provides a guide for directing future research in the area of evaluating nurse's knowledge and attitudes regarding pain and pain management. Benner adapted the Dreyfus model of skill acquisition to the nursing context. This model described five levels of skill acquisition and development: novice, advanced beginner, competent, proficient, and expert (Benner, 2001).

Theory of nursing encompasses both medical and nursing scientific knowledge that has been imparted to the trainee and the rules that are largely acquired during on-the-job training and experience. The practice of nursing refers to the actual on-the-job behavior of experienced nurses considered to be experts by their peers (Benner et al., 2009). Clinical judgment is necessary in order to appropriately assess and manage patients in an acute care setting. Nursing is practiced in real life situations with real world constraints, possibilities and resources. Certain environments may influence the individual's ability to respond effectively. As nurses accrue clinical knowledge over time through experience and the sharing of knowledge with peers, there is a need for documentation of the clinical knowledge. Performance measurements can only be as useful and precise as the competencies selected to be measured (Benner, 2001).

As indicated earlier, the participants had an average of 16.62 years of professional work experience .Years of professional work experience ranged from 1 year to 41 years, 36% of the respondents had 20 years or greater of professional experience and 38% had 10 years of less of professional experience. Earlier correlations indicated that there were no significant relationships between years of professional work experience and test scores, but there was a significant correlation between area of practice and test scores. It is important to note that nurses with certain characteristics had generally practiced for a specified number of years. However, merely practicing for a particular period of time does not guarantee achievement of specific stages. Nurses who worked in critical care areas tended to achieve higher test scores. Higher acuity areas would naturally require nurses to be proficient critical thinkers. According to Benner et al. (2009), nurses who have to turn the conclusions of theory into treatment have to supply this clinical judgment. Clinical judgments, such as maintaining a patient within specified physiological parameters with medications, require experienced-based intuition (p. 8).

The development of clinical understanding ultimately requires integrating historical and clinical understanding in particular situations as well as reasoning in particular transitions (Benner et al., 2009). Caregivers need to engage more and accept that some things are truly subjective and cannot be objectified. Benner et al. (2009) concludes that nursing care is both intensive and extensive. No one nurse can accomplish total care for any patient or family (p. 433). Team work is essential in the care for patients as is clear and concise communication. There is a need for ways of improving the care of specific patient populations by systematically examining common patient

trajectories and how these trajectories correspond with expected critical paths (Benner et al., 2009).

Limitations

Several limitations were identified and may have influenced this study:

1. Due to the small sample size of nurses these findings cannot be generalized to all nursing realms.

2. Cultural influences such as personal experience with pain and pain medication usage was not explored.

3. The inclusion of a second tool to measure attitudes of nurses regarding pain may have given better insight to whether a true knowledge deficit exists of if poor attitudes toward pain and pain management are more problematic.

4. Out of the 108 nurses invited to participate in the survey only 56 responded (52%), the nurses responding to the survey were likely to have a higher level of interest in pain management than those nurses who did not respond to the survey.

Implications for Nursing

Based on this studies review of relevant literature, the need for innovative and effective pain management education for nurses is well documented. It is imperative that all nurses be better educated and be encouraged to be reflective, evidenced-based practitioners (Wilson, 2007). As one of the most trusted professions, nursing has a tremendous responsibility in providing quality care and outcomes. An inadequate knowledge base and limited expertise are barriers to providing patients with the quality outcomes that they expect. The concept of expert nurse remains elusive, and not all

nurses will attain expertise in their practice. The attainment of proficiency is the fourth phase of Benner's theory (1984) and attainment of this phase is crucial for the nurse to understand completely the physiology and reasoning. Banning (2008) suggests that proficient clinical reasoning skills can enhance the quality of nursing practice provided through the precision of decision-making. It is proposed that clinical reasoning centers on the synthesis of specific knowledge forms; empirical, aesthetic, personal and ethical (Banning, 2008; Rew, 2000). Fisherman (2007) feels that pain management as a human right is a moral imperative that will help medicine return to its humanist roots. "Acknowledging this right is a crucial step in reversing the public health crisis of under-treatment of pain" (p. 8). Nurses should recognize knowledge deficits and seek to expand their knowledge base in order to provide safe and ethical care for the patients that they provide care for.

Recommendations

More research is needed regarding nurses' knowledge and attitudes towards pain management. Further research to identify differences between specialty areas could help to determine if some nursing realms would benefit from more education on pain management. Research to assess the impact of educational interventions with nurses on their knowledge and attitudes towards pain and pain management would be needed to measure the impact of continuing education programs. Additional research is needed in various geographical and practice settings to determine if deficits determined in this study are prevalent across settings.

Conclusion

The results of this study indicate that there are serious challenges to adequate pain management. According to the American Nurses Association (ANA), nurses are required to maintain current knowledge in pain assessment and management (ANA, 2001). Nurses have an obligation to provide appropriate pain management, and patients have the right to receive appropriate pain management. The concept that pain is a subjective experience should be emphasized, and nurses should never assume that patients are not accurate when describing their pain intensities and characteristics. Therefore, it is important that nurses prepare themselves with the necessary knowledge, skills and positive attitudes regarding pain and pain management.

References

Al-Shaer, D., Hill, P. D., & Anderson, M. (2011). Nurses' Knowledge and Attitudes

Regarding Pain Assessment and Intervention. *MEDSURG Nursing*, 20(1), 7-11.

Alley, L.G. (2001). The influence of an organizational pain management policy on

nurses' pain management practices. *Oncology Nursing Forum*, 25(5), 867-874

American Geriatrics Society Panel on Persistent Pain in Older Persons, (2002). The

management of persistent pain in older persons. *Journal of American Geriatric*

Society, 50(6), 205-24.

American Nurses Association (ANA) (2001) *Code of ethics for nurses with interpretive*

statements. Silver Springs, MD: American Nurses Publishing.

American Pain Society (APS) (2009). *Principles of analgesic use in the treatment of*

acute pain and cancer pain, (6th ed.) Glenview Il: American Pain Society

Banning, M. (2008). Clinical reasoning and its application to nursing: Concepts and

research studies. *Nurse Education in Practice,* 8, 177-183. Doi:

10.1016/j.nepr.2007.06.004.

Benner, P. (2001). *From Novice to Expert: Excellence and power in clinical nursing*

practice, (Commemorative Edition).New Jersey: Prentice Hall Health.

Benner, P. (1984). *From Novice to Expert: Excellence and Power in Clinical Nursing*

Practice. Menlo Park, CA: Addison-Wesley.

Benner, P., Kyriakidis, P.H., & Stannard, D. (2011). *Clinical wisdom and interventions*

in acute and critical care: A thinking-in-action approach, (2nd ed.).New York:

Springer.

Benner, P., Tanner, C., & Chesla, C. (2009). *Expertise in nursing practice: Caring, clinical judgment, and ethics, (*2nd ed.). New York: Springer.

Burns, J., Magee, K.T., Cooley, H., Hensler, A., Montana, J., Shumaker, D., Snyder, J., Polk, A.R. (2010). "I feel your pain": A research study addressing perianesthesia health care providers' knowledge and attitudes towards pain. *Journal of PeriAnesthesia Nursing,* 25(1), 24-28. Doi: 10.1016/j.jopan2009.11.001

Cleary, J.F. (2000). Cancer pain Management. Cancer Control, 7,2.

Colleau, S.M. (2009). Understanding Health Professional's Fear of Opioids. *Cancer Pain,* 22, 3-4. Retrieved from: http://www.whocancerpain.wisc.edu/?q=node/332

Fero, L.J., Witsberger, C.M., Wesmiller, S.W., Zullo, T.G., & Hoffman, L.A. (2009). Critical thinking ability of new graduate and experienced nurses. *Journal of Advanced Nursing,* 65(1), 139-148.

Ferrell, B.R., McCaffery, M., & Rhiner, M. (1992). Pain and addiction: An urgent need for changing nursing education. *Journal of Pain and Symptom Management,* 7(2), 117-124. Doi: 10.1016/0885-3924(92)90123-Y.

Fisherman, S.M. (2007). Recognizing pain management as a human right: A first step. *Anesthesia and Analgesia,* 105(1), 8-9. Doi: 10.1213/01.ane.0000267526.37663.41.

Goodrich, C. (2006). Students' and faculty members' knowledge and attitudes regarding pain management: a descriptive survey. *Journal of Nursing Education*, 45(3), 140-142.

Gordon, D.B., Dahl, J.L., Miaskowski, C., et al. (2005). American pain society recommendations for improving the quality of acute and cancer pain

management: American pain society quality of care task force. *Archives of Internal Medicine, 165*(14), 1574-1580. doi:10.1001/archinte.165.14.1574.

Haag-Heitman, B. (2008). The development of expert performance in nursing. *Journal for Nurses in Staff Development,* 24(5), 203-211.

Hanks-Bell, M., Halvey, K., Paice, J. (August 31, 2004). "Pain Assessment and Management in Aging". Online Journal of Issues in Nursing. Vol. 9 No. 3; Available: www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume92004/No3Sept04/ArticlePreviousTopic/PainAssessmentandManagementinAging.aspx

Howell, D., Butler, L., Vincent, L., Watt-Watson, J. & Sterns, N. (2000). Influencing Nurses' Knowledge, Attitudes, and Practice in cancer pain management. *Cancer Nursing*. 23(1), 55-63.

International Association for the Study of Pain. *IASP declaration of montreal statement of access to pain management is a fundament human right.* Retrieved August 1, 2012 from http://www.isap-pain.org/AM/Template.cfm?Section=Declaration_of_MontrandNum233_al

"Knowledge." (2012). In *Merriam-Webster.com.* Retrieved September 3, 2012 from: http://www.merriam-webster.com/dictionary/knowledge

"Knowledge and Attitudes Survey Regarding Pain" developed by Betty Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN, (http://prc.coh.org), revised 2008.

Lasch, K., Greenhill, B.A., Wilkes, G., Carr, D., Lee, M., & Blanchard, R. (2002). Why study pain? A Qualitative analysis of medical and nursing faculty and students' knowledge of and attitudes to cancer pain management. *Journal of Palliative Medicine,* 5(1), 57-71.

Lewthwaite, B.J., Jabusch, K.M., Wheeler, B.J., Schnell-Hoehn, K.N., Mills, J, Estrella-Holder, E., Fedorowicz, A., (2011). Nurses' knowledge and attitudes regarding pain management in hospitalized adults. *The Journal of Continuing Education in Nursing* 46(6), 251-257. Doi: 10.3928/00220124-20110103-03

Lui, L., So, W., & Fong, D. (2008). Knowledge and attitudes regarding pain management among nurses in Hong Kong medical units. *Journal of Clinical Nursing*, 17(15), 2014-2021. doi:10.1111/j.1365-2702.2007.02183.x

Marks R. M., & Sachar E.J. (1973). Under treatment of medical inpatients with narcotic analgesics. *Annual of Internal Medicine,* (78), 173-81.

Matthew, E., & Malcolm, C. (2007). Pain management. Nurses' knowledge and attitudes in pain management practice. *British Journal of Nursing*, 16(3), 174-179.

Mathew, P. J., Mathew, J. L., & Singhi, S. S. (2011). Knowledge, attitude and practice of pediatric critical care nurses towards pain: Survey in a developing country setting. *Journal of Postgraduate Medicine*, 57(3), 196-200. doi:10.4103/0022-3859.85203

McCaffery, M., & Ferrell, B.R. (1997). Nurses' knowledge of pain assessment and management: How much progress have we made? *Journal of Pain and Symptom Management,* 14(3), 175-188.

McCaffery, M., & Pasero, C.L. (1999). *Pain: clinical manual*. St. Louis: Mosby

McCaffery, M., & Robinson, E. (2002). Your patient is in pain: here's how you respond. *Nursing*, 32(10), 36-47.

McMillan, S.C., Tittle, M., Hagan, S.J., & Small, B.J. (2005). Training pain resource nurses: changes in their knowledge and attitudes. *Oncology Nursing Forum*, *32*(4), 835-842. doi:10.1188/05.ONF.835-842

McMillian, S., Tittle, M., Hagan, S., Laughlin, J., Tabler, R. (2000). Knowledge and attitudes of nurses in veteran's hospitals about pain management in patients with cancer. *Oncology Nursing Forum, 27*(9), 1415-1423.

Oncology Nursing Society (ONS) (2004), Cancer Pain Management. Oncology Nursing Society Position.

Paley, J. (1996). Intuition and expertise: comments on the Benner debate. *Journal of Advanced Nursing*, *23*(4), 665-671. doi:10.1111/j.1365-2648.1996.tb00035.x

Pasero, C., & McCaffery, M. (2001). The patient's report of pain. *American Journal of Nursing*, *101*, 73-74.

Plaisance, L., & Logan, C. (2006). Nursing students' knowledge and attitudes regarding pain. *Pain Management Nursing, 7*(4), 167-175.

Polkki, T., Korhonen, A., Laukkala, H., Saarela, T., Vahvilainen-Julkunen, K., and Pietila, A.M. (2010). Nurses' attitudes and perceptions of pain assessment in neonatal intensive care. *Scandinavian Journal of Caring Sciences, 24*, 49-55. Doi: 10.1111/j.1471-6712.2008.00683.x

Rahimi-Madiseh, M., Tavakol, M., & Dennick, R. (2010). A quantitative study of Iranian nursing students' knowledge and attitudes towards pain: Implication for

education. *International Journal of Nursing Practice*, *16*(5), 478-483. doi:10.1111/j.1440-172X.2010.01872.x

Rew, L., (2000). Acknowledging Intuition in Clinical Decision Making, *Journal of Holistic Nursing*, 18(2), 94-108

Richards, J., & Hubbert, A.O. (2007). Experiences of expert nurses in caring for patients with postoperative pain. *Pain Management Nursing,* 8(1), 17-24.

Rushton, P., Eggett, D., & Sutherland, C.W., (2003). Knowledge and Attitudese about Canere pain Management. A comparison of oncology and nononcology nurses. *Oncology Nursing Forum*, 30(5). 849-855.

Sternman, E., Gauker, S., & Krieger, J. (2003). A comprehensive approach to improving cancer pain management and patient satisfaction. *Oncology Nursing Forum,* 30(5), 857-864.

Stolee, P., Hillier, L.M., Esbaugh, J., Bol, N., McKellar, L., Gauthier, N., & Gibson, M.C. (2007). Pain assessment in a geriatric psychiatry program. *Pain Research & Management,* 12(4), 273-280.

The Joint Commission (TJC) (2012). Facts about pain management. Retrieved from: http://www.jointcommission.org/speakup.aspx

Tomey, A.M.,& Alligood, M.R. (2006). *Nursing Theorist and Their Work.* (6th ed.). St. Louis, Missouri: Mosby.

Tsai, F., Tsai, Y., Chien, C., and Lin, C. (2007). Emergency nurses' knowledge of perceived barriers in pain management in Taiwan. *Journal of Clinical Nursing*, 16(11), 2088-2095. doi:10.1111/j.1365-2702.2006.01646.x

Turk, D.C., & Dworkin, R.H. (2004). What should be the core outcomes in chronic pain clinical trials? *Arthritis Research Therapy, 6*(4), 151-154. Doi: 10.1186/ar1196

Wang, H., & Tsai, Y. (2010). Nurses' knowledge and barriers regarding pain management in intensive care units. *Journal of Clinical Nursing*, *19*(21/22), 3188-3196. doi:10.1111/j.1365-2702.2010.03226.x

Wells, N., Pasero, C., & McCaffery, M. (2008). Improving the quality of care through pain assessment and management. In R.G. Hughes (Ed.) *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. (pp. 469-486).Rockville MD: AHRQ.

Wilson, B. (2007). Nurses' knowledge of pain. *Journal of Clinical Nursing*, *16*(6), 1012-1020. doi:10.1111/j.1365-2702.2007.01692.x

Young, J., Horton, F., & Davidhizar, R. (2006). Nursing attitudes and beliefs in pain assessment and management. *Journal Of Advanced Nursing*, *53*(4), 412-421. doi:10.1111/j.1365-2648.2006.03735

Zwakhalen, S.M.G., Hamers, J.P.H., Peijnenburg, R.H.A., & Berger, M.P.F. (2007). Nursing staff knowledge and beliefs about pain in elderly nursing home residents with dementia. *Pain Research & Management,* 12(3), 177-184.

Appendices

Appendix A

Conceptual-Theoretical-Empirical Representation of the Research

Conceptual-Theoretical-Empirical Representation of the Research

Theory-Generating Research — Patricia Benner's Novice to Expert Model

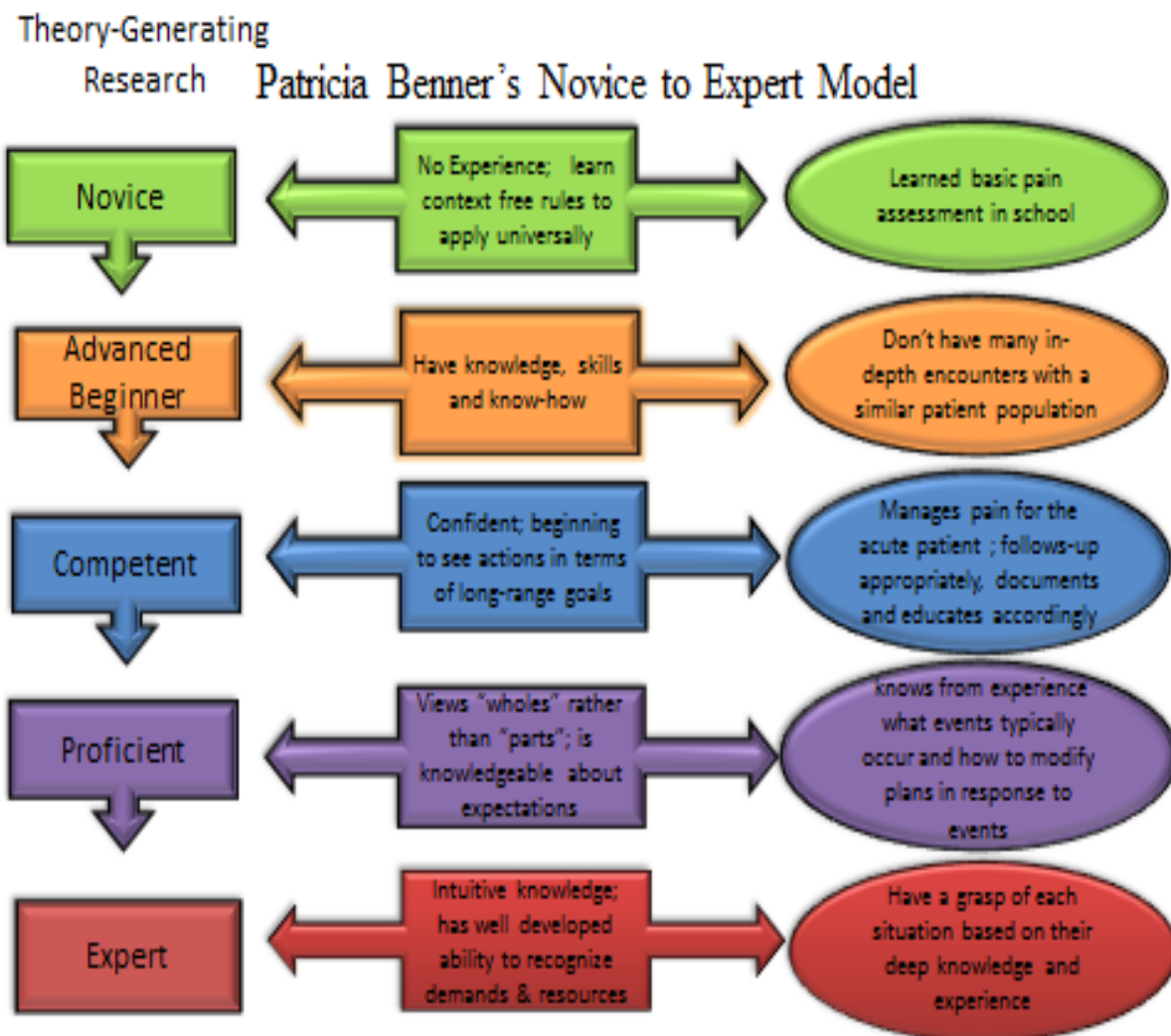| Level	Description	Empirical
Novice	No Experience; learn context free rules to apply universally	Learned basic pain assessment in school
Advanced Beginner	Have knowledge, skills and know-how	Don't have many in-depth encounters with a similar patient population
Competent	Confident; beginning to see actions in terms of long-range goals	Manages pain for the acute patient; follows-up appropriately, documents and educates accordingly
Proficient	Views "wholes" rather than "parts"; is knowledgeable about expectations	knows from experience what events typically occur and how to modify plans in response to events
Expert	Intuitive knowledge; has well developed ability to recognize demands & resources	Have a grasp of each situation based on their deep knowledge and experience

Diagram 1: *Conceptual-Theoretical-Empirical Representation of the Research: Patricia Benner's Model*

Appendix B

Health Care Team Member Consent

Health Care Team Member Consent

GARDNER-WEBB UNIVERSITY
SCHOOL OF NURSING
Health Care Team Member Consent
Nursing Research Project

Penny Hennessee, RN, BSN is conducting a research study on nursing knowledge

and attitudes of nurses towards pain management. The purpose of the research project is

to explore and compare knowledge and attitudes of nurses in various areas of practice.

The results of this study could improve the quality of patient care by providing a cross-

sectional view of pain knowledge and attitudes of nurses who are involved in direct

patient care.

The study consists of a knowledge and attitudes questionnaire, survey of current

professional nursing experience, and demographic information. There is no risk

associated with this survey. There is no cost to you other than the time to complete the

survey that is expected to be less than 45 minutes. Individual results of the study will

NOT be shared and all study data will remain confidential.

Participation in this study is voluntary. Your completed survey will serve as

evidence of consent in the study. You have the right to decline to participate. If you

have any questions about the study you can call Penny Hennessee at (704) 860-6211 or

Dr. R. Beck-Little at Gardner-Webb University (704) 406-4358.

Thank you in advance for your participation.

Appendix C

Knowledge and Attitudes Survey Regarding Pain

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 opioid with an NSAID) 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 potentiates of opioid analgesics.

T F 10. Opioids should not be used in patients with a history of substance abuse.

T F 11. Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).

T F 12. Elderly patients cannot tolerate opioids for pain relief.

T F 13. Patients should be encouraged to endure as much pain as possible before using an opioid.

T F 14. Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent's assessment of the child's pain intensity.

T F 15. Patients' spiritual beliefs may lead them to think pain and suffering are necessary.

T F 16. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

T F 17. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T F 18. Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5-10 mg of morphine PO.

T F 19. 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 20. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.

T F 21. Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.

T F 22. Narcotic/opioid addiction is defined as a chronic neurobiological 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.

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. 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

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 patients who develop pain already have 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

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.

37 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.

Appendix D

Demographics Data Form

Demographics Data Form

Demographic information is used in the analysis of the survey. NO individual

information will be disclosed.

How many years have you been a nurse?

What is your current area of practice/specialty? (Example: critical care, obstetrics, etc.)

What is your age?

What is your gender?

What is your educational background?

Appendix E

Permission to Use Tool and Publish Tool

Permission to Use Tool and Publish Tool

April 2008

Dear Colleague:

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 was revised and is now being tested in pain education courses to conduct psychometric analysis on this updated version. There have been minor edits in April 2008. 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 Agency for Health Care Policy and Research. 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 r>.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 measures both knowledge 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. 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 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 current revisions. 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 2008.**
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
Margo McCaffery, RN, MS, FAAN
Research Scientist Lecturer and Consultant

References:
1. McCaffery M, Ferrell BR (1994). "Understanding opioids & addiction." Nursing 94, 24(8): 56-59.

2. Ferrell BR, McCaffery M, Rhiner M. (1992). "Pain and addiction: An urgent need for changing nursing education." Journal of Pain and Symptom Management, 7(2): 117-124.

3. Ferrell BR, Grant M, Ritchey KJ, Ropchan R, Rivera LM (1993). "The Pain Resource Nurse Training program: A unique approach to pain management." Journal of Pain and Symptom Management, 8(8): 549-556

4. Ferrell BR, McCaffery M (1997). "Nurses' knowledge about Equianalgesic and opioid dosing." Cancer Nursing, 20(3): 201-212

5. McCaffery M, Ferrell BR (1997). "Nurses' knowledge of pain assessment and management: How much progress have we made?" Journal of Pain and Symptom Management, 14(3): 175-188

6. Ferrell BR, Virani R (1998). "Institutional commitment to improved pain management: Sustaining the effort." Journal of Pharmaceutical Care in Pain and Symptom Control, 6(2): 43-55

7. McCaffery M, Ferrell BR (1997). "Influence of professional vs. personal role on pain assessment and use of opioids." The Journal of Continuing Education in Nursing, 28(2): 69-77

8. McCaffery M, Ferrell BR (1999). "Opioids and pain management - What do nurses know?" Nursing 99, 29(3): 48-52

9. McCaffery M, Ferrell BR, Pasero C (2000). "Nurses' personal opinions about patients' pain and their effect on recorded assessments and titration of opioid doses." Pain Management Nursing,

Appendix F

Answer Key

Knowledge and Attitudes Survey Regarding Pain

Answer Key

Knowledge and Attitudes Survey Regarding Pain

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 opioid with an NSAID) 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. Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.

F 10. Opioids should not be used in patients with a history of substance abuse.

F 11. Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).

F 12. Elderly patients cannot tolerate opioids for pain relief.

F 13. Patients should be encouraged to endure as much pain as possible before using an opioid.

F 14. Children less than 11 years old cannot reliably report pain so nurses should rely solely on the
parent's assessment of the child's pain intensity.

T 15. Patient's spiritual beliefs may lead them to think pain and suffering are necessary.

T 16. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

F 17. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T 18. Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5 - 10 mg of morphine PO.

F 19. 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.

F 20. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.

T 21. Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.

T 22. 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.

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is
_____ a. intravenous
b. intramuscular
c. subcutaneous
X d. oral
e. rectal

24. The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset, such as trauma or postoperative pain is
__X_ 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
X b. morphine
c. meperidine
d. tramadol

26. 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
X 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
X 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
X 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
X 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)
X 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
X 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 population.
b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
X 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 patients who develop pain already have 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
__X_ 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
__X_ c. 1 – 2 hours
_____d. 3 hours

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

37. 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.
X 4. Administer morphine 3 mg IV now.

38. 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.