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Evaluating the Knowledge and Attitudes Regarding Pain Management Among Nurses in a Surgical Setting at an Acute Care Facility

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EVALUATING THE KNOWLEDGE AND ATTITUDES REGARDING PAIN MANAGEMENT AMONG NURSES IN A SURGICAL SETTING AT AN ACUTE CARE FACILITY

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Abstract

It is estimated that seventy-three million patients undergo surgical procedures each year in the United States. Of these, 80% experience acute post-operative pain, and approximately 20% experience severe pain (Hutchinson, 2007). Benner's Theory from Novice to Expert was used to guide the study, "Evaluating the Knowledge and Attitudes Regarding Pain Management Among Nurses in a Surgical Setting at an Acute Care Facility". A convenience sample of twenty-one nurses in an acute care hospital in Southwestern North Carolina participated in the Knowledge and Attitudes Survey Regarding Pain. Results showed a weak correlation between knowledge and attitudes of pain management and years of experience (r=0.368). A weak correlation was also found between knowledge and attitudes of pain management and level of education (r=0.245).

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Chapter I

Introduction

Statement of the Problem

Despite decades of research and the availability of effective analgesic approaches, many patients continue to experience moderate to severe pain after surgery. Pain and its management are considered important when considering the problems of the major clinical problems confronting health care professionals in general and specifically in surgical wards. Even though enormous technologic advances and substantial research in the pain management field has occurred, several studies have indicated that postoperative pain is not relieved in most patients and acute postoperative pain management is sub-optimal. Patients have continued to suffer needlessly. As a result, pain management is now considered an important outcome when evaluating the effectiveness of nursing care. The duty to alleviate pain is recognized by a majority of healthcare professional organizations as one of the most fundamental roles of a healthcare provider. Despite this philosophy, healthcare providers including nurses – who spend more time with the patients in pain – are sometimes cited as major contributors to the problem of inadequate pain management. Nurses' perceptions of pain are often based on their knowledge; therefore, knowledge deficits may cause nurses to hold negative beliefs and attitudes toward pain management (Rejeh, Ahmadi, Mohammadi, Anoosheh, & Kazemnejad, 2009).

Background and Need

People continue to experience unacceptable levels of acute postoperative pain in hospitals. All too often, patients have pain that remains unrelieved or is inadequately

managed. Pain that is not treated may lead to worsening patient conditions, decreased quality of life, decreased patient satisfaction, and increased healthcare costs (Innis, Bikauniekas, Petrysben, Zellermeyer, and Ciccarelli, 2004). The benefits of pain assessment and management include reduced pain for the patient, quicker postoperative recovery, improved sleep, increased mobility, and increased patient satisfaction (Michaels, Hubbartt, Carroll, and Hudson-Barr, 2006).

Adequate pain assessment and understanding of pain are essential components for providing satisfactory pain control and optimizing postoperative recovery (Godfrey, Parten, and Buckner, 2006). Effective pain management generally requires communication between the person in pain and the healthcare provider, both working together to attain pain relief acceptable to the person in pain (McDonald, 2000).

Purpose of the Study

Pain is defined as an unpleasant sensory experience (Bell and Duffy, 2006). It is subjective to the individual. Therefore, pain is whatever the person says it is. Pain perception is the process of recognizing, defining, and responding to pain (Dahlen, 2006). Pain assessment and pain control should be the primary focus of all healthcare providers, especially those who manage patients on postoperative surgical units. Effective pain management should begin and end with the patient's perception of his or her pain. The purpose of this study was to examine the knowledge and attitudes regarding pain management among registered nurses in a surgical setting in an acute care facility.

Significance of the Study

The tissue damage and trauma inherent in surgical procedures almost invariably results in acute postoperative pain, which can range in intensity from mild to very severe.

Unrelieved postoperative pain has important consequences in a variety of dimensions. Physically, extended periods of unrelieved pain can result in physiologic changes that include pituitary-adrenal activation, which in turn, may produce a diminished immune response. There is also sympathetic activation in association with pain, which may result in cardiovascular, gastrointestinal, and renal changes. In addition, unrelieved acute postoperative pain results in elements in their early surgical recovery (Hutchinson, 2007).

All of the above contribute to a wide range of potential adverse outcomes in postsurgical patients: such as, deep vein thrombosis, pulmonary embolus, coronary ischemia, myocardial infarction, pneumonia, poor wound healing, reduced immune response to surgery, and chronic pain syndrome. Negative consequences of inadequate pain management and treatment include extended length of stays, readmissions, and reduced patient satisfaction. These may increase overall costs and also put health systems at a disadvantage in a competitive healthcare environment (Hutchinson, 2007).

Research Question

The research question addressed in this study was

What is the level of the knowledge and attitude of pain management among nurses in a surgical setting in an acute care hospital?

Theoretical Framework

Patricia Benner's Theory from Novice to Expert was used to guide this study. Experience is defined as the outcome when preconceived notions are challenged, refined, or refuted in actual situations. As the nurse gains experience, clinical knowledge becomes a blend of practical and theoretical knowledge (Tomey & Allgood, 2006). Benner has provided essential understanding of how knowledge and skill are acquired

and directly applied. The Novice nurse has no experience of the situations in which they are expected to perform. Novice nurses are taught rules to help them perform. The rules are context-free and independent of specific cases. A novice has no "life experience" in the application of rules. Benner states that "nursing students enter a new clinical area as novices".

The Advanced Beginners are those who can demonstrate marginally acceptable performance, and who have coped with enough real situations to note, or to have pointed out to them by a mentor, the recurring meaningful situational components. The Advance Beginners are also learning to discriminate between normal and abnormal situations and establish priorities as to what is important.

The Competent Nurse is typified by the nurse who has been on the job in the same or similar situations for two or three years and develops as the nurse begins to see his or her actions in terms of long-range goals or plans of which he or she is consciously aware. For the competent nurse, a plan establishes perspective, and the plan is based on considerable conscious, abstract and analytic contemplation of the problem. However, the competent person does not yet have enough experience to recognize a situation in terms of an overall picture or in terms of which aspects are most important. Although the competent nurse has a sense of mastery and is able to cope with a number of variables, they still "lack the speed and flexibility of the proficient nurse" (Benner, 1984).

The Proficient Nurse perceives situations as whole rather than in terms of chopped-up parts or aspects. Proficient nurses understand a situation as a whole because they perceive its meaning in terms of long-term goals. The proficient nurse can now recognize when the expected normal picture does not materialize. Rather than having to

analyze and calculate a plan, the plan simply "presents itself". That is, due to a vast body of experience, the nurse is able to zero in on the problem with very little thought. The proficient nurse will use "maxims" to practice. These are nuances of a situation and Benner notes that to nurses at any of the other levels of skill acquisition these maxims appear unintelligible because of their ambiguity.

The Expert Nurse no longer relies on an analytic principle to connect his or her understanding of the situation to an appropriate action. The expert nurse has an enormous background of experience and an intuitive grasp of each situation. In addition, the expert operates from a deep understanding of the total situation. The expert has a difficult time explaining what they know and how they know it because it has become internalized (Benner, 1984). The stages of Benner's model from novice to expert are detailed in all five levels in relating knowledge to the nurse, patient, and caregiver. This theoretical reference (see Appendix A) implies that novice to expert references the nurse's progression from a mere base knowledge of administering pain medication to the pharmaceutical action of the pain medication and the actions to watch for as it is being administered to the patient.

Definition of Terms

For the purpose of this study the following terms are defined:

1. Pain Management: According to the American Pain Society Quality of Care Task Force, (2005), pain management encompasses all interventions used to understand and ease pain, and alleviate the origin of the pain.

2. Pain: According to the American Academy of Pain Management (n.d.), pain is defined as a neural transmission and sensory transduction, which is a complex

mix of emotions, culture, experience, spirit and sensation. In other words, pain is a complex psychological and physical occurrence that is unique to each patient experiencing it.

3. Knowledge: Comprehension of facts, ideas, and information, gained through experience, instruction, and learning for a distinct use (Merriam-Webster Online Dictionary, 2009).

4. Pain attitudes: A persisting set of beliefs and values that affect how one responds or reacts when pain is involved (McMillan, Tittle, Hagan, Laughlin, & Tabler, 2000).

Chapter II

Literature Review

The review of the literature utilized electronic databases such as Academic

OneFile, EBSCOhost, and the Cumulative Index to Nursing and Allied Health Literature

(CINAHL) to explore the concept of knowledge and attitudes regarding pain

management among nurses on a surgical unit in an acute care facility. In addition, how

nurses gain knowledge was explored. Benner's Theory Novice to Expert was discussed

as the theoretical framework of the research study.

Novice to Expert

In a descriptive survey by Goodrich (2005), it was reported that basic nursing

programs spend little time educating students about pain management. The purpose of

this study was to determine the baseline knowledge and attitudes of nursing students and

faculty about the science of pain management and to evaluate the content of pain

management material and the extent to which it is integrated into the curriculum.

Between the years of 2000 and 2002, a baccalaureate nursing program at a university in

central Virginia surveyed a convenience sample of senior nursing students, as well as

faculty using McCaffery's Pain Knowledge and Attitude Survey. The faculty was also

asked open-ended questions regarding the inclusion of pain management in their

curriculum.

Study findings identified student nurse knowledge deficits specifically in the use

of meperidine, pain experience during sleep, and patients' self-reports of pain. Findings

were used to formulate a course on pain management for the curriculum. Results of the

faculty surveys identified strengths in the area of patient assessment and drug therapy (Goodrich, 2005).

The purpose of a qualitative study by Briggs (2010) was to determine nursing students' accuracy in assessment ratings and treatment choices for patients experiencing pain, and then determine the thought process leading to their decisions.

Junior and senior nursing students at two schools of nursing, who had completed two years of general education requirements and prerequisites and who had begun upper-division nursing courses were surveyed using the Patient Behavior Case Vignette (Briggs, 2010).

Results showed that 87.41 percent of the nursing students correctly rated the pain intensity for Patient A in the case vignette. In contrast 50.42 percent of the nursing students correctly administered the correct dose of morphine for Patient B in the case vignette. More than half of the students in the sample tended to assess pain accurately; however, rather than documenting verbal ratings provided by the patient, many were swayed by behavioral factors. It was concluded that faculty should consider using the written rationales provided by students as a spring board for educating students about common myths and misconceptions (Briggs, 2010).

Chiu, Trinca, Lim and Tuazon (2003) evaluated pain knowledge of two sub-populations of final year nursing students in Australia and the Philippines, surveying 150 final year nursing students. The score ranged from 0% to 70%, the 95% Confidence Interval of the mean was 36-41%. There were few significant differences between the groups for individual questions and no significant difference in overall mean scores. Results demonstrated consistently low levels of knowledge as well as knowledge gaps

about basic pain mechanism, terms, and treatment. The study defined basic knowledge

about pain and should be explored further to determine if these facts are necessary for

inclusion in nursing curriculums.

A descriptive study by Bergh, Jakobsson, and Sjostrom (2007) explored nursing

students' own worst experiences of pain as well as their conceptions of the worst pain

imaginable. A sample size of 621 students (524 women and 97 men) in a Bachelor of

Science in Nursing Program at a university participated in the study, completing a

questionnaire focusing on two main questions: 'What is the worst experience of hurt,

ache or pain you have had?' and 'What is the worst pain imaginable to you?'

The findings revealed students' own worst experiences of pain were mostly

related to concrete bodily pain, with their worst pain imaginable described in terms of

deeper emotional and existential distress and represented a much more extensive

phenomenon than just pain intensity (Bergh et al, 2007). The need to explore why

professional experience as a nurse diminishes the ability to imagine patients' pain was

identified, as well as other questions related to professional experience.

A quasi-experimental study by Lin, Chiang, Chiang, and Chen (2008) assessed

the effectiveness of a pain management program in improving the nurses' knowledge

about, attitude towards and application of relaxation therapy. The study group received

an educational course in pain management while the control group did not participate in

the course. The study enrolled participants between June and September with a

convenience sample of 81subjects participating from seven different surgical wards in a

medical center. Forty-two nursing students were assigned to the study group and 39 were

assigned to the control group. Results of the study showed that the study group's

knowledge of pain management was significantly advanced and superior to that of the control group after the continuing education course.

The limitations of the study include its use of a convenience sample of subjects recruited from one specific medical center. The results obtained cannot be generalized to the nursing staffs of medical departments or in other institutions. The questionnaire used in this study was designed by the researchers; therefore, the collected data are limited to the scope of the study design. Also, the continuing education course given to the study group in this study was designed by the researchers; therefore, the analysis of the results is relevant only to the course designed for this study (Lin, Chiang, Chiang, & Chen, 2008).

In a non-experimental, descriptive study by Al-Shaer, Hill, and Anderson (2011), the researchers assessed nurses' knowledge regarding pain assessment and management, and identified relationships that exist between selected demographic information and nurses' knowledge. Convenience samples of 129 registered nurses from 10 separate nursing units in a Midwestern metropolitan hospital were selected for the study. Data was collected using the Nurses Knowledge and Attitude Survey. Limitations of the study included data being collected during the winter months in the Midwest, which resulted in fewer participants for the study. Results of the study indicated relatively high knowledge scores, but still some nurses are not adequately prepared to care for patients who experience pain.

Knowledge and Beliefs

MacKintosh and Bowles (2000) studied the impact of an introduction of an Acute Pain Service (APS) had on the knowledge and beliefs of nurses working in a surgical

area. A two - part study of 109 post-operative patients and 121 nurses was conducted in

1993 and again in 1997. The nurses were given the same questionnaires, which also

contained case studies. The study concluded that the most important factors nurses

identified as influencing their pain management strategies were the size of the patient,

type of surgery the patient had, severity of pain, time since surgery, response to last

medication, and age. Results of the study strongly suggest that an APS can have an

influence on this process and further studies are needed to clearly establish this link.

There were no limitations mentioned in this study.

A descriptive study by Arinzon, Gepstein, Shabat, and Berner (2007) evaluated

whether elderly hip fracture patients had an increased perception of pain on admission to

a geriatric rehabilitation facility and did this influence their functional recovery after

rehabilitation treatment. Using a convenience sample, patients 65 years and older who

were admitted for rehabilitation treatment between January 2001 and December 2002

participated in the study. Pain perception was determined using the Visual Analog Score.

The researchers concluded that pain intensity may add a valuable dimension for the

prognostic evaluation of the patient as well as during the follow-up evaluation. Results

showed that healthcare structures should educate not only hip fracture patients about the

possibility of pain, but also nurses and physicians for more detailed assessment. No

limitations were mentioned in this study.

McAloon, Nucero, and O'Conner (2007) used a comparative descriptive design to

examine the patient's perception of pain upon arrival and discharge from the Emergency

Department. The convenience sample consisted of 63 females (with a mean age of 41

years) and 62 males (with a mean age of 40 years) from an Emergency Department of an

urban hospital in Trenton, New Jersey. The hypothesis being tested stated that patients do not perceive or report pain differently from time of arrival to discharge from the emergency room. The instrument used in this study was a Visual Analogue Score based on a scale from 0 (no pain) to 10 (worse pain). The results of the scores on arrival to the emergency department were high and at discharge considerably lower. It was concluded that further studies focus not only on the patient's pain, but also on the timing of the pain therapy, the effectiveness of the pain therapy, and accuracy of the pain assessment. In order for nurses to play an essential role in assuring that all patients receive adequate pain relief, they need to improve their pain assessment skills and their knowledge of pain therapies. There were no limitations mentioned in this study.

In a cross-sectional descriptive study by Bergh, Jakobsson, Sjostrom, and Steen (2005), the researchers examined how older patients who had undergone hip surgery described their experience of pain. The study was conducted on two orthopedic wards and two elder care wards at a large university hospital. A convenience sample of 38 patients with hip replacements and 22 patients with hip fractures participated in the study. A face-to-face interview was conducted with each patient on the second day after surgery. Patients were asked to rate their hip pain on a Verbal Numerical Rating Scale (VNRS) of 0-10 (with 0 = no pain and 10 = the worst pain imaginable) when resting and their anticipated pain when moving. Results of the study showed that patients' expressed their pain in 4 main themes: (a) objectification (localizing; quantifying; characterizing; temporalizing); (b) compensating (substitution; picturing); (c) explaining (functionalizing pain and its relief); and (d) existentializing (present pain orientation; future pain orientation).

Limitations to the study are that the questioning of the patients took place in their rooms and this may have an effect on the findings. Also the interruptions that were encountered during the interview may have an effect and the effect that the interview was conducted on the second day post operatively. According to Bergh, future studies that provide a deeper understanding of patients' experiences of pain by studying ways of talking in diagnosis-related groups of patients with acute or chronic pain. Also investigations need to include how and if ways of talking about pain change depending on context.

In a descriptive study by McDonald, McNulty, Erickson, and Weiskopt (2000), the patients were asked to explore and communicate their pain and pain management needs after surgery. A purposive sample of thirty post-operative patients (10 Anglo, 10 African, and 10 Latino Americans) participated in the study. Each participant was asked ten open-ended interview questions. The McGill Pain Questionnaire Short-Form was used to provide a common basis for comparison of the average post-operative pain experienced by the participants during their hospital stay.

Results from this study suggest that even though post-operative patients are capable of communicating their pain, they still continue to experience moderate to moderately high levels of pain. It is suggesting that there was ineffective pain management between the person in pain and health care providers. The results underscored the need for nurses and physicians to effectively teach patients their responsibility and role in their own pain management during the preoperative office visit and again during the post-operative hospital stay. Future research is needed to directly test interventions designed to address these pain communication problems so that more

effective pain relief can be obtained for people in pain (McDonald, et al, 2000). Limitations to the study include participant's perceiving their health care provider's pain inquiries as social interactions, shrinking hospital resources, and health care providers limiting their pain assessments due to limited time.

A randomized controlled trial study conducted by Roykulchaoen and Good (2004) examined the effects of systematic relaxation on both the sensory and affective components of pain, on anxiety during recovery from ambulation after abdominal surgery, and opioid intake within 6 hours after surgery. A convenience sample of 84 females and 18 males (a relaxation group and a control group), age 21-65 years participated in the study. Relaxation promotes patient well-being without the risk of additional invasive or drug therapies and may enhance an individual's feelings of control. The use of relaxation in combination with analgesic medication offers patients a comprehensive approach to pain relief. Relaxation techniques have minimal side effects and they enable patients to learn self-care and to be actively involved in their pain management, which is critical for optimal relief. The instrument used was the dual Visual Analogue Sensation of Pain scale. Results showed that the relaxation group reached a satisfactory score of six of six during practice before surgery and at the start of the test after surgery. The researchers identified the importance of using relaxation along with analgesia for pain control and recommended that this technique should continue to be explored in nursing research and used in nursing practice. Limitations to the study were the homogeneous adult, blinding patients was not possible because relaxation requires their participation, and also objective indicators of the relaxation response such as blood pressure, heart rate, and respiratory rate were not obtained.

A descriptive comparative design study by Sloman, Rosen, Rom, and Shir (2005) compared nurses' ratings of pain intensity and suffering (affect) in adult surgical patients with patients' own ratings of these variables and whether the patient's pain ratings were influenced by cultural and ethnic differences. A convenience sample of 95 patients paired with 95 Registered Nurses in four adult surgical units in four hospitals in Jerusalem, Israel participated in the study. The Short-Form McGill Pain Questionnaire, the Visual Analogue Scale, and a demographic and cultural questionnaire were administered to each patient by the researcher. Findings revealed that nurses significantly underestimated all dimensions of pain on the above scales, but accurately assessed patient treatment satisfaction. No significant differences of effect were identified between cultural and ethnic differences.

Results showed implications for the management of postoperative pain by highlighting the need for more accurate pain assessment. Recommendation for further research to clarify the way in which nurses and patients conceptualize pain and to understand better the process of pain assessment in clinical nursing practice was made. A limitation to the study was the discrepancy between patients' and nurses' ratings of pain (Sloman et al, 2005).

In the randomized, clinically controlled, single-blinded study by Glindvad and Jorgensen (2007), an investigation to determine whether education can reduce postoperative pain in patients who underwent an inguinal hernia repair was studied. Two hundred and thirty four patients admitted from September 2003 to April 2003 for elective unilateral inguinal hernia repair participated in the study. An intervention group received education on discharge from the hospital followed by a telephone interview on the second

postoperative day. The control group was given the usual routine information. Patients ranked their pain using a 100mm Visual Analogue Scale on the first, third, and seventh postoperative day. Results of the study showed the intervention group sustained more pain while moving the day before surgery and in conclusion, the researcher stated that a costly and time-consuming intervention such as the one used in this study was not justified. Limitations to the study suggest that it is not possible to determine the effects of education on postoperative pain because studies have used different designs, samples, and measures.

The literature review identified that professional experience, knowledge, and beliefs may influence the practice and the nurse's attitude toward pain management. A gap in the knowledge was identified that suggests that years of experience in nurses and healthcare workers may be a contributing factor to effective pain management. Nurses and healthcare workers need to refrain from basing pain management assessment and interventions on personal beliefs and judgments. Post-surgical patients usually experience more pain than a nonsurgical patient, making it extremely important for those patients to have adequate pain management. Nurses assessment skills and interventions need to be appropriate to better care for this type of patient. Effective pain management skills are developed through education and training. Benner's theory Novice to Expert explores these steps that will enhance the nurses' growth as they learn to develop skills to become more knowledgeable in pain management and therefore provide better care for the patients.

Chapter III

Design and Methodology

Sample

A convenience sample of twenty-one Registered Nurses from an acute care hospital located in Southwestern North Carolina was utilized. Forty surveys were distributed with twenty-one subjects completing the questionnaire for a return of 53%. The inclusion criteria for participation included current license as a Registered Nurse and completion of the orientation process on the surgical unit of the facility. Demographics included years of experience, years on the unit, and highest degree obtained in nursing.

Setting

A thirty-one bed surgical unit in an acute care hospital located in Southwestern North Carolina was utilized for this study.

Ethical Considerations

Prior to conducting the study, approval was acquired by the Institutional Review Board Committee of the university as well as from the Director of Nursing at the facility in which the study was conducted. A cover letter and copies of the Demographic form and the Knowledge and Attitudes Survey Regarding Pain (see Appendices B, C and D) were sent to the Director of Nursing of the facility explaining the research study. Participants were assured of anonymity in joining the study and were informed of its voluntary participation. Participants were asked not to place any identifying marks on the questionnaires.

Data Collection

Data collection was conducted exclusively by the investigator. Demographic forms and questionnaires were distributed during a monthly staff meeting to forty registered nurses on the post-surgical unit. Nurses who chose to participate in completion of questionnaires were informed that their participation was strictly voluntary, results were confidential, and anonymity would be maintained. Those agreeing to participate in the study agreed to complete the questionnaire at their convenience. The completed questionnaires were returned by the participants to the researcher in a sealed envelope. The data results were entered into the researcher's computer. The researcher's computer is password protected to ensure confidentiality of materials for this study. The researcher was available for questions from the participants when they returned their questionnaires.

Instrumentation

The "Knowledge and Attitudes Survey Regarding Pain" was the instrument used in this survey. The research tool is a questionnaire consisting of 22 true and false questions, 14 multiple choice questions and two case studies. The tool was developed in 1987, revised in 2008 and has been used extensively from 1987 to the present (see Appendix D).

Validity. 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 (Ferrell and McCaffery, 2008).

Reliability. 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).

In conclusion, much progress has been made to help educate and train nurses on effective pain management, however more emphasis needs to be placed on educating and training nurses in effective pain management, beginning in schools of nursing. The researcher identified a need to examine and explore the knowledge and attitudes regarding pain management among registered nurses in a surgical setting in an acute care facility. The comprehensive literature review identified a gap in the knowledge concerning pain management among post-surgical registered nurses. Through a descriptive quantitative methodology, the researcher examined the sample population using Patricia Benner's theory Novice to Expert to examine and explore pain management.

Chapter IV

Results

Findings Related to Demographics

Twenty-one registered nurses employed in a surgical unit at an acute care facility participated in this study. The nurses consisted of twenty females and one male. The Knowledge and Attitudes Survey Regarding Pain was administered to assess the nurses' knowledge and attitudes about the pain medication they were administering and also their attitude as to whether they thought the patient was actually in as much pain as he voiced by his actions.

Demographic data on the participant's years of experience, educational level, and years of experience on the nursing unit can be found in Table 1. Approximately four (19%) of the participants had less than one year of experience and the remaining 17 (81%) had more than one year of experience.

The educational levels considered in the study included the diploma level nurse and those with degrees at the Associate and Baccalaureate levels. The fewest number of participants (5%, n=1) were diploma nurses. The baccalaureate level nurses (14%, n=3) were the second highest participants. The highest level of participants (81%, n=17) were associate degree level nurses.

The survey was given to nurses employed on a surgical unit where they deal with pain and administer pain medication daily. There were 21 responses out of 40 nurses who were given the survey, producing a return rate of 53%. The survey consisted of 38 questions concerning patient's pain and pain medication. The grades of the 21 respondents ranged from 94.7 to 52.6, which equates to a participant that missed two

Table 1

Demographic Characteristics of Participation n=21

Variable	Frequency	Percentage
Years of Experience		
<1	4	19
1-5	3	14
6-10	7	34
11-15	4	19
16 +	3	14
Year in Unit		
<1	4	19
1-5	2	10
6-10	9	43
11-15	3	14
16 +	3	14
Highest Degree		
Diploma	1	5
Associates	17	81
Baccalaureate	3	14

questions and a participant that missed 18 questions. The average number of questions missed for the group was 11, which resulted in a grade of 71.1. Twelve of those surveyed, or 57%, scored 71.1 or lower on the survey, which is significant considering the majority of those surveyed, stated that they have 6-10 years of experience in this area.

Gender was not a significant factor in this analysis because there were 20 females and one male who participated in the survey. However, when years of overall nursing experience are incorporated there is a difference between those with less than one year of experience (average missed = 13.75, average grade = 63.8) and those with more

experience. There is an insignificant difference between those in the categories above one year of experience (1-5 years, 6-10 years, 11-15 years, and 16+ years). The ranges for those in these categories were average missed 10-10.7 and average grade 73.7-71.9. Incorporating time in this particular unit with the scores shows that participants in the less than one year group have the least understanding of pain with an average number missed questions of 13.75 and an average grade of 63.8. However, those with 1-5 years of experience have the best understanding of the group with an average number missed of 8.00 and an average score of 78.9. Interestingly, the participants that scored the best and the worst are in the same time in the unit group (6-10 years). Overall the groups were mixed with some of those with more time scoring worse than those with less time on the unit.

Relationship of Grade and Level of Education

Incorporating level of education with the scores could be considered insignificant because only four of the 21 participants have a level of education other than an Associated Degree. There was one participant with a diploma and three with Bachelor's degrees. The Pearson correlation was $r = .368$, $p = <0.05$. A positive correlation was noted between the grade and the level of education of the nurses in the study (see Table 2). Results indicate a positive correlation between the nurse's actual grade on the questionnaire and their level of education.

Table 2

Correlations between Grade/Level of Education

		Grade	Level of Education
Grade	Pearson Correlation	1	0.368*
	Sig. (2-tailed)		0.101
	N	21	21
Level of Ed	Pearson Correlation	0.368*	1
	Sig. (2-tailed)	0.101	
	N	21	21

* Correlation is significant at the 0.05 level (2-tailed).

Relationship of Grade and Years of Experience

The Pearson correlation was $r = .245$, $p = <0.05$. A positive correlation was noted

in Table 2 between the grade and years of experience of the nurses in the study (see Table

3). Results indicate a positive correlation between the nurse's actual grade on the

questionnaire and the years of experience.

Table 3

Correlations between Grade/Years of Experience

		Grade	Years of Experience
Grade	Pearson Correlation	1	0.245*
	Sig. (2-tailed)		0.284
	N	21	21
Years Exp	Pearson Correlation	0.245*	1
	Sig. (2-tailed)	0.284	
	N	21	21

* Correlation is significant at the 0.05 level (2-tailed).

An analysis was performed to determine the percentage of incorrect responses for

each question. As shown in Table 4, there were four questions that at least 76% of the

respondents answered incorrectly. One question had 76% of the participants answer

incorrectly, two questions had 81% of the participants answer incorrectly and one

question had 86% of the participants answer incorrectly. The area identified to have the

largest knowledge deficit was pharmacology. Of the 38 questions on the survey, twenty

(53%) were related to pharmacologic issues. All four of the questions missed by at least 76% of the participants are related to pharmacology. Eighty-one percent of the respondents were not aware that promethazine (Phenergan) is not a potentiator of opoid analgesics.

Table 4

Frequently Missed Questions

Question	Response (n)	Percentage
Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	True* - 5	24
	False - 16	76
Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.	True - 17	81
	False* - 4	19
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	<1%* - 3	14
	1-10 % - 9	43
	11-20% - 3	14
	21-40% - 2	10
	>41% - 3	14
	No answer - 1	5
Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:	A* - 3	14
	B - 1	5
	C - 0	0
	D - 16	76
	No answer - 1	5

* Indicates correct answer

There were two case studies included in the survey. The first case study, question 37, had two parts. Part A dealt with pain assessment and part B dealt with pain intervention. In this scenario, the nurse was assessing the pain of a patient that was smiling, talking, and joking with his visitors. When asked about his pain, the patient rated his pain as an 8 on a scale 1-10. Nineteen RN participants (90%) documented this patient's pain exactly as he reported it. Only nine RN participants (43%) reported that they would give the correct dose of pain medication that was needed to bring his pain under control. The second case study, question 38, also had two parts. In this scenario the nurse assessed the patient's pain and saw that the patient was grimacing. This patient also rated his pain as 8 on a scale of 1-10. Nineteen RN participants (90%) documented this pain as the patient reported and eleven RN participants (52%) would administer the correct dose of pain medication (see Table 5). The findings from the two case studies suggest that the RN participants took the patient's non-verbal behavior into consideration in their assessment and treatment of the patient's pain. There were no statistically significant differences found in knowledge and attitude scores.

Table 5

Participants Response to Case Studies

Case Study	Correct Response	Percentage
Case Study #1, Pain Assessment	19	90
Case Study #1, Pain Intervention	9	43
Case Study #2, Pain Assessment	19	90
Case Study #2, Pain Intervention	11	52

Chapter V
Discussion

Significance of the Findings

There was significant correlation between the level of education, years of experience, and time on the unit to pain management. The *Nurses Knowledge and Attitude Survey* was used to determine just that, the knowledge and attitude of nurses regarding pain medication.

Implications to Nursing

The findings of this study have several implications for nursing. Nurses need to know more about the drugs that are being administered to their patients. Nurses who have 6-10 years of experience seem to have a better of understanding of pain management. In addition to this, nursing research should also focus on the development of specific strategies to effectively teach nurses about pain management and integrate pain management as a major component throughout the surgical nurses' orientation and yearly educational skills. This may afford nurses the opportunity to provide effective care for surgical patients, as well as stimulate better patient outcomes regarding pain management.

Limitations of the Study

Limitations of this study were the small sample size of 21 and that all the participants were in one location. The survey that was revised was developed in 2008 and some of the information on the medications may now be out of date.

Recommendations for Future Research

It is vitally important for nurses to be more aware of the pharmacological properties of the medications that they are administering and be more aware of their

patient's need for pain medication. Further education in these areas in nursing curriculums may need to be incorporated along with yearly education at hospital based institutions. Also revision and updating of the survey tool to reflect current pain management is needed.

Importance for the Findings to Nursing

Employing solid pain management principles can make tremendous differences in patient's lives. Pain management not only leads to comfort and alleviates suffering, but can restore a degree of function that allows patients to engage in the activities that give their lives joy and a sense of value, meaning and purpose.

Because nurses are the professional clinicians who spend the greatest amount of time in direct contact with patients, they are the ones who most intimately understand the degree of suffering that untreated or undertreated pain can cause. Furthermore, they are the only professionals with the temporal and physical proximity to patients that allows them to assess pain and pain relief on an ongoing basis. Finally, nurses are the professionals who most often administer pain management interventions.

Conclusion

In conclusion, nurses are primarily responsible for the pain relief of the patient's on the surgical unit in an acute care facility. In order for nurses to work towards safe and effective nursing care for patients in pain, professional staff must implement and maintain change in pain assessment and be accountable for actions that will produce better outcomes for the patient and for the system that is providing care.

This study provides foundational research for expounding upon the knowledge and attitudes nurses perceive to have about pain management. Furthermore, the

realization exist that nurses frequently lack the knowledge about pain management to relay to their patients. Benner's theory Novice to Expert can be used as a pathway for nurses that ensures a process must take place for nurses to learn how to care appropriately for surgical patients.

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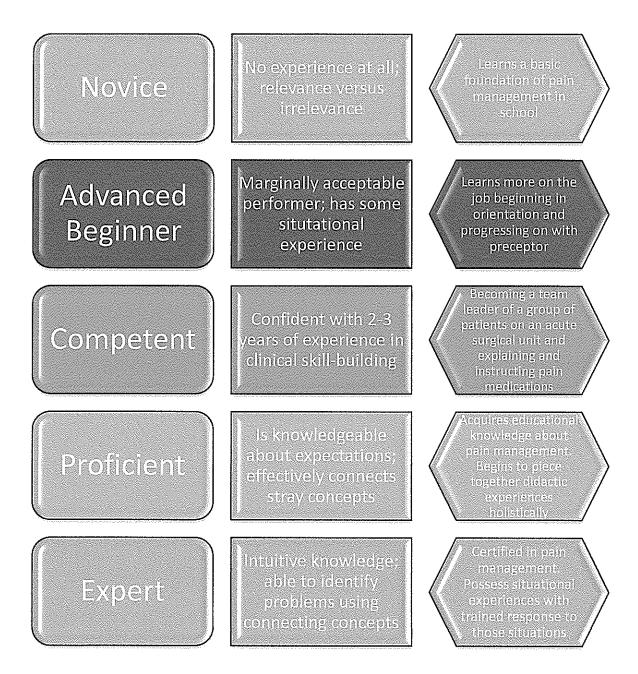Innis, J., Bikaunieks, N., Petrysben, P., Zellermeyer, V., & Ciccarelli, L. (2004). Patient

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Appendix A: Conceptual-Theoretical-Empirical Structure for Research

Patricia Benner's Model has five distinct phases of skill acquisition which with success

moves the nurse from novice to expert, in a given situation.

Novice	No experience at all; relevance versus irrelevance	Learns a basic foundation of pain management in school
Advanced Beginner	Marginally acceptable performer; has some situational experience	Learns more on the job beginning in orientation and progressing on with preceptor
Competent	Confident with 2-3 years of experience in clinical skill-building	Becoming a team leader of a group of patients on an acute surgical unit and explaining and instructing pain medications
Proficient	Is knowledgeable about expectations; effectively connects stray concepts	Acquires educational knowledge about pain management. Begins to piece together didactic experiences holistically
Expert	Intuitive knowledge; able to identify problems using connecting concepts	Certified in pain management. Possess situational experiences with trained response to those situations

Conceptual-Theoretical-Empirical Representation of the Research: Patricia Benner's

Model

Appendix B: Participant Information Form

I am a student in the Master of Science in nursing program at Gardner-Webb University, Boiling Springs, North Carolina. As part of my program, I am conducting a study on evaluating knowledge and attitudes of registered nurses regarding pain management on a surgical unit. Should you choose to participate in this study, you will be asked to complete a short demographic questionnaire and a survey consisting of 22 True and False questions, 14 Multiple Choice, and 2 Case Studies. This will be the only thing required of you during this study. This should take approximately 30 minutes. Do not include your name or any personal identification on the questionnaire or survey. You may withdraw at any time from this study. There will be no risk to you or compensation given for taking this survey. Information reported from the study will be from the group and no individual will be identified. Your participation in this study is strictly voluntary. The benefits of this study will assist in determining the effects of a pain management program. Should you choose to participate; the completion of the questionnaire and the survey will imply your consent. At your request, results of this study will be made available to you upon completion. If you feel you have received harm by completing this questionnaire or survey in any way, please contact Dr. Janie Carlton, Nursing Department, Gardner-Webb University, Boiling Springs, North Carolina 28017 or you may contact her by telephone at 704-761-5017. Thank you for your participation in this study.

Sincerely,

Barbara Turner RN BSN   Telephone # 336-468-8928

Graduate Student Gardner-Webb University

Appendix C: Demographic Data Form

This survey is anonymous and I ask that you do not identify yourself. Please list one

answer to the following question to the best of your ability.

1. Years of experience in nursing after passing the NCLEX

    a. Less than one year

    b. 1-5 years

    c. 6-10 years

    d. 11-15 years

    e. 16 years and over

2. Time on surgical unit

    a. Less than one year

    b. 1-5 years

    c. 6-10 years

    d. 11-15 years

    e. 16 years and over

3. Gender

    a. Male

    b. Female

4. Highest level of education completed

    a. Diploma

    b. Associate Nursing Degree

    c. Bachelor's

    d. Master's Degree

Appendix D: Knowledge and Attitudes Survey Regarding Pain

True/False – Circle the correct answer.

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

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

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

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

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

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

T   F   7. Combining analgesics that work by different mechanisms (e.g., combining an 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 potentiators 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 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
_____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?
_____a. < 1%
_____b. 5 – 15%
_____c. 25 - 50%
_____d. 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.

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.