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## Evaluating Knowledge and Attitudes of Graduate Nursing Students Regarding Pain

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Evaluating Knowledge and Attitudes of Graduate Nursing Students Regarding Pain  
Management

by

Eric B. Jackson

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science  
College of Nursing  
University of South Florida

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## Abstract

Insufficient pain management continues to be problematic for hospitalized patients throughout the country. It significantly interferes with a person's quality of life making it an issue of great concern to nurses in any setting. However, nurses do not do a good job of managing pain. The purpose of this evaluation was to assess graduate nursing students' knowledge and attitudes toward pain management.

Forty (n=40) graduate nursing students were asked to participate in the evaluation. All students agreed and completed the Demographic Data Form, Nurses Attitude Survey and the Pain Management and Principles Assessment. Thirty-eight females and two males participated in this study. The mean age was 35 years old (SD=9.77) with a range between 24 and 62. The majority of the participants were Non-Hispanic white (70%), followed by African American (10%), Hispanic (10%), Asian and others. The mean years of nursing experience was 10 years with a standard deviation 7.31.

The data showed that nursing students demonstrated inadequate knowledge regarding pain management. The mean score on the PMPAT was 66% (SD= 3.61).

The mean score on the Nurse Attitude Survey was 77 (SD=5.8) on a survey with scores that could range from 25 to 100. The higher the score the more favorable that nurse is towards pain management. The scores ranged from 69 to 91.

Knowledge and attitude scores had room for improvement, suggesting that the curriculum of the college could be improved. In addition, continuing education courses could be developed to support nurses' knowledge of pain management.

## Chapter I - Introduction

Insufficient pain management continues to be problematic for hospitalized patients throughout the country. Pain is an unpleasant emotional or sensory experience associated with actual or potential damage to the tissues (International Association for the Study of Pain Subcommittee on Taxonomy, 1994, pp 209-213). Pain is the most common reason for physician consultation in the United States (Turk 2004). It significantly interferes with a person's quality of life (Brevick 2008), making it an issue of great concern to nurses in any setting. Cancer pain is believed to have five dimensions, including sensory (pain intensity), affective (unpleasantness), behavioral (pain behaviors), cognitive (pain beliefs), and physiologic (impact on physical and social functioning) (Ahles, Blanchard & Ruckdeschel, 1983). The incidence of pain in hospitalized patients with cancer is 38% to 73%. Incidences tend to be higher when reported directly from the patients. (McMillan, Tittle, Hagan, Laughlin, et al 2000). At any given time, one in two Americans are in pain and one out of four has persistent or chronic pain. Leading causes of recurrent or persistent pain affecting Americans are headache pain, back pain, and neck pain. About four in 10 Americans say pain interferes with their mood, activities, sleep, ability to do work or enjoyment of life. Two-thirds report interference with any one of these (Stewart, Ricci, Chee, Morganstein and Lipton 2003).

### *Statement of the Problem*

Pain is a significant problem in all patients and a special problem in cancer patients. However, nurses may not do a good job managing pain. This may be due to inadequate knowledge related to pain. Also, nurses may harbor attitudes that are not conducive to good pain management. Students enter nursing programs with preconceived misconceptions regarding pain management, and some practicing nurses continue to hold on to these notions regardless of training (Plaisance & Logan, 2006). The combined lack of nursing training and preconceived misconceptions regarding pain management seriously hinders nurses' ability to properly manage pain (McCaffery and Ferrell 1996). Very few studies regarding pain management focus on nurses who have had advanced training in the areas of pharmacology and physical assessment (Plaisance & Logan, 2006). Therefore the purpose of this evaluation was to examine the knowledge and attitudes of graduate nursing students who have had advanced courses in pharmacology and physical assessment that included pain assessment management content. Many nurses lack the education and training for effectively managing pain, resulting in longer hospital stays and reducing the quality of life of patients. This knowledge deficit is glaringly obvious in our educational programs and is also demonstrated by practicing nurses (Plaisance & Logan, 2006).

### *Evaluation Question*

The following evaluation questions are addressed in this study:

1. What is the level of knowledge of pain management possessed by nursing students at the graduate level?
2. What are graduate nursing students' attitudes towards pain management?



### *Definitions of the Terms*

For purposes of this evaluation, the following terms are defined:

1. Pain: Pain is an unpleasant emotional or sensory experience associated actual or potential damage to the tissues (International Association for the Study of Pain Subcommittee on Taxonomy, 1994,pp 209-213).
2. Knowledge: Comprehension of facts, ideas, and information, gained through experience, instruction, and learning for a distinct use (Merriam-Webster Online Dictionary, 2009)
3. 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).
4. Pain Management: Pain Management encompasses all interventions used to understand and ease pain, and alleviate the origin of the pain according to the American Pain Society Quality of Care Task Force, (2005).

### *Significance of the Study*

This evaluation may shed light on the attitudes of graduate nursing students in this college towards pain management. It is the hope of the evaluator that all scores are very near 100, which would indicate an overall favorable response towards pain management. The examination gives researchers as well as faculty an actual baseline of graduate student's knowledge of pain management. Again, researchers hope the mean will be a passing score of at least 80 percent. Results may provide information about areas of strengths and weakness regarding pain management knowledge. It may also help influence curriculum change and illuminate the need for pain management to be included in more conference presentations and continuing education seminars. Results also may

possibly inspire more research in this area that could include more students and different schools. Evaluators hope to inspire students and faculty to seek further information in regards to pain management than what presented in the text.

## Chapter II - Review of the Literature

The purpose of this chapter is to present the review of the relevant literature. The literature identifies numerous impediments to effective pain management and, therefore demonstrates their impact on patient outcomes. Barriers analyzed include, knowledge deficits and negative attitudes of nurses possibly stemming from preconceived notions regarding pain management. A study conducted by McCaffery, Ferrell and Rhiner (1992) surveyed fourteen major textbooks used as standard references in medical-surgical and pharmacology courses. They found 1.6% of the total textbook pages were devoted to pain content. Also, commonly used pain terminology such as addiction, dependence, and tolerance were seldom mentioned in chapters on pain management.

### *Knowledge*

It is well documented that pain assessment and pain management are integral parts of the nursing care given to patients. In a study by Rahimi-Madiseh, Tavakol and Dennick, (2010) investigators sought to quantify the current knowledge and attitudes toward pain of nursing students in Iran. They conducted a cross-sectional study using a well-validated questionnaire entitled the *Knowledge and Attitudes Regarding Pain Tool*. The results showed severe knowledge deficit relating to pain and its management. It suggested a real need for improving the content of pain and management in the undergraduate nursing education curriculum.

The presence of pain is one of the most common reasons people seek physicians for care, and it continues to be undertreated. Inadequate pain management is linked to

nurse's failure to assess pain and to intervene at the appropriate time. It has also been thought to result from a lack of attention paid to pain management in nursing curriculum. In a study conducted by Pliasance and Logan (2006) researchers investigated nursing student's knowledge and attitudes about pain management. This descriptive study used the *Knowledge and Attitudes Regarding Pain Tool*. They collected data from clinical nursing students (n= 313). The study incorporated students from the baccalaureate and from the associate degree nursing programs. 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) ( $t [311] = -3.321, p = .001$ ). Combined their scores were 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.

Inadequate nursing education can be more readily seen in patients with cancer. These patients routinely require much more pain medicine than other acutely ill patients thus further emphasizing the need for accurate and precise intervention from nurses. A

study by Sheehan, Webb, Bower and Einsporn (1992) was conducted to identify the level of cancer pain knowledge among baccalaureate student nurses and to determine whether specific activities affect this level of knowledge. Two questionnaires were administered to 82 baccalaureate student nurses in the final semester of their program. Even though the students displayed a realistic perspective about the severity and prevalence of cancer pain and psychological dependence, specific knowledge deficits and negative attitudes suggest the possibility of inadequate pain management. Some specifics included were: students believed the maximal analgesic therapy should be delayed until the prognosis was less than 12 months, the proportion of patients whose pain can be controlled by appropriate therapy is less than is possible, increasing pain is related to tolerance rather than to progression of the diseases, the preferred route of administration is intravenous rather than oral, and the degree of respiratory depression, rather than constipation does not decrease with repeated administration. Significant positive correlations ( $p \leq 0.05$ ) were found between the age and cancer pain knowledge and between attendance at seminars / workshops and time spent reading professional journals articles. This study suggested the need for basic cancer pain management education at the undergraduate level as well as continuing education workshops.

Many nursing programs spend little time educating students about pain management. Between the years 2000 and 2002, a baccalaureate-nursing program at a university in central Virginia surveyed sophomore, junior, and senior nursing students using McCaffery's Pain Knowledge and Attitude Survey at the beginning and end of each academic semester. During the same time period, faculty also completed the survey and answered open-ended questions pertaining to the inclusion of pain management in course

content. The researchers hoped 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 and the extent to which it is integrated into the curriculum.

The results from the survey revealed gaps in their understanding of the use of meperidine, pain experienced during sleep and believing patients self-reports of pain. Other areas in need of improvement were the incidence of respiratory depression, equianalgesic conversions and the use of placebos.

Ultimately these investigators concluded student's knowledge and attitudes improved as they progressed through the program, but there were many areas in which the minimal acceptable scores were not met. It is imperative that the faculty take a strategic approach to educating nursing students about pain management and related issues.

Nurses have a key role in effective pain management: The nurse's accurate assessment, prompt intervention, and evaluation of pain relief measures are necessary for positive patient outcomes (Ersek & Poe, 2004). Inadequate pain relief has been attributed to many factors, including unwarranted patient fears and concerns about analgesia and clinicians' inability to adequately assess and manage pain (APS, 2003). The literature suggests that inadequate pain relief may also stem from nurses' acknowledgment that a main source of pain management information was nursing school (Clark et al. 1996). Although many nurses in those studies rate their knowledge as adequate, their mean scores on knowledge and attitude surveys did not reflect current knowledge of pain management practices.

Two thirds of sample of nursing students (n=32) were unable to complete a systematic pain assessment. Intensity of pain was the most frequently identified dimension, and approximately one half of the students re-evaluated the effect of suggesting pain-relief interventions. Mostly the students were insufficient in the area of pain assessment (Lofmark, Gustavasson, and Wikblad 2003). Another study conducted in the United Kingdom involving entry level nursing students showed that they exhibited an unrealistic or exaggerated fear of patient's risk of addiction when analgesia was prescribed for routine treatment (Allcock & Toft, 2003).

A lack of knowledge of pharmacology was also noted in a study involving last year nursing students in Australia and Philippines. A total of 150 students in three schools of nursing were surveyed to assess their knowledge of pain mechanisms and basic treatment principles. (Chui, Trinca, Lim and Tuazon, 2003) They concluded students had insufficient knowledge about basic pain mechanisms, complex regional pain, and the management of chronic, noncancerous pain. However, most students rated the undergraduate exposure to pain management as insufficient.

### *Attitudes*

A study by McCaffery and Ferrell (1996), compared practicing nurses and non-nursing college student's decisions about pain assessment and use of analgesia (n=85). They concluded that college students had several misconceptions about pain management. College students were less likely to increase an analgesic dosage than practicing nurses when faced with a scenario involving a patient in pain. Students also reported greater concerns about the risk of addiction than practicing nurses. These finding were a complete surprise to the researchers. They anticipated that the students would

have no strong beliefs towards pain management. These findings support the argument that students enter schools of nursing with strong preconceived misconceptions towards pain management. A study conducted by McMillan, Tittle, Hagan, and Small (2005) was designed to determine the changes in knowledge and attitudes of pain resource nurses (PRNs) as a result of an intensive pain management course. Researchers used a pain survey to assess attitudes of nurses towards patients in pain. Only after post-test instructions did the students show impressive item gains on the instrument that measures attitudes towards patients in pain. The majority of the items show an increase in the number of PRNs who answered correctly or in a positive direction. Scores on the survey regarding general pain management attitudes were discouraging. The mean score was slightly lower for the PRNs on the pre-test ( $X=66.6$ ) than for the staff nurses ( $X=71.8$ ).

#### *Summary of the Literature*

Evidence from the past decade reveals nursing education itself has been a barrier to effective pain management (Goodrich, 2005). Nursing students have knowledge deficits related to cancer pain and were not prepared to develop holistic care plans for pain management (Sheehan, Webb, Bower, Einsporn, 1992). Research indicates that healthcare providers, including nurses, may not be well prepared in pain management because of deficiencies in nursing and medical curriculum as well as some healthcare providers' prevailing negative attitudes towards patients' response to pain (Lasch, Greenhill, Wilkes, Carr, Lee, Blanchard 2002). Although pain management is important to delivering comprehensive patient care, nursing students do not have a sound knowledge base. A fundamental lack of knowledge at the undergraduate level may negatively influence continued learning about pain when nurses begin to practice. New



graduates may not appreciate how complicated pain management is and may not realize they are ignorant about pain as a science (Chiu, Trinca, Glim, Tazon, 2003). Results from a survey questionnaire showed there was a severe deficit in knowledge related to pain and its management. It is argued that there is real need for improving the content of pain and its management in the undergraduate nursing education and curriculum (Rahimi-Madiseh, 2010). Despite major initiatives by accrediting agencies, management is still inadequate. Nursing faculty need to critically review their curriculum to determine whether students are being taught in depth and up to date information that incorporates evidence based research and current standards of care (Plaisance & Logan 2006).

### Chapter III – Methods

In this chapter the methods of the study are presented. This includes the characteristics of the sample such as the inclusion criteria for participation, variables under investigation and a description of the instruments of measurement used to collect data. In addition, the procedures for data collection and the method of analysis also are discussed.

#### *Sample*

For the purpose of this evaluation, the targeted population is Masters nursing students having completed advanced courses in physical assessment or pharmacology. The sample consisted of 40 graduate nursing students. These students were currently pursuing Masters of Science degree at the University of South Florida. Oncology students who have had the required symptom management courses were excluded.

#### *Instruments*

The instruments that were utilized in this study were the Nurse's Attitude Survey (NAS) (McMillan, Tittle, Hagan, Laughlin, and Small 2000) and the Pain Management Principles Assessment Tool (PMPAT)(McMillan, Tittle, Hagan, Laughlin, and Small 2000), in addition to a demographic data questionnaire. Both tools were chosen as they clearly distinguish between knowledge deficits and attitudinal barriers in pain management, which make them appropriate for the evaluation.

*Nurses Attitude Survey.* The NAS, created by McMillan and colleagues (2000), is a 25-item instrument, which uses a four-point Likert -type format to assess attitudes toward pain management. Responses for the instrument can range from strongly disagree to strongly agree, with item scores varying from 1 to 4 for each item. The higher the score, the more positive attitudes nurses have. The survey includes items on scheduling analgesics, use of opiates, pain assessment, goals of pain assessment, and misconceptions about pain management and non-pharmacologic management of pain.

*Validity and reliability.* Internal consistency was found using Cronbach's alpha ( $r=0.70$ ), which was adequate. Validity was also demonstrated by a significant difference ( $p<.01$ ), from pre-test to post-test among nursing students.

#### *Pain Management and Principles Assessment Test*

The Pain Management and Principles Assessment Test(PMPAT) is a 31-item multiple-choice test with four response choices per question. The questionnaire was designed to test pain management knowledge regarding physiology, pharmacology, characteristics of pain management such as addiction, physical dependence, tolerance, and principles of assessment and management. Scores for the survey ranged from 0-31 or 0 to 100%, with higher scores meaning more questions were answered correctly (McMillan, Tittle, Hagan, Laughlin, & Small 2000).

The PMPAT was designed based on a blueprint from previous research studies attesting to its content validity (McMillan, Tittle, Hagan, Laughlin, and Small 2000). Validity of the instrument was also tested using a pre and posttest method among 28 nursing students before and after a three hour pain management course. Scores were found to be significantly improved from pre to post test ( $t=6.76$ ,  $p<0.01$ ) supporting

validity. Test-retest reliability was also discovered to be significantly high ( $r= 0.84$ ,  $p=0.00$ ).

#### *Demographic Data Form*

Each participant was also asked to complete a demographic data form. The form incorporates questions on age, gender, ethnicity, how many semesters had been completed in the MS program at USF, specialty concentration, work experience and current work status and any additional training in pain management.

#### *Procedures*

The students were approached during class and invited to participate. Prior to the administration of the questionnaires, the instructor was asked to leave the classroom, while the investigator remains in the room to supervise the study, distribute the surveys as well as collect them. A brief explanation will be given regarding the evaluation, noting that there were no risks or benefits to participants for taking part in the study. Students were given the opportunity to ask relevant questions regarding the evaluation. Finally, students were asked to carefully read the instructions given and work individually on their questionnaires without the aid of textbooks or colleagues. The forms were returned to the investigator and the students' participation in the study was finished.

#### *Data Analysis*

Demographic data were analyzed to describe the sample. Analysis included means, standard deviations, frequencies and percentages.

Evaluation question one asks: "What is the level of knowledge of pain management possessed by nursing students at the graduate level?" To answer this question, means and standard deviations were calculated.

Evaluation question two asks: “What are graduate nursing students’ attitudes towards pain management?” To answer this question, means and standard deviations were calculated.

## Chapter IV - Results, Discussion and Conclusion

The following chapter presents the findings of this evaluation. First the sample is described and then the evaluation question is addressed and the results are shown in a table format, and then discussed.

### *Results*

Forty (n=40) graduate nursing students were asked to participate in the evaluation. All students agreed and completed the demographic data form, Nurses Attitude Survey and the Pain Management and Principles Assessment Test. Thirty eight females and two males participated in this evaluation (N=40). The mean age was 35 years old (SD=9.77) with a range between 24 and 62. The majority of the participants were Non-Hispanic white (70%), followed by African American (10%), Hispanic (10%), Asian and others (Table 1). The mean age was 34.7 with a standard deviation of 9.8. The mean years of nursing experience was 10 years with a standard deviation of 7.31 (Table 2).

Table 1

*Frequency and Percent of Students by Ethnicity and Gender.*

<b>Variable</b>	<b>Frequency</b>	<b>Percent</b>
<b>Ethnicity</b>		
Non-Hispanic White	28	70
African American	4	10
Hispanic	4	10
Asian	2	5
Other	2	5
<b>Gender</b>		
Female	38	95
Male	2	5

Table 2

*Means and Standard Deviations for Student's Age and Years of Experience in Nursing*

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Age</b>	40	34.7	9.8
<b>Years of Experience</b>	40	10	7.31

*Knowledge test scores.* The average score on the PMPAT exam was 66% with a standard deviation of 3.61. Scores ranged from 30-95%.

Table 3

*Frequency and Percent of Students Passing Each Item of the PMPAT*

<b>Knowledge Item</b>	<b>Frequency</b>	<b>Percent</b>
Nursing action if the patient continues to have pain after receiving the maximum ordered dose of analgesics	38	95
Helping patients who are afraid of opioids	36	90
The most accurate and reliable judge of the intensity of the cancer patient's pain	35	87.5
Who should have the most control over the patient's pain management regimen	35	87.5
Using distraction for pain management	35	87.5
Managing both cancer and non-cancer-related pain	35	87.5
Prostatic cancer has spread to a patient's bones. In planning for his care, the primary factor to consider is quality of life.	35	87.5
Define tolerance	35	87.5
The percentage of cancer patients who suffer pain at some point during their illness	34	85
Differentiate the following: physical dependence, tolerance, decreases in level of analgesic in the blood, and addiction.	33	82.5
Primary benefit of providing steady state analgesia	32	80

<b>Knowledge Item</b>	<b>Frequency</b>	<b>Percent</b>
Take into account which variables that affect the expression of pain	30	75
Symptoms of chronic pain	29	72.5
Giving appropriate doses: physicians under-prescribe and nurses under- medicate	29	72.5
The action of naloxone	26	65
The preferred route of administration of narcotic analgesics for cancer patients	25	62.5
Principles underlying analgesic administration for persons with cancer pain	27	62.5
Characteristics of acute pain	24	60
Meperidine toxicity	24	60
Ninety percent of cancer patients suffer pain	23	57.5
All intensities of pain can be treated with cutaneous stimulation	23	57.5
Steady state analgesia methods	23	57.5
Duration of action of analgesic drugs	22	55
Mechanisms of action of analgesics	22	55
Physiology: Pain modulated by what?	19	47.5
Percent of patients receiving opiate analgesics around the clock who become addicted	19	47.5
When a patient having pain due to cancer is receiving analgesic medication on a PRN basis, level of discomfort when patient should request additional pain medication	17	42.5
Physiology: Nerve fibers -Dull and aching pain	15	37.5
Gate Control Theory	15	37.5
Pain management goals for patients	13	32.5
Basis for a nursing decision to administer pain medication	12	30



*Attitude scores.* The mean score on the Nurse Attitude Survey was 77 (SD=5.8) on a survey with scores that could range from 25 to 100. The higher the score the more favorable that nurse is towards pain management. The scores ranged from 69 to 91 (Table 4).

Table 4

*Means and Standard Deviations on Nurse Attitude Survey*

<b>Attitude Item</b>	<b>Mean</b>	<b>Standard Deviation</b>
Continuous assessment of pain and medication effectiveness is necessary for good pain management.	3.7	.42
The level of discomfort when a patient should request additional pain medication when having pain due to cancer and receiving analgesics PRN.	3.4	.64
Estimation of pain by a MD or RN is a more valid measure of pain than patient self report.	3.4	.64
Patients (and/or family members) may be hesitant to ask for pain medications due to their fears about the use of narcotics.	3.3	.56
Distraction and diversion of patient's attention (use of music, relaxation) can decrease the perception of pain.	3.3	.48
A patient should experience discomfort prior to getting the next dose of pain medication.	3.3	.64
Giving narcotics on a regular schedule is preferred over a prn schedule for continuous pain.	3.2	.77
If a patient continues to have pain after receiving pain relieving medication(s), the nurse should contact the physician.	3.2	.46
Lack of pain expression does not necessarily mean lack of pain.	3.2	.57
A constant level of analgesic should be maintained in the blood to control pain effectively.	3.1	.49
The nurse can make a more accurate assessment of the patient's pain than the patient/family can.	3.1	.69
Patients receiving narcotics around the clock for cancer pain are likely to become addicted.	3.0	.61
Cancer pain can be relieved with appropriate treatment with anti-cancer drugs, radiation therapy and/or pain relieving drugs.	3.0	.55
Patients in pain can tolerate high doses of narcotics without sedation or respiratory depression.	2.9	.97

<b>Attitude Item</b>	<b>Mean</b>	<b>Standard Deviation</b>
Patients can be maintained in a pain free state.	2.9	.61
Patients with chronic pain should receive pain meds at regular intervals with or without the presence of discomfort.	2.9	.69
Patients having severe chronic pain need higher dosages of pain meds compared to acute pain.	2.9	.87
Patients should be maintained in a pain-free state.	2.9	.73
Patients receiving narcotics on a PRN basis are more likely to develop clock-watching behaviors.	2.8	.81
Patients receiving around the clock narcotics are at risk for sedation and respiratory depression.	2.8	.82
Increasing analgesic requirements and physical symptoms are signs that the patient is becoming addicted to the narcotic.	2.8	.64
Cutaneous stimulation (e.g. heat, massage, ice) are only effective for mild pain.	2.8	.64
Patients (and/or family members) have a right to expect total pain relief as a goal of treatment.	2.75	.89
If a patient (and/or family member) reports pain relief and euphoria, the patient should be given a lower dose of the analgesic.	2.7	.76
The cancer patient and family should have more control over the schedule for analgesics than the health professional.	2.7	.65

The most negative attitudes expressed by these graduate nursing students involved whether the patient and family should have control over the pain management regimen, and whether pain relief and euphoria are undesirable. Also low were if patients (and/or family members) have a right to expect total pain relief as a goal of treatment.

### *Discussion*

The sample size of this evaluation is forty (n=40) with only two of the participants being male. This is one limitation of the evaluation because males make up 20 percent of the nursing students in the USF nursing program. The average years of experience were ten years; this large number of reported years of experience was

important to the study. Evaluators sought to survey nurses with experience as well as nurses who had taken graduate level nursing courses.

The average score on the PMPAT was 66% with a standard deviation of 3.61. This is well below a failing average for graduate nursing students. Some of the areas that were most frequently missed were knowledge based questions that should alert the USF nursing faculties to their shortcomings in the curriculum. Questions like: The action of naloxone, Principles underlying analgesic administration for persons with cancer pain, Steady state analgesia methods, and Meperidine toxicity had a less than 60 percent pass rate.

Students did much better in physiology and planning; these were assessment-based questions, which could be indicative of the high average of years of experience the group reported. But with an overall score of 66%, outcomes were much lower than expected which suggests a glaring weakness in the College of Nursing's curriculum as far as pain management is concerned. Given the high mean of reported number of years of experience, these nurses should have had a wealth of experience managing pain. These results suggest that some of these nurses were doing it badly.

The mean score on the Nurse Attitude Survey was 77 (SD=5.8) on a survey with scores that could range from 25 to 100. The higher the score the more favorable that nurse is towards pain management. The scores ranged from 69 to 91. This score represent a marginally favorable attitude towards pain management. Again these results were surprising based on the amount of years of experience these nurses reported.

## *Conclusion*

This evaluation supports the importance of addressing pain management education and attitudes of those individuals that are directly responsible for pain management. Attitudes of nurses directly affect patient care and outcomes. Pain management education evaluation is a direct indication of how patient pain management will be managed. In this evaluation, participants indicated an overall favorable attitude towards pain management but failed miserably in the area of basic principles of pain management. This is one of the glaring reasons why pain management continues to be problematic for patients in this country. The results of this survey support the conclusions of many other studies referenced. For instance, Plaisance & Logan (2006) concluded that many nurses are deficient in pain management education and training therefore leading to longer hospital stays and poor patient outcomes. The participants in this study had an average of 10 years of nursing experience and three nurses had over thirty years. Every participant in this study had completed an undergraduate course in pharmacology and a graduate course in pharmacology. All were currently in the last phases of a graduate level health assessment course. Pharmacology was the area with most glaring weakness, whereas planning seemed to be the groups' strongest knowledge base. In conclusion, it pleasing to know nurses have a overall favorable attitude towards pain management but more emphasis but be placed on the understanding of the most fundamental concepts of pain management.

Given that patients are having shorter hospital stays, it is unfortunate that nurses seemed to believe they should have more control over the pain management regimen than patients and families. Also, it is disturbing that nurses do not believe patients have the

right to expect total pain relief as a goal of treatment. Cutaneous stimulation (e.g. heat, massage, ice) would possibly be utilized more if nurses believed it is effective for moderate to severe pain.

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## Appendices

Appendix A: Pain Management Principles Assessment Test

**PAIN MANAGEMENT PRINCIPLES ASSESSMENT TEST**

Parallel Form

**DIRECTIONS:** Circle the letter in front of the one best answer.  
You may write **ON THE TEST**.

1. What percentage of cancer patients suffers pain at some point during their illness?
  - a. 10%
  - b. 30%
  - c. 60%
  - d. 90%**
  
2. What percentage of cancer patients suffer pain for longer than one month?
  - a. 20-30%
  - b. 40-50%
  - c. 70-80%**
  - d. 100%
  
3. If the patient continues to have pain after receiving the maximum ordered dose of analgesics, what should the nurse ALWAYS do?
  - a. Increase the dose, slightly.
  - b. Explain the risks of high doses of narcotics to the patient/family.
  - c. Reassure the patient that the medication will work.
  - d. Call the physician.**
  
4. The preferred route of administration of narcotic analgesics for cancer patients is which of the following?
  - a. Intravenous
  - b. Intramuscular
  - c. Subcutaneous
  - d. Oral**
  - e. Rectal
  
5. When a patient having pain due to cancer is receiving analgesic medication on a PRN basis, at what level of discomfort would it first be appropriate for the patient to request additional pain medication?
  - a. Before the pain returns**
  - b. When pain is mild
  - c. When pain is moderate
  - d. When pain is severe
  - e. When the pain is intolerable

The most accurate and reliable judge of the intensity of the cancer patient's pain is which of the following?

- a. The treating physician
  - b. The patient's primary nurse
  - c. **The patient**
  - d. The pharmacist
  - e. The patient's spouse or family
6. What percentage of patients receiving opiate analgesics around the clock become addicted?
- a. **Less than 1%**
  - b. 5-10%
  - c. 25%
  - d. More than 25%
7. Which of the following statements accurately describe the mechanism of action of analgesics?
- a. **Opiates act in the CNS to decrease the transmission/perception of pain.**
  - b. Narcotics act at the periphery to decrease the transmission of pain.
  - c. Non-narcotics act in the CNS to decrease the transmission/perception of pain.
  - d. Narcotics work by the Gate Control mechanism.
8. Which kind of pain can be treated with cutaneous stimulation?
- a. Mild pain only
  - b. Moderate pain only
  - c. Severe pain only
  - d. **Any intensity of pain**
9. Which of the following statements accurately reflects principles underlying analgesic administration for persons with pain due to advanced cancer?
- a. **Prolonged administration leads to tolerance which requires escalating amounts of analgesic to control pain.**
  - b. Prolonged administration often result in addiction, so drug amounts must be carefully limited in the early stages of the disease.
  - c. Narcotics should be offered on an "as needed" basis to prevent drug dependence.
  - d. Around the clock administration of narcotics (rather than PRN) results in clock-watching in patients and families.

10. Which group of symptoms are more related to chronic pain?
- Decreased appetite, decreased energy, sleep disturbances, apathy, decreased blood pressure.**
  - Grimacing, fast heart rate, fast respiratory rate, elevated blood pressure, sweating.
  - Thrashing, grimacing, elevated heart rate, cold and clammy extremities.
  - Groaning, elevated blood pressure, irritability, sweating
11. Which of the following drugs have the longest duration of action?
- Codeine
  - Methadone**
  - Meperidine
  - Morphine
12. Acute pain is frequently accompanied by which of the following?
- Increased caloric requirements, increased temperature**
  - Increased oxygen requirements, decreased temperature
  - Decreased caloric requirements, decreased temperature
  - Increased caloric requirements, decreased temperature
13. Dull and aching pain sensations are the responsibility of which of the following?
- A-delta fibers
  - C fibers**
  - Opiate receptors
  - Small myelinated fibers
14. According to the Gate Control Theory, the location in the nervous system that is responsible for “gating” is located in:
- The substantia gelatinosa in the spinal cord**
  - The nociceptors in the skin
  - Deep nociceptors in the muscles
  - White matter in the brain
15. Pain is modulated by which of the following:
- Opiate receptors mu, gamma, and kappa**
  - A-delta fibers
  - C-fibers

16. Mrs. Colton, a 160 pound female is 24 hours post-op following abdominal hysterectomy. She received a dose of morphine sulfate 8 mg IM at 4:00 pm. It is now 6:30 pm and she is complaining of pain and requesting another injection. Her pain is most likely related to which of the following:
- Physical dependence on the analgesic
  - Tolerance to the prescribed dose of analgesic
  - A decrease in the blood level of the analgesic**
  - Early onset of addiction to the analgesic
17. Following an abdominal hysterectomy, your pain management goal for Mrs. Colton should be which of the following:
- Enough pain relief to allow her to cooperate in post-op care
  - To provide enough pain relief to keep Mrs. Colton from crying out
  - To relieve her pain to a level that she can tolerate
  - To provide her complete pain relief**
18. Mr. West has prostatic cancer that has spread to the bones. In planning for his care, the primary factor to consider is:
- The likelihood that he will need higher doses later on
  - The probability that he will become addicted to narcotics
  - His overall quality of life**
  - The wishes of his family regarding pain relief
19. In assessing the patient's pain, the nurse should take into account which of the following variables which may affect the expression of pain:
- Environment and social consequences of expressions of pain
  - Cultural diversity in the ways patients express their discomfort
  - The observable measurable actions of the patient
  - a and b
  - a, b, c**
20. The action of naloxone is:
- To enhance the effect of narcotic analgesics
  - To act as a opiate antagonist**
  - To act as a narcotic agonist
  - To act as a respiratory stimulant
21. Research suggests that:
- Physicians underprescribe and nurses undermedicate for pain**
  - Physicians prescribe appropriately and nurses undermedicate
  - Physicians underprescribe and nurses give optimal doses based on those orders
  - Physicians prescribe appropriately and nurses medicate appropriately in the majority of cases

22. One significant disadvantage of meperidine is:
- It is more expensive than morphine
  - It has more CNS toxicity than morphine**
  - It is more addicting than morphine
  - It is more difficult to administer than morphine
23. Which of the following methods of narcotic administration provides steady state analgesia?
- Patient controlled analgesia using a pump
  - Intravenous drip of opiates**
  - Intravenous bolus administration of narcotics
  - Intramuscular injections every two hours
24. The primary benefit of providing steady state analgesia is which of the following?
- It is cost effective because it uses less nursing time
  - The patient receives less narcotic overall
  - Respiratory depression is less likely to occur
  - The patient is more comfortable**
25. A nursing decision to administer pain medication should be based on all of the following EXCEPT:
- The patient's description of the quality of his/her pain
  - The family's request to keep the patient comfortable
  - The nurse's objective assessment of the intensity of the pain**
  - The patient's subjective report of the intensity of her/his pain
  - The nurse's knowledge of the action of narcotic analgesics
26. Who should have the most control over the patient's pain management regimen?
- The patient**
  - The family
  - The nurse
  - The physician
  - The pharmacist
27. **DEFINITION:** After repeated administration of an opiate, a given dose will begin to lose its effectiveness, resulting in the need for larger and larger doses. This begins with decreased duration of analgesia and then progresses to decreased analgesia.  
The above is a definition of which of the following?
- Addiction
  - Physical dependence
  - Tolerance**
  - Addictive personality

28. Mrs. Easton has metastatic breast cancer with painful lesions in her spine. She is reluctant to take her morphine as often as needed because she is afraid of drugs. You offer her a backrub and leave her with a heating pad on her back. This is an example of:
- a. **Cutaneous stimulation**
  - b. Distraction
  - c. Diversion
  - d. TLC (tender loving care)
29. Another approach you might have tried with Mrs. Easton involves concentrating on a task such as needlepoint or a crossword puzzle or reading a favorite book. This is an example of:
- a. Cutaneous stimulation
  - b. Avoidance
  - c. **Distraction**
  - d. TLC (tender loving care)
30. Mrs. Sikes is a 72 year old woman with breast cancer which has metastasized to her pelvis. She also has moderately severe arthritis. Which of the following statements about managing her pain are most likely true?
- a. Morphine is the drug of choice because it will treat pain from any source.
  - b. **Morphine and a non-steroidal anti-inflammatory drug together would get the best results with the least side effects.**
  - c. A non-steroidal anti-inflammatory drug alone would probably be best because her primary problem is bone pain.
  - d. Mrs. Sikes should not expect pain relief because of the severity of her disease.





12.	Patients receiving around the clock narcotics are at risk for sedation and respiratory depression.	SD	D	A	SA
13.	Patients having severe chronic pain need higher dosages of pain meds compared to acute pain.	SD	D	A	SA
14.	Patients should be maintained in a pain-free state.	SD	D	A	SA
15.	Lack of pain expression does not necessarily mean lack of pain.	SD	D	A	SA
16.	Cancer pain can be relieved with appropriate treatment with anti-cancer drugs, radiation therapy and/or pain relieving drugs.	SD	D	A	SA
17.	If a patient continues to have pain after receiving pain relieving medication(s), the nurse should contact the physician.	SD	D	A	SA
18.	Patients receiving narcotics around the clock for cancer pain are likely to become addicted.	SD	D	A	SA
19.	Distraction and diversion of patient's attention (use of music, relaxation) can decrease the perception of pain.	SD	D	A	SA
20.	A constant level of analgesic should be maintained in the blood to control pain effectively.	SD	D	A	SA
21.	Increasing analgesic requirements and physical symptoms are signs that the patient is becoming addicted to the narcotic.	SD	D	A	SA
22.	The cancer patient and family should have more control over the schedule for analgesics than the health professional.	SD	D	A	SA
23.	The nurse can make a more accurate assessment of the patient's pain than the patient/family can.	SD	D	A	SA
24.	Cutaneous stimulation (e.g. heat, massage, ice) are only effective for mild pain.	SD	D	A	SA

Circle the response that you most agree with.

25. When a patient in pain due to cancer is receiving analgesic medication on a **PRN** basis, at what level of discomfort would it first be appropriate for the patient to request additional pain medication?

1. Before pain returns
2. When pain is mild
3. When pain is moderate
4. When pain is severe

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## Appendix C: Demographic Data Sheet

### Demographic Data Form

1. Age range?
  - a. 20-30
  - b. 31-40
  - c. 41-50
  - d. 51 or older
  
2. Gender?
  - a. Male
  - b. Female
  
3. Years of nursing experience?
  - a. Less than 1 year
  - b. 1 to 5 years
  - c. 5 to 10 years
  - d. 11 to 20 years
  - e. 20 or more years
  
4. What is your ethnicity?
  - a. Asian
  - b. African-American
  - c. Hispanic
  - d. Non Hispanic White
  
5. Pain management training?
  - a. Yes
  - b. No