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A COMPARISON BETWEEN VA AND HOSPICE NURSES IN THEIR KNOWLEDGE OF CANCER PAIN MANAGEMENT

by

BONNY S. KARR

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science
College of Nursing
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August 1998

Major Professor: Susan C. McMillan, PhD, RN, FAAN

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Dedication

I would like to dedicate this thesis in memory of my mother. She was intelligent and kind and was an inspiration to me as a mother and a nurse. I am the person I am today because of her.

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An Abstract

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The inability to manage patients' pain is a dilemma that continues to plague the nursing profession. Currently, pain can be managed very effectively in up to 90% of patients with cancer, but lack of knowledge prevents many patients from receiving effective pain relief. Throughout the country, nurses lack adequate knowledge of pain management which interferes with effective pain relief. Nurses who specialize in cancer or hospice care tend to be more knowledgeable about pain and pain management than medical-surgical nurses. The continuous consolidation of nursing units is occurring in many hospitals. Due to the reduction of personnel, oncology units have been dissolved and the patients have been assimilated into the remaining units. The nurses on these units are expected to effectively manage patients' cancer pain.

The purpose of this study was to compare differences in levels of knowledge of cancer pain management between hospice nurses ($n = 28$), and VA nurses ($n = 27$), and identify factors related to that knowledge. The Pain Management Knowledge Test - Revised, a 31-item multiple choice test measuring aspects of pain knowledge, was completed by Hospice nurses and VA nurses in a large southern city.

Hospice nurses scored significantly higher ($p = .000$) than VA nurses. Correlations between age and score, and years of experience and score found no relationship. Nurses who had continuing education on pain management scored significantly higher ($p = .003$) than nurses who had not had continuing education on pain management. Eighty-two percent of hospice nurses had pain management CE and only thirty percent of VA nurses had pain managment CE. Mean knowledge scores of the hospice nurses were higher than mean scores of the VA nurses regardless of their educational level. Pain knowledge scores appeared to be more related to CE than level of educational achievement.

The results of this study support the need for continuing education. Nurses' knowledge levels increase as they are exposed to correct information on pain

management. Promoting education programs throughout the year from new graduate nurse to advanced clinical nurse may increase cancer pain knowledge and thus, provide patients with the pain relief they deserve.

Abstract Approved: Susan C. McMillan

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CHAPTER I

INTRODUCTION

Statement of the Problem

The inability to manage patients' pain is a dilemma that continues to plague the nursing profession. The National Institutes of Health (1986) stated that current approaches to pain management are inadequate and until we see better outcomes, this will remain in the forefront of national concern. In 1990, the World Health Organization (WHO) placed a high priority on the management of pain because of the breadth of this national problem. Currently, pain can be managed very effectively in up to 90% of patients with cancer (U.S. Department of Health and Human Services, 1994), but nurses' lack of knowledge affects many patients whose pain is not controlled so that every aspect of life is affected - spiritual, psychological, physical, social and cultural (Hauck, 1986). Throughout the country, nurses lack adequate pain knowledge that interferes with effective pain management (Ferrell, Eberts, McCaffery, & Grant 1991). Pain assessment skills are taught in all nursing programs, but many have different philosophies on teaching pain management, and there is no consistency among programs. Because of these different philosophies, up-to-date information on pain management may not be taught. Ferrell, McGuire and Donovan (1993) indicate pain content in curricula around the country may need to be reevaluated.

In the past, little emphasis was placed on the importance of standardized methods of measuring pain in each institution, and although many assessment tools are available, they are not used consistently. Improved communication between colleagues, patients and families is needed to allow better outcomes (Ferrell, et al., 1991). Organized

documentation among staff and regular feedback between staff and families also can keep everyone focused in the same direction, increasing knowledge of patients' pain, thus, increasing the likelihood of successful management. Medical record audits have shown a lack of adequate pain assessment documentation or profiles recorded by professional nurses (Fox, 1982).

Mason (1981) reported that years of education and nursing experience were not factors in predicting knowledge of pain. Myers (1985), however, indicated that age is related to a lack of knowledge of pharmacology but with continuing education, knowledge is improved. It is difficult to know why some nurses know more about pain than others. King (1997) found nursing specialty to be related to pain knowledge; nurses who specialize in cancer or hospice care tend to be more knowledgeable about pain and pain management than medical-surgical nurses.

The continuous consolidation of nursing units is occurring in many hospitals, profit and nonprofit, including government facilities such as the Veterans Administration (VA). Many of our nation's veterans utilize the VA as their only source of healthcare. Nurses employed by the VA are of various educational backgrounds and work daily within the constraints of government regulations and policies serving a mostly male population. Due to the reduction of personnel, oncology units have been dissolved and the patients have been assimilated into the remaining units. Thus, cancer patients are found on medical, surgical and nursing home units in the VA, and nurses are expected to effectively manage their cancer pain.

Purpose

The purpose of this study was to compare differences in levels of knowledge of cancer pain management between hospice nurses and VA nurses and identify factors related to that knowledge.

Research Questions

The following research questions were addressed in this study:

1. Is there a significant difference in level of knowledge related to pain management between hospice nurses and VA nurses?
2. What is the relationship between knowledge of cancer pain management and age among hospice nurses and among VA nurses?
3. What is the relationship between knowledge of cancer pain management and years of experience among hospice nurses and among VA nurses?
4. What is the relationship between knowledge of cancer pain management and continuing education (CE) related to pain among hospice nurses and among VA nurses?
5. Is there a significant difference in knowledge of cancer pain management among hospice and VA nurses at different educational levels?

Definition of Terms

Cancer Pain: "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (International Association for the Study of Pain Subcommittee on Taxonomy, 1986, p. S217).

Significance to Nursing

Lack of knowledge of cancer pain has been found to be related to nurses' need for continuing education. Results of this study reveal factors related to that lack of

knowledge. Continuing education at regular intervals can assist nurses in effectively managing cancer pain. The review of literature indicates there is a need for encouragement by those in supervisory and administrative positions to support and to seek out more opportunities to send nurses to pain management inservices; results of this study also support this need for continuing education. Educational programs such as those in undergraduate curricula may start to include more on pain management if nurses are found to be lacking in pain management knowledge.

CHAPTER II

REVIEW OF LITERATURE

This chapter presents the review of literature. It focuses on studies of nurses' knowledge of cancer pain management including: knowledge from nursing programs and continuing education, knowledge of pharmacology, and factors related to pain knowledge including nursing experience, age, and level of education.

Knowledge from Nursing Education

Knowledge of pain management is learned in all levels of nursing programs as well as through continuing education. Faculty in nursing programs are charged with teaching up-to-date information and providing nurses with the most current knowledge and skills necessary to take care of patients in the best way possible. In a study by Ferrell, et al. (1993), 776 surveys were distributed to 14 baccalaurate nursing schools in the United States, of which 498 (64%) were returned. The faculty sample included 93 percent females with a mean age of 43 years. The average amount of time in nursing was 20 years, with an average of 11 teaching years. Three instrumants were used. The Survey of Knowledge and Beliefs Regarding Pain was used to measure knowledge and beliefs of individual faculty; a pain Curriculum Survey was used to assess pain-related teaching content; and the Faculty Characteristics Survey was used to assess characteristics of faculty at each school. The purpose was to find out about curriculum content related to pain and faculty knowledge and beliefs about pain. In curriculum content, analgesics had the highest mean time of teaching, 3.9 hours. The least time was given to beliefs and misconceptions of pain, 1.4 mean hours. Even though analgesics had more teaching hours,

the respondents did not score as well when asked about pharmacological interventions. Only 43 percent answered the pharmacology questions correctly, which may indicate students are not receiving the most accurate information about management of pain or are not retaining that knowledge. Eight out of twenty-three items were answered incorrectly by 20 percent of the respondents. Ferrell et al. (1993) hypothesized that one in ten faculty could be teaching outdated material. These eight items are critical in management of pain: pain relief as a goal, clock watching, high-dose analgesics, pain-free state, pain location, opioid site of action, chronic pain symptoms and pharmacology. Faculty have a tremendous impact on nursing students and how they approach pain management. Through continuing education, nurse educators and those in the role of teaching nurses, can better prepare themselves to teach current information about pain management.

In a study of nurses' knowledge and attitudes of cancer pain, Myers (1985) used pre- and post-tests to evaluate the effectiveness of education in altering the attitudes of nurses in their comfort-level of taking care of cancer patients. Seventy-six nurses participated in a three hour course, Nursing Management of the Cancer Patient in Pain. Sixty-seven nurses completed both pre-test and post-test, and sixty-two agreed to receive a retention test by mail. Forty-two completed tests were returned. Sixty percent of the nurses who completed the first two tests were between 26 and 45 years of age. More than half had been in nursing less than 10 years, and diploma nurses outnumbered bachelor degree nurses 49.2% to 27.7%. Results indicated that prior to the program, 11% believed a patient should actually have pain before administration of medication, 36% thought around the clock dosing could cause addiction, 43% were afraid of respiratory depression and sedation and 69% were in agreement that patients should be kept in a pain-free state. After the program, the scores were greatly improved. The mean knowledge and attitude scores of the pre-test were significantly lower than the retention test and the post-test scores ($p < .01$). Nursing knowledge and attitudes increased on the post-test but decreased on the retention tests. Results indicated that nurses felt more comfortable after

attending this program and that nurses who do not spend a lot of time taking care of cancer patients can benefit from attending courses on pain management. Patients with diagnoses other than cancer can have significant pain and nurses educated about pain can have an impact on patients receiving better pain control.

Frerichs and Varricchio (1988) were concerned about the vital role of nurses in caring for the increasing number of cancer patients today and felt nurse educators and future employers should prepare nursing school graduates to meet this growing need. They found instruction related to cancer was limited in undergraduate programs and thus, the purpose of their study was to document student nurses' knowledge about cancer in order to bring about a curriculum change. The instrument was developed from a blueprint for the content. The item evaluation went through four drafts, the first for face validity by the Nurses' Professional Education Committee members. Second, the tool was evaluated by administering the test to 242 nursing students and faculty in five different nursing programs and asking them for an analysis of items. The fourth draft was a pilot used with a small group of nursing students. The final version of the test had 82 items for a total of 82 points. One half of the test was multiple choice and the other half was true false. Twenty-eight items focused on cancer therapy and symptom management, twenty-four on prevention and detection and thirty were devoted to epidemiology and biology of cancer. Students from twenty-two bacaccalaurate programs in Illinois were invited to participate in the study. Each school was assured the results would not be used to compare programs, and scores would be kept confidential. Of these twenty-two schools, eleven participated and 275 senior nursing students completed the test. Scores ranged from a high of 71 to a low of 45. Cronbach's alpha was .54. No item was incorrectly or correctly answered by all the students. The highest successful content areas were in biology of cancer, specifically breast and lung cancer. The lowest successful areas were identifying early symptoms of cancer and management of side effects such as pain and stomatitis. The results indicated that there were areas in the knowledge of cancer that were low, and educators should look

at their curricula to make sure appropriate content is given in the time alloted for oncology nursing. Implications of this study were that tests be updated annually and new lectures, videos and literature be provided to nurse educators with statewide testing planned for the following year.

Lack of knowledge of cancer pain can be attributed to attitudes and inaccurate knowledge of pharmacology regarding pain management. The undertreatment of pain in cancer patients is partially due to the lack of organized education in the management of cancer pain (Hauck, 1986). The purpose of Hauck's study was to present an educational program to nurses and evaluate it's influence on their attitudes and knowledge of pain analgesia. The convenience sample included 52 nurses who had taken care of cancer patients for at least one full year. The study was conducted in a 600 bed midwestern community hospital with 20 registered nurses in the control group and 32 in the experimental group. Demographic data included level of nursing experience and education. A two hour educational program was given to the experimental group and consisted of a formal lecture and discussion based on current pain management treatment. The experimental group completed a pre-test post-test attitude and knowledge questionnaire and attended the educational program while the control group completed the pre and post tests without attending the program. There was a six-day delay between pre- and post-tests. The attitude questionnaire was a Likert-type scale with scores ranging from 13 to 65, a high score indicating a positive attitude about pain. The knowledge questionnaire had 29 items that evaluated nurses' knowledge of cancer pain management and pharmacology of analgesia. The questionnaire had 25 multiple choice and four true/false items and the scores can range from 0 to 52. Results indicated the difference in pre-test scores between the groups was not significant but did show a more positive attitude toward patients with cancer pain in the post-test experimental group ($t = 4.34$. $df = 50$, $p = 0.000$). In addition, the post-test experimental scores indicated improved knowledge of cancer pain management ($t = 8.14$, $df = 25.5$, $p = 0.000$). Two factors

influencing nurses' treatment of pain in cancer patients have been fear of causing addiction and fear of respiratory depression. This knowledge questionnaire addressed these two factors. Pre-knowledge tests showed 25% of the control group and 44% of the experimental group answered the questions about addiction and respiratory depression correctly. After the educational program, 94% of the experimental group answered correctly and only 35% of the control group identified the correct answer. Implications of this study include a need for organized educational programs within nurses' basic education. Adequately assessing pain and documenting a plan of care are key in the process of effective pain management. Increasing nurses' knowledge can change attitudes and improve behavior towards managing a patient's pain.

Knowledge of Pharmacology

Ryan, Vortherms and Ward (1994) conducted a study looking at knowledge and attitudes of pharmacologic management of pain in cancer patients among oncology nurses and long term care facility nurses (LTCFNs). Although these nurses were not oncology nurses, they cared for many patients with diagnoses of cancer experiencing cancer pain. The purpose of the study was to compare oncology nurses and LTCFNs with the expectation that oncology nurses would be more knowledgeable about scheduling regimens of opioids. The sample was taken from a list of all registered nurses practicing in Wisconsin and a convenience sample of nurses belonging to oncology specialty groups. A systematic random sample of 1,173 active nurses was drawn from the population of 43,000; 790 nurses responded to the survey. Seventy-two of the sample nurses worked in a long term care facility; their mean age was 44.8 years ranging from 26 to71 years, and they had practiced nursing for 18.2 mean years ranging 1 to 45 years. Ninety-six percent were female and 85% reported taking care of one cancer patient in the last six months. One hundred-sixty oncology nurses were invited to participate in the survey; 128 nurses responded, 125 were female. The average age of the oncology nurses was 40.1 years with

15.8 mean number of years practicing; fifty-seven nurses were nationally certified in oncology. The tool was an 82-item questionnaire that encompassed three major areas, knowledge, attitude and perceived barriers; demographic data also was included. Five pain management experts reviewed the questionnaire for content validity. Thirty-two items measured the knowledge area and test scores were calculated in terms of percentage of correct responses. Three subsets of knowledge were scored: knowledge of opioids, knowledge of pain, and knowledge of scheduling regimens of pain medication. The results showed that the oncology nurses had higher scores on the knowledge portion of the test and each subtest: scheduling, pain and opioids. When LTCFNs who had cared for cancer patients in the last six months were factored in, oncology nurses still scored significantly higher ($p < 0.05$) in overall knowledge. This is supported by Brunier, Carson, and Harrison (1995). They found oncology nurses had higher scores on a knowledge test than nurses on other units.

Although the oncology nurses performed better on the opioid knowledge portion than the LTCFNs, the oncology nurses scored comparatively low indicating a continued deficiency in knowledge of opioids in pain management. Over half (51%) of the LTCFNs knew that the oral route is preferred, 46% of the LTCFNs knew that constipation does not diminish with continued opioid use, and only 13% of the LTCFNs knew that less than 1% develop an addiction to opioid use. Thirty-eight percent of LTCFNs also were incorrect in stating that changing from morphine to Talwin would be wise if the patient became tolerant; changing to Talwin could be dangerous due to possible withdrawal symptoms. The implications of this study are that most nurses are deficient in knowledge of opioids in pain management and many nurses continue to believe constipation is not a major problem in patients receiving opioids. With the accessibility of resources such as pain experts and pain management CEs, these deficits can be corrected (Ryan et al., 1994).

McCaffery, Ferrell, O'Neil-Page and Lester (1990) reported on nurses' knowledge of opioid analgesics drugs and psychological dependence. They looked at the knowledge

nurses have in understanding classifications of analgesics and how often nurses believed patients treated for pain become addicted. Pretests were given at a series of workshops held in a total of 27 cities in 14 states from east to west coast and data was collected over a 10 month period. The sample had 20 basic workshops with 1,105 subjects and seven advanced workshops with 1,354 subjects. No demographic data was collected but most participants were registered nurses as this was a continuing education environment. The tool designed by McCaffery was a simple measure of the two areas of interest and was undergoing testing for content validity and test-retest reliablilty. The tool had two sections consisting of knowledge of classification of drugs and assessing their knowledge of narcotic addiction. The definition of narcotic addiction was given so as not to be confused between this and the definition of tolerance or physical dependence.

The results showed that nurses placed milder analgesics in the non-narcotic category. Less than 25% of those surveyed knew that the frequency of addiction is less than 1% although most did choose a lower percentage category as opposed to higher than or equal to 25% of the time. Analyses also were done comparing the basic group with the advanced group, with the advanced attendees responding more correctly to items about cocaine and addiction. Geographical areas also were compared with nurses in the west scoring better than those in the midwest and east. A comparative analysis was done comparing the relationship between the two areas of interest in the study, drug addiction knowledge and drug class knowledge. There was a moderately strong correlation between these two areas after Pearson's correlation was computed, ($r = 0.63$). The nurses in this study were amazed at their lack of knowledge in narcotic classifications, indicating improper decisions about pain management may be occurring everyday. Staff nurses do not order pain medication but do make decisions on how much of a certain narcotic to give (if there is a range ordered) based on an individual assessment of pain; this can have a major impact on patient pain control (McCaffery, et al., 1990).

The two previous studies found nurses lack an adequate knowledge base in pharmacology. In a study by Boggs, Brown-Molnar, and Delapp (1988) it is stated although nurses are responsible for educating and administering drug regimans to clients, they do not always possess the knowledge to fulfill these responsibilities. The purpose of the study was to assess nurses' knowledge level of three commonly used drugs: Demerol, Lanoxin, and Keflex, and determine whether there were differences in specific types of drug knowledge. The convenience sample included registered nurses (RNs) and licensed practical nurses (LPNs) from four local hospitals and in the local community health settings of a northwestern pacific city of 250,000. Four hundred-fifty exams were distributed and 182 were returned for a response rate of 44%. The final sample included 166 RNs and 16 LPNs. Fifty percent were bachelor of science nurses (BSNs), 24.7% were diploma nurses, 16% were associate degree nurses (ADs) and 9% were LPNs. Sixty-five point four percent were staff nurses. The tool started with 86 items and went through a rigorous evaluation by five local pharmacists, six nursing faculty for applicability to nursing and a pilot study of ten nurses. Eventually it contained 36 items, 12 questions representing the three drugs. For each of the drugs two items were based on the type of drug information such as dosage range, mechanism of action, drug interaction, side effects and pharmacokinetic parameters. The final exam showed an item difficulty of .47 and a split half reliablility coefficient of .71. The exams were distributed in person with verbal and written instructions not to use drug information sources while completing the exams; the average time to complete the exam was twenty minutes. The high score was 75% and low score 8% with the mean score 46.42%. Results showed the highest scores were in identifying the indication for the drugs, and a declining level of knowledge was noted in the types of drug information. Mean score data indicated the performance of nurses was sightly above 50% on clinical indication and side effects and slightly below 50% on mechanisms of action and drug interaction. The results showed no significant difference

between levels of experience and administration of medication, or in years of experience. There was however a significant difference between BSNs and LPNs in all areas of drug knowledge: type of drug ($p = 0.0003$), pharmacological use ($p = 0.0047$), and mechanism of action ($p = 0.0001$). Higher education signifies increased knowledge of pharmacology, but nurses of every educational level are managing patients' cancer pain in many institutions. Even though nurses do make appropriate judgements based on clinical indications and side effects, the understanding of pharmacokinetics is very important in allowing the nurse to know when therapeutic and toxic side effects can occur. Implications of this study were that drug knowledge exams were perhaps warranted in nurses involved in administering drugs, follow-up evaluations in drug knowledge after a few years of employment would be beneficial, and inservices on medication administration are valuable especially if pharmacists are limited in the facility.

Factors Related to Pain Knowledge

The literature reveals years of nursing experience is not a factor in predicting knowledge of pain but education plays an important role. In a study of pain in elderly patients (Closs, 1996) also found that education of nurses about the elderly, and nurses' experiences managing pain in the elderly, is more important than seniority or experience. The purpose of this study was to determine nurses' baseline knowledge level when managing pain in the elderly. Nurses involved in four types of clinical areas were asked to participate in a mail survey concerned with knowledge of pain, experience of pain and pain control in people 70 years and older. The four areas were cardiothoracic, orthopedic surgery, general surgery, and care of the elderly; a questionnaire of 17 items was used, 14 of which were questions related to the elderly and assessment of their pain. The three remaining questions were grade, number of years qualified, and what shift they worked. From the qualified nurses, 55% ($n = 208$) returned questionnaires and results showed 83.7% of nurses believed that the elderly suffer more chronic pain than younger people.

The surgical nurses felt that elderly patients had more chronic pain than did nurses working on the elderly wards (chi-square = 10.5, 3 d.f., $p < 0.05$). The term elderly ward was also not defined but understood to mean medical floor. Grade, years qualified and shifts worked were not factors and did not make a difference when chi-square tests were done. One third of the respondents felt that pain and discomfort inevitably occur with age. Chi-square analysis showed no difference in nurse according to grade, years of experience, clinical area or shifts worked. Most nurses reported that elderly were less likely to ask for pain medication than young people; chi-square analysis showed no difference in grade, shifts or years qualified. Surgical nurses answered this question more accurately than those working on the elderly wards (chi-square = 7.7, 1 d.f., $p < 0.01$). The respondents in this study demonstrated that pain in the elderly is still not well understood and thus not well managed. There are still misconceptions of pain in the elderly that can be resolved with education. This is important because of the large number of elderly cancer patients and the fact that they may have more hospitalizations due to their advanced age. The review of literature found that years of experience do not play a part; education can be aimed at all levels of nurses with varied experience resulting in positive outcomes.

In a previously mentioned study on nurses' drug knowledge, Boggs, et al. (1988), also wanted to determine whether there was a relationship between level of pharmacology and educational background or experience. A significant difference was found between BSNs and LPNs, when educational background was controlled ($p = 0.0044$). The results suggested that increased educational level leads to increased drug knowledge. No significant differences were found between nursing experience and drug knowledge, however, nurses in supervisory positions such as nurse managers and nurses in administration scored higher than those with the responsibility for giving the medications ($F = 4.95$, $p = .03$).

Everett, et al. (1994) studied pain assessment from patients with burns and their nurses, addressing: years of nursing experience and educational status as it relates to

nurses accurate assessments of pain and patient pain reports. Although this study did not specifically address cancer pain, it is included in this review only because it is a current source that associates years of experience and educational level to knowledge of pain. Forty-nine adult patients and 27 nurses completed 123 visual analog scales (VAS) related to wound debridement. Total body surface area (TBSA) burned was between 1% and 69%, 11 patients were female and 38 were male. Nurses in the sample were composed of 24 women and three men with a mean 4.1 years nursing experience (range = 1 to 20 years). Experience in a burn unit was a mean 7.5 years (range = 1 to 10 years). Levels of education included 15 Associate of Arts degrees, three Bachelor of Science degrees, and nine Bachelor of Science in Nursing degrees. Patients completed one VAS for overall pain and one for worst level of pain while the nurses completed only one for overall pain. The training for the scale was completed one to one at a universisty-based burn center and the results revealed that mean overall ratings were equal between patients and nurses. Overall pain and worst pain scores were highly correlated in comparing nurse and patient VAS scores ($p < 0.01$) worst pain and ($p < 0.001$) overall pain. Chi square analysis was used to find out if educational level was a factor in accurately assessing patients' pain and it was found not to be related to nursing experience, burn nursing experience, or educational level. This study was successful in showing that nurses could accurately assess pain levels in patients with burns, and educational level and years of experience of nurses were not factors in assessing pain. Having a consistent method to rate pain can lead to more effective pain control. Perhaps having nurses rate pain levels along with patients causes them to take a closer look at objective signs of pain and improves assessment skills.

Ryan, et al. (1994) agreed that among oncology nurses and LTCFNs there was no difference in knowledge of pain based on educational level with exception to opioid knowledge; the oncology nurses who were primarily bachelors prepared knew significantly more about opioids ($F = 3.4$, $p = .04$). Myers (1985) found number of years nursing and level of preparation were not significant factors in knowledge of pain, however, she stated

age was significant in nurses 46 to 55 years and older; on a pre-test and retention test these nurses scored consistently lower than the younger nurses. A continuing education course did improve scores, and 98% of nurses agreed more education was needed in the area of pain management. Results of a study by Dalton et al. (1996) found an educational program improved nurses' knowledge of pain management, especially regarding dosing.

Summary

The review of literature found that education level, pharmacological knowledge, and continuing education contribute to nurses' knowledge of pain but experience and age in nurses younger than 46 do not. Nursing faculty are instrumental in communicating current knowledge of pain to students; this is how new nurses will view pain management in their practices. If knowledge taught in nursing programs is not up to date, patients may not be receiving the best care possible. A study by Wallace, Reed, Pasero, and Olsson, (1995) stated nurses rated their basic nursing textbook information of pain management adequate to inadequate. Continuing education is beneficial and required of all nurses to keep abreast of new developments which impact patient care. Cancer pain is in the forefront of national concern. Patients need not suffer from excruciating pain just because they are in an advanced stage of illness. Nurses are aware of the need for continuing education (CE) and want it; time and financial resources for attending these CE programs,and encouragement from superiors is needed for this to occur.

Pharmacological knowledge is crucial to providing adequate pain management. The research supports that nurses have a pivotal role in relieving patients' pain; they may not prescribe the medication but are the ones giving the medication based on individual needs. Nursing knowledge of pharmacology enhances the interdisciplinary approach to pain management which ultimately benefits the patient.

The literature indicates that years of nursing experience and level of education are not factors in predicting knowledge of pain (Boggs et al., 1988; Closs, 1996; Everett et

al., 1994; Myers, 1985; & Ryan et al., 1994). This information tells us that nurses of all levels should be able to manage pain if adequately educated, and there is no reason to assume a less experienced nurse could not recognize and manage pain (Myers, 1985). However, age was shown to be a factor in lack of knowledge of pain in nurses 46 to 55 years and older where myths and misconceptions may play a part. Continuing education is a key component to dispelling those misconceptions and presenting current knowledge and practices. Most nurses are aware of this knowledge deficit and desire more education on pain management. Nurses come from all ages, backgrounds and levels of experience, it is gratifying to know that nurses as a group, with a proper knowledge base, can manage patients' pain achieving the desired outcome: relief of pain.

CHAPTER III

METHODS

The purpose of this descriptive study was to ascertain differences in VA and hospice nurses' knowledge of cancer pain, and identify demographic variables that may be related to that knowledge. This section describes the sample, instrument, consents for permission, procedures and data analysis used.

Sample and Setting

The target convenience sample was to have consisted of 50 nurses taken from a population of 177 VA nurses working in the James A. Haley Veterans Hospital (JAHVH), and 50 hospice nurses from a population of 100 nurses working at the Lifepath Hospice of Tampa (LH). JAHVH recently closed it's dedicated oncology unit and now admits oncology patients to one of several medical-surgical units. Lifepath Hospice is a large not-for-profit organization that provides primarily homecare. Approximately 60% of patients have a cancer diagnosis.

Both registered nurses and licensed practical nurses who had worked at least one year were included. The subjects had taken care of cancer patients within the last six months and all educational levels were included. All of the subjects worked at LH, and the VA on surgical inpatient units, and medical inpatient units, because all of these nurses address pain management issues with their patients.

Instrumentation

Pain Management Knowledge Test - Revised (PMKT-R)

The Pain Management Knowledge Test Revised (PMKT-R) measures various aspects of pain knowledge, including pain management and assessment methods, how pain is transmitted, and pain attributes. It is a revision of the PMKT. The original investigator devised the PMKT in part, to compare senior nursing students' pain management knowledge scores before and after they attended a three hour pain management course (Cahill, 1990). Content validity was built into the PMKT by using a blueprint and an extensive review of literature on which to base items. A significant difference in scores between students who had and had not taken the course further promoted content validity ($p < .00$). An internal consistency method was used to study reliability; a Kuder-Richardson 20 was acceptably high ($r = .60$). A test-retest also was used after a four-hour delay ($r = .67$, $p < .02$, $n = 22$)(Cahill, 1990).

McMillan, Tittle, and Cahill (unpublished manuscript, 1993) revised the PMKT with permission of the original investigator. The original blueprint was used to build in content validity. The revised PMKT (PMKT-R) contained items with lower item difficulty in a 31- item multiple choice test. Scores ranged from 0 to 100 based on the percent of correct responses (Appendix A). McMillan and Tittle reexamined the validity and reliability. Pre- to post-test scores were compared and post-test scores were found to be significantly higher than pre-test ($t = 6.76$, $p < .00$), thus supporting validity. Reliability was studied using a test-retest with a one week delay. Post-tests were correlated with retests and the results supported reliability of the instrument ($r = .84$, $p < .00$). Permission to use the PMKT-R was given by McMillan (Appendix B).

Demographic Data

A demographic data form was completed by each participant to collect standard descriptive data. Two forms were used as question number seven inquired about the specific work location, VA or hospice (Appendix C and Appendix D). Demographic data included age, gender, shift worked, educational level, ethnic background, years of nursing experience, years worked at present institution, professional memberships, nursing certifications (if any), pain management continuing education courses attended and how long ago, and area of primary responsibility (i.e. patient care, management, education, other).

Procedures

The proposal was sent to the JAHVH and LH for permission to conduct research with VA and hospice nursing personnel. Following approval, the proposal was forwarded to the University of South Florida Institutional Review Board for the Protection of Human Subjects which gave permission to conduct this study (Appendix E).

The investigator met with the education/research coordinator at LH to explain the purpose of the research study. The investigator returned to LH during a scheduled team meeting day to explain the research study to the nurses and ask for participation. After reading the attached cover letter explaining the study and assuring confidentiality of the results, the nurses participating completed the PMKT-R. The investigator collected all of the tests with the assistance of the clinical nurse specialist. A demographic data sheet and a consent letter also were attached (Appendix F).

In a meeting with each nurse manager of the selected VA units, the investigator explained the purpose of the research study. The investigator went to the 5-South nursing lounge repeatedly to seek participation. Optimal times were suggested by the nurse managers as the best times to talk with the nurses. The nurse managers were instrumental

in giving the nurses time to talk with the investigator and to take the knowledge test. The nurses were assured that participation was strictly voluntary. Each nurse was given a cover letter with the test attached explaining in writing the purpose of the study and that confidentiality would be maintained. There was also a consent letter and a demographic data sheet attached. The investigator collected each test with the assistance of the nurse managers. The investigator provided refreshments and offered a twenty-five dollar gift certificate to be drawn randomly and to be awarded at the completion of this thesis. Each test was maintained in a locked cabinet in the investigator's home office.

Data Analysis

Descriptive statistics, means, frequencies and percentages were used to describe the sample. The following statistics were used to answer the research questions:

Research Question 1: Is there a significant difference in levels of knowledge related to pain management between hospice nurses and VA nurses? An independent t-test was used to answer this question.

Research Questions 2: What is the relationship between knowledge of cancer pain management and age among VA nurses and among hospice nurses? A Pearson Correlation was used to answer this question.

Research Question 3: What is the relationship between knowledge of cancer pain mangement and years of experience among hospice nurses and among VA nurses? A Pearson correlation was used to answer this question.

Research Question 4: What is the relationship between knowledge of cancer pain management and continuing education related to pain among hospice nurses and among VA nurses? A Pearson correlation was used to answer this question.

Research Question 5: Is there a significant difference in knowledge of cancer pain management among VA and hospice nurses at different educational levels? Analysis of Variance (ANOVA) was used to answer this question.

CHAPTER IV

RESULTS, DISCUSSION, AND CONCLUSIONS

The purpose of this study was to determine what nurses know about cancer pain management. A knowledge test was administered to 28 hospice nurses and 27 VA nurses who volunteered to participate. This section reports results of the study, and discusses analysis of the data as well as conclusions reached.

Results

Sample

Demographic data was obtained to provide a description of the sample. Both groups, hospice nurses and VA nurses were predominantly female with only one male in the hospice group and two males in the VA group. Two out of twenty-seven VA nurses (7.4%), and 5 out of 28 hospice nurses (17.9%) identified themselves as members of the Oncology Nursing Society (ONS). The two groups were similar in mean age, (VA age range = 24 to 60), (hospice age range = 29 to 61), years of working experience and time on the unit/at hospice (Table 1). The majority of the sample was Caucasian (69%), followed by Hispanic (13%), African-American (11%), Asian-Pacific Islander (5%), and other (not stated) (2%). Table 2 presents ethnic origin of the nurses by institution.

Table 1

Means and Ranges of Age, Years of Experience, and Years on Unit/Hospice Team of VA and Hospice Nurses

Variable	n	mean	range
Age			
Hospice	28	44	29-61
VA	27	47	24-60
Years Experience			
Hospice	28	17.5	6-31
VA	27	18.1	1-38
Years on Unit/Team			
Hospice Team	28	3.1	.25-17.5
VA	27	4.5	.08-15

Table 2

Frequencies and Percentages of nurses by Ethnicity for VA and Hospice Nurses

	Hospice		VA	
Ethnicity	Frequency	Percent	Frequency	Percent
Caucasian	24	86	14	52
Hispanic	3	11	4	15
African-American	1	4	5	19
Asian Pacific-Islander	0	0	3	11
Unknown	0	0	1	4

Comparison of Knowledge Scores

Results of the independent t-test showed hospice nurses scored significantly higher on the PMKT-R than VA nurses ($p = .000$). These results indicate hospice nurses were more knowledgeable about cancer pain management (Table 3).

Table 3

Independent t-test Comparison of Mean Percentage Scores for VA and Hospice Nurses

Group	n	mean score	t	p
Hospice Nurses	28	70.5		
			4.7	.000
VA Nurses	27	55.7		

Relationships Between Knowledge and Demographics

Pearson's correlation revealed no relationship between age and score (r = -.181) or years of experience and score (r = -.189). However, an independent t-test comparing knowledge scores between nurses who had and had not had pain management continuing education was statistically significant (Table 4).

Table 4

Independent t-test Comparison Between Nurses Who Had and Had Not Had Continuing Education (CE) with the Groups from Both Settings Combined.

Group	n	Mean	t	p
Nurses with CE	31	67.1		
			3.1	.003
Nurses without CE	24	57.1		

Knowledge of pain management among VA and hospice nurses at different educational levels was assessed using analysis of variance (ANOVA). There was no significant difference in the mean scores of VA nurses (Table 5) or the mean scores of hospice nurses (Table 6) by educational level.

Table 5

Analysis of Variance Among Mean Scores of Hospice Nurses at Different Educational Levels.

Educational Level	n	Mean	
LPN	0	-	
AA	10	67.8	
Diploma	4	69.5	
BSN	9	68.7	F = .978
BS-Non-Nursing	2	69.5	p = .453
MSN	2	77.5	
MS-Non-Nursing	1	81.0	
Total	28	69.7	

Table 6

Analysis of Variance Among Mean Scores of VA Nurses at Different Educational Levels.

Educational Level	n	Mean	
LPN	9	50.9	
AA	1	71.0	
Diploma	3	54.7	
BSN	9	59.1	F = .552
BS-Non-Nursing	0	-	p = .735
MSN	3	55.3	
MS-Non-Nursing	2	56.5	
Total	27	55.7	

Item Analysis

Item analysis made it possible to identify areas of strength and weakness in the nurses' knowledge of pain management. More than 50% of the hospice nurses responded correctly to 23 items, while 50% or more of VA nurses responded correctly to 19 items (Table 7).

Table 7

Frequencies and Percentages of Correct Responses on PMKT-R Items by Group.

Item Number	Item Content	Hospice Frequency	Hospice Percent	VA Frequency	VA Percent
3	Increased analgesic required	28	100	26	96.3
6	Patient self-report	28	100	24	88.9
25	Benefit of steady state analgesia	27	96.4	21	77.8
27	Control over patient's pain	27	96.4	18	66.7
30	Non drug interventions-cognitive	27	96.4	25	92.6
10	Pain principles	26	92.9	19	70.4
28	Tolerance	26	92.9	20	74.1
29	Non drug interventions-physical	26	92.9	16	59.3
31	Pain location	26	92.9	24	88.9
4	Preferred Route	25	89.3	12	44.4
7	Addiction-percentage	25	89.3	17	63.0
11	Chronic pain symptoms	24	85.7	17	63.0
19	Quality of life	23	82.1	21	77.8
20	Pain assessment	23	82.1	21	77.8
22	Prescribing/Medicating	23	82.1	14	51.9
23	Opioid side effects	23	82.1	17	63.0
8	Mechanism of action	21	75.0	23	85.2
21	Action of naloxone	21	75.0	15	55.6
17	Pain before med due	19	67.9	17	63.0
2	Length of patient suffering	17	60.7	13	48.1
1	Percent of patient suffering	17	60.0	21	55.6
18	Pain relief as goal	16	57.1	10	37.0
24	Steady state analgesia	16	57.1	16	59.3
9	Cutaneous stimulation	14	50.0	10	37.0
13	Acute pain symptoms	14	50.0	6	22.2
26	Clinical decision- making	12	42.9	5	18.5
12	Duration of opioids	10	35.7	6	22.2
5	PRN analgesia	7	25.0	5	18.5
15	Gate Control Theory	7	25.0	9	33.0
14	Physiology of pain	1	3.6	1	3.7
16	Pain modulation	1	3.6	3	11.1

Discussion

Sample

The nurses from the VA and hospice were homogeneous in all variables assessed, except for CE in pain management: in the past year, 82% of the Hospice nurses had received cancer pain CE and only 30% of the VA nurses had ever had any CE in cancer pain. Limitations of the study may be the small sample size of VA nurses and hospice nurses from the same geographical area, and that there were only five males represented from the total sample. The percent of ethnic minorities is similar to the percent in this community, and is a strength of the sample. The relationship of continuing education to nurses' knowledge is reinforced by the small number of oncology nurses (nurses who identified themselves as members of ONS) in the sample.

Comparison of Knowledge Scores

There was a significant difference between the knowledge scores of the VA nurses and the knowledge scores of the hospice nurses; the hospice nurses knew more. This may be due to hospice nurses' motivation to know more about pain due to their chosen area of work. More likely, it may be due to the intensive pain management education provided in the hospice used in the study in the past two years. This difference supports the earlier findings of Ryan et al. (1994). Although the hospice nurses scored higher, they only attained 70.5%, a basic knowledge level; this is consistent with the literature. Again , the sample size may be a limitation because only 27 out of 177 VA nurses participated. Perhaps the test was too difficult; however previous studies found the content of the PMKT-R valid and reliable, and information nurses should know. Pain management may need to be taught over the course of a calendar year, such as once a quarter, to fully explain the vast amount of information. McCaffery and Ferrell, (1997) noted that the longer nurses are exposed to correct information about pain managment, the better their knowledge level becomes.

Relationships Between Knowledge and Demographics

Factors that might affect knowledge of pain management were explored. Only previous CE was found to be a significant factor. This supports the earlier work of Brunier et al. (1995) which found nurses who had attended an inservice in the last year had significantly higher scores than those who had not attended ($p<0.0001$). No relationships were found between knowledge score and age, years of experience or level of education.

Item Analysis

Hospice nurses appear to be more knowledgeable due to CE, but there continue to be areas where nurses are deficient. Several areas appear to be weak. One area is when to give a PRN analgesia. When questioned about when to remedicate a patient, only twenty-five percent of hospice nurses and 18.5% of VA nurses chose the correct response 'before pain returns'; while the remaining 75% of hospice nurses and 82% of VA nurses chose "when pain in mild'. Many nurses still believe patients with cancer will have some pain. Sixty-three percent of VA nurses scored low in the area of 'pain relief as a goal'. Ten out of twenty-seven (37%) VA nurses chose to relieve the patient's pain to a 'level the patient could tolerate'. Rankin and Snider (1984) found 57.7% of nurses believed opioids should only reduce pain, not completely relieve it. While the goal is complete relief of pain, current guidelines (U.S. Department of Health and Human Services, 1994) encourage nurses to teach patients to choose a level of pain relief they consider to be tolerable. This could be a mixed message for many nurses and may account for the low score on this item.

In addition to opioids, alternative methods offer a variety of ways to relieve pain. Many nurses are not aware of those methods or do not believe them to be beneficial. Thirty-seven percent of VA nurses believe cutaneous stimulation is only helpful in mild intensity pain. Continuing education in alternative therapies would help nurses understand that different therapies can work together to relieve pain.

When asked about the preferred route of opioid analgesics, 44.4% of VA nurses continue to believe that intravenous medications are required. Continuing education can easily clear up this misconception so that nurses will encourage the oral route unless contraindications exist.

It is difficult for nurses not to believe their own objective assessment, but patients do not always show pain for various reasons be they cultural, ethnic, or personality. Nurses still believe the patient must be grimacing to be in pain. Both hospice nurses and VA nurses scored low on an item relating to patient assessment, although VA nurses scored particularly low, 18.5%.

Although 70%-80% of cancer patients suffer for longer than one month, only 48% of VA nurses were aware of this fact. Perhaps they were thinking of the terminally ill patients they take care of in their last days instead of the many patients who are living longer with cancer and want to continue with their current quality of life.

Knowledge of physiology of pain continues to be severely deficient. These scores were among the lowest of both hospice and VA nurses. This is difficult information to understand and may be an area which nurses are uncomfortable with or not eager to learn about. Having CE or not having CE did not make a difference; looking at alternative ways to teach this information should be addressed.

Ryan et al. (1994) reported that although oncology nurses were more knowledgeable, they still are deficient in knowledge of opioids in pain management and continue to score low in these areas. Both hospice nurses and VA nurses were lacking in knowledge of opioid duration. Thirty-five point seven percent of hospice nurses and 22.2% of VA nurses responded correctly to the item relating to duration of an opioid drug. The majority of the nurses chose morphine as the drug with the longest duration. Maybe they were more comfortable with morphine than levodromoran. A limitation to the study may be the way the test items were written. The test item related to opioid duration

identified the drug as morphine; the nurses may have been thinking of MS Contin which is a long-acting form of morphine. Other items may have been missed due to terminology such as the difference between an agonist and an antagonist. Pharmacology is still a problem area for nurses and one which needs continuing education from planned inservices as well as the individual responsibility of the nurses themselves to seek information.

Conclusions

The findings of this study document the lack of nurses' knowledge of cancer pain management. Continuing education is a factor in knowledge of cancer pain. Until we see more involvement in cancer pain management CE programs, nurses will continue to lack the skills necessary to adequately relieve cancer pain. Age, years of experience, and years on the unit are not significant in nurses' abilities to control cancer pain, but continuing education was found to increase nurses' knowledge of cancer pain no matter what their background. Even though Hospice nurses scored higher than VA nurses, they still had a mediocre mean score. Perhaps more frequent inservices on cancer pain would increase knowledge retention.

The findings from this study suggest several areas for further investigation. These include: 1) Replication of this study with a larger sample size in different geographical areas, and 2) Including more males in the sample.

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APPENDICES

Appendix A

Pain Management Knowledge Test - Revised

Please circle **one** correct answer for each question.

1. What percentage of cancer patients suffer pain at some point during their illness?
   a. 10%
   b. 30%
   c. 60%
   d. 90%

2. What percentage of cancer patients suffer for longer than on 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

Appendix A (Continued)

6. 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

7. What percentage of patients receiving narcotic analgesics around the clock become addicted?
   a. Less than 1%
   b. 5-10%
   c. 25%
   d. More than 25%

8. Which of the following statements accurately describe the mechanism of action of analgesics?
   a. Narcotics act in the CNS to decrease the transmission/perception of pan.
   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.

9. 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

10. 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 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.

11. Which group of symptoms are more related to chronic pain?
   a. Decreased appetite, decreased energy, sleep disturbances, apathy, decreased blood pressure.
   b. Grimacing, fast heart rate, fast respiratory rate, elevated blood pressure, sweating.
   c. Thrashing, grimacing, elevated heart rate, cold and clammy extremities.
   d. Groaning, elevated blood pressure, irritability, sweating.

Appendix A (Continued)

12. Which of the following drugs have the longest duration of action?
    a. Codeine
    b. Levodromoran
    c. Meperidine
    d. Morphine

13. Pain is frequently accompanied by which of the following?
    a. Increased caloric requirements, increased temperature
    b. Increased oxygen requirements, decreased temperature
    c. Decreased caloric requirements, decreased temperature
    d. Increased caloric requirements, decreased temperature

14. Dull and aching pain sensations are the responsibility of which of the following?
    a. A-delta fibers
    b. C fibers
    c. Opiate receptors
    d. Small myelinated fibers

15. According to the Gate control theory, the mechanism in the nervous system that is responsible for "gating" is located in:
    a. The substantia gelatinosa in the spinal cord
    b. The nociceptors in the skin
    c. Deep nociceptors in the muscles
    d. White matter in the brain

16. Pain is modulated by which of the following:
    a. Substantia gelatinosa
    b. Opiate receptors mu, gamma, and kappa
    c. A-delta fibers
    d. C fibers

17. 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 in <u>most likely</u> related to which of the following?
    a. Physical dependence on the analgesic
    b. Tolerance to the prescribed dose of analgesic
    c. A decrease in the blood level of the analgesic
    d. Early onset of addiction to the analgesic

Appendix A (Continued)

18. Following an abdominal hysterectomy, your pain management goal for Mrs. Colton should be which of the following:
   a. Enough pain relief to allow her to cooperate in post-op care
   b. To provide enough pain relief to keep Mrs. Colton from crying out
   c. To relieve her pain to a level that she can tolerate
   d. To provide her complete pain relief

19. Mr West has prostatic cancer that has spread to the bones. In planning for his care, the primary factor to consider is:
   a. The likelihood that he will need higher doses later on
   b. The probabilty that he will become addicted to narcotics
   c. His overall quality of life
   d. The wishes of his family regarding pain relief

20. In assessing the patient's pain, the nurse should take into account which of the following variables which may affect the expression of pain:
   a. Environment and social consequences of expressions of pain
   b. Cultural diversity in the ways patients express their discomfort
   c. The observable measureable actions of the patient
   d. a and b
   e. a, b, c

21. The action of naloxone is:
   a. To enhance the effect of narcotic analgesics
   b. To act as a narcotic antagonist
   c. To act as a narcotic agonist
   d. To act as a respiratory stimulant

22. Research suggests that:
   a. Physicians underprescribe and nurses undermedicate for pain
   b. Physicians prescribe appropriately and nurses undermedicate
   c. Physicians underprescribe and nurses give optimal doses based on those orders
   d. Physicians prescribe appropriately and nurses medicate appropriately in the majority of cases

23. One significant disadvantage of meperidine is:
   a. It is more expensive than morphine
   b. It has more CNS toxicity than morphine
   c. It is more addicting than morphine
   d. It is more difficult to administer than morphine

Appendix A (Continued)

24. Which of the following methods of narcotic administration provides steady state analgesia?
    a. Patient controlled analgesia using a pump
    b. Intravenous drip of narcotics
    c. Intravenous bolus administration of narcotics
    d. Intramuscular injections every two hours

25. The primary benefit of providing steady state analgesia is which of the following?
    a. It is cost effective because it uses less nursing time
    b. The patient receives less narcotic overall
    c. Respiratory depression is less likely to occur
    d. The patient is more comfortable

26. A nursing decision to adminster pain medicationshould be based on all of the following EXCEPT:
    a. The patient's description of the quality of his/her pain
    b. The family's request to keep the patient comfortable
    c. The nurse's objective assessment of the intensity of the pain
    d. The patient's subjective report of the intensity of her/his pain
    e. The nurse's knowledge of the action of narcotic analgesics

27. Who should have the most control over the patient's pain management regimen?
    a. The patient
    b. The family
    c. The nurse
    d. The physician
    e. The pharmacist

28. **DEFINITION**: After repeated administration of a narcotic, 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?
    a. Addiction
    b. Physical dependence
    c. Tolerance
    d. Addictive personality

Appendix A (Continued)

29. 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)

30. 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)

31. 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.

Appendix B
Letter of Permission

July 7, 1998

To: Bonny S. Karr
3701 Carollwood Place Cir. Apt 310
Tampa, FL 33624

Bonny Karr has permission to use my instrument, The Pain Management Knowledge Test-Revised, for her research study entitled: A Comparison Between VA And Hospice Nurses In Their Knowledge Of Cancer Pain Management.

Susan C. McMillan

Susan C. McMillan, PhD, RN, FAAN
ACS Professor of Oncology Nursing

College of Nursing, Health Sciences Center
University of South Florida • 12901 Bruce B. Downs Boulevard, MDC Box 22 • Tampa, Florida 33612-4766
(813) 974-2191 • Fax (813) 974-5418

Appendix C
VA Demographic Data Form

1. Age:____

2. Gender: Male___
Female____

3. Shift: 7a-7p___
7p-7a____
varies (both)__

4. Educational Level:
LPN___
ADN___
Diploma ___
Bachelor's___ Nsg__ Non-Nsg__
Masters___ Nsg__ Non-Nsg__

5. Ethnic Background:
African-American___
Asian/Pacific Islander___
Hispanic___
Caucasian____
Native-American/Eskimo___
Other_____(please specify)

6. Years of Nursing Experience: _____
If less than one year nursing experience, how many months experience? ____

7. How long have you worked on this unit? _____

8. Professional Memberships:
Are you a member of a national or local organization? (i.e. ANA/FNA/ONS)
Yes ____ (please specify)_____
No _____

9. Do you have any nursing certifications?
Yes ____ (please specify) _____
No ____

10. Have you ever attended a pain management course? Yes ___ No ___
If yes, when was the last one attended? ____ Were CEUs given? ___
Total CEUs in pain management this year? ____

11. What is your primary responsibility?
Patient care ____ Education____
Management ____ Other____ (please specify) ____

Appendix D
Hospice Demographic Data Form

1. Age:____

2. Gender: Male___
Female____

3. Shift: 7a-7p___
7p-7a____
varies (both)__

4. Educational Level:
LPN___
ADN___
Diploma ___
Bachelor's___ Nsg__ Non-Nsg__
Masters___ Nsg__ Non-Nsg__

5. Ethnic Background:
African-American___
Asian/Pacific Islander___
Hispanic___
Caucasian____
Native-American/Eskimo___
Other_____(please specify)

6. Years of Nursing Experience: _____
If less than one year nursing experience, how many months experience? ____

7. How long have you worked at Hospice? _____

8. Professional Memberships:
Are you a member of a national or local organization? (i.e. ANA/FNA/ONS)
Yes ____ (please specify)_____
No _____

9. Do you have any nursing certifications?
Yes ____ (please specify) _____
No ____

10. Have you ever attended a pain management course? Yes ___ No ___
If yes, when was the last one attended? ____ Were CEUs given? ___
Total CEUs in pain management this year? ____

11. What is your primary responsibility?
Patient care ____ Education____
Management ____ Other____ (please specify) ____

Appendix E
Approval Letters

Appendix E

Office of Research
Division of Compliance Services
Institutional Review Boards
MPA No. 1284-01XB/M1284-02XM
3702 Spectrum Boulevard, Suite 155
Tampa, Florida 33612-9421
(813) 974-2254
FAX (813) 974-2216

December 5, 1997

Bonnie Karr
3701 Carrollwood PL Circle #310
Tampa FL 33624

Dear Ms. Karr:

Your new protocol entitled, "A Comparison of Knowledge of Cancer Pain Between VA and Hospice Nurses," (USF #4801) was approved under exempt category #2 by the Institutional Review Board. This action will be reported to the next convened IRB meeting on Jan. 5, 1998.

If, during the course of the study, there are any changes, amendments, adverse events, or you decide to terminate the study, the Institutional Review Board requests immediate notification. This will assist us in helping keep your protocol files up-to-date and compliant with the federal regulations.

As Principal Investigator of this protocol, it will be your responsibility to keep necessary documentation, rather than add further responsibility to the role of nurses, pharmacists, or other health care providers not directly involved with this study.

Thank you for your participation in the University of South Florida's Institutional Review Board process. If at any time I, or any member of my staff can be of assistance, please do not hesitate to call.

Sincerely,

Thomas G. Ferguson
Asst. Director
Compliance Office

TGF/wbm

cc:

Appendix E (Continued)

College of Nursing
Health Sciences Center
University of South Florida
12901 Bruce B. Downs Blvd., MDC Box 22
Tampa, Florida 33612-4799
(813) 974-2191

August 28, 1997

Chair, Research and Development Committee
James A. Haley Veterans Hospital
13000 Bruce B. Downs Blvd
Tampa, FL

Dear Chairperson:

I am writing to verify that the thesis proposal of Bonny Karr was approved by her thesis committee on July 2, 1997. Her study is entitled: A Comparison of Knowledge of Cancer Pain between VA and Hospice Nurses. Her thesis committee consists of three members. I am chair of the committee, and the members are Cecile Lengacher, PhD, RN and Mary Tittle, PhD, RN.

If you have questions, please do not hesitate to call me at 974-9188. Thank you for reviewing this student project.

Sincerely,

Susan C McMillan

Susan C. McMillan, PhD, RN, FAAN
American Cancer Society Professor
of Oncology Nursing

Appendix E (Continued)

November 25, 1997

Associate Chief of Staff for Research & Development (151)

Review of Research Protocol

Bonnie S. Karr, BSN

1. The contingency for Research & Development Committee approval on October 6, 1997 for your study titled, "A Comparison of Knowledge of Cancer Pain Between VA and Hospice Nurses," has been satisfied.

2. Please submit documentation of USF Health Sciences Center IRB approval or exemption to the Rsearch Office (151).

ROBERT V. FARESE, M. D.

Appendix F

Consent Form

University of South Florida
College of Nursing
Investigator: Bonny S. Karr, RN (265-8614)
Title: Hospice Nurses' Knowledge of Cancer Pain Management

Dear Nurse:

I am a graduate student at the University of South Florida. For my thesis, I am researching nurses' knowledge of cancer pain and factors that affect that knowledge. Your participation can help to further nursing knowledge in this area.

As a nurse in this organization you will be asked to complete a short demographic form describing yourself and and a 31-item multiple choice test. This process will take approximately 25 minutes.. There are no risks involved and your grade will be known only to me. Please do not write your name on the demographic data form or the test. Your participation is strictly voluntary and I will be available to you during the test and after the study is completed should you have further questions. Thank You.

Please read the above information about this study and feel free to express any questions or concerns. By completing the attached test and demographic data form you are indicating your understanding of the study and consent to participate.

_____ _____

Signature of investigator Date