

EFFECT OF EDUCATION ON THE KNOWLEDGE AND ATTITUDES
OF ACUTE CARE NURSES REGARDING PAIN MANAGEMENT

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ABSTRACT

RESEARCH SUBJECT: Effect on Knowledge and Attitudes of Acute Care Nurses
on Pain Management.

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Often nurses lack knowledge about existing evidence-based pain management practices. In addition, nurses frequently express negative attitudes regarding pain and pain management. Nurses may change pain management practices and gain an enhanced attitude toward pain and pain management following education programs on pain management. The purpose of this study is to assess knowledge and attitudes about evidence-based pain management in a group of acute care nurses prior to and after an online educational intervention. This is a modified replication of the Swain (2008) study. Translation Science is the theoretical framework used for implementation of evidence-based pain management practices. The convenience sample will be 400 nurses from acute care nursing units at a regional teaching community hospital. Nurses will complete the Knowledge and Attitudes Survey Regarding Pain prior to and after an online educational intervention. The findings will provide information about nurse pain knowledge, nurse attitudes about pain and pain management, and the effect of an online education intervention on nurse pain knowledge and nurse pain attitudes.

Chapter I

Introduction

The effective management of pain is a major issue across the United States for hospitalized patients. Psychosocial and functional issues related to pain are major consequences of unrelieved pain (Reid et al., 2008). Research findings demonstrated that a possible cause for non-adherence to pain management treatment is the result of attitudinal barriers of the patients (Fahey et al., 2008).

However, there is also evidence that health care providers have knowledge deficits regarding effective pain management. A study conducted by Troller (2003) had a sample of cancer patients, who were mainly treated by general practitioners. A comparison was made between the doses of morphine in these patients and the recommendations that were made by the European Association of Palliative Care (EAPC). The findings of this study showed that only one-half of the cancer patients treated by the general practitioners received the recommended dose of morphine. Interestingly, only (30%) of these patients had an order written for breakthrough pain.

In a study by Wilson (2007), the researchers discovered that nurse knowledge of analgesia and pain management was not adequate which prevented nurses from adequately managing pain. This suggested that education is a primary factor in adequate

pain management. But, their additional findings showed that the work environment was also an influential factor contributing to effective pain management.

Background and Significance

Ineffective pain management is a not only a major issue for patients with unrelieved pain, but hospitals must comply to pain standards of care due to accreditation criteria (Pasero, Manwarren, & McCaffery, 2007). Pain management guidelines are available and are based upon evidence (Samuels & Fetzer, 2009). Implementation of evidence-based practice pain management protocols and guidelines are necessary in order to adequately provide pain relief for hospitalized patients.

A few studies have described that lack of proper assessment and treatment of pain by healthcare professionals including nurses contribute greatly to under treatment of pain (Xue et al., 2007; McCaffery, Pasero, & Ferrel, 2007; Dalton et al., 1998). This issue along with the lack of knowledge of evidence-based pain management practices and misconceptions of it creates an environment of poor patient outcomes regarding pain.

Problem Statement

Pain management outcomes for hospitalized patients are often inadequate. The knowledge and attitudes of nurses about evidence-based pain management likely affects their ability to obtain desired patient outcomes. Further research is needed to understand knowledge and attitude barriers in order to obtain effective pain management for hospitalized patients.

Purpose of the Study

The purpose of this study is to assess knowledge and attitudes about evidence-based pain management in a group of acute care nurses prior to and after an educational intervention.

Research Question

Are selected content and methods of an educational intervention effective in enhancing the knowledge and attitudes of acute care nurses in a community hospital regarding evidence-based pain management?

Theoretical Framework

The Translation Research Model designed by Titler and Everett is a framework for testing and/or selecting strategies to promote adoption of evidence-based practices (Titler, 2010). The strength of the innovation or new evidence-based practice is not enough to translate it into new everyday practice. According to the model, adoption of evidence-based practices or innovations is influenced within a context of a social system or work environment and not just by the innovation or evidence-based practice. Within that social system, which includes the organization such as hospital or nursing profession, there are individual members such as physicians and nurses. Strategies to be used for promoting adoption of evidence-based practices must include the type and strength of the evidence, communication/dissemination of the evidence/innovation, and consideration of the characteristics of individual users/members and social system (organization or nursing profession) within a context of participative change. Using the translational research model as a framework, nurse educators may design educational strategies to

communicate the strength of evidence-based pain management to nurses while considering their individual (knowledge and attitudes) and organization characteristics to promote adoption of the practices.

Definition of Terms

Knowledge and Attitudes about Pain.

Conceptual Definition. The understanding and perceptions of pain management

Operational Definition. Knowledge and attitudes about pain management will be measured by the Knowledge and Attitudes Survey Regarding Pain (KASRP-2008).

Limitations

The educational interventions, pretests, and posttests will be conducted at only one hospital. Therefore generalization of study findings is limited to this one hospital.

Assumptions

1. Nurses have knowledge and attitudes about pain and pain management.
2. Evidence-based pain management guidelines are available for use.

Summary

Often nurses' knowledge about pain and current evidence-pain management strategies and guidelines is limited and not optimal. In addition, nurses frequently have misconceptions about pain management pain management and develop negative attitudes about pain, patients with pain, and pain management. Much of the time, it appears that negative pain attitudes can be attributed to the lack of pain knowledge and evidence-

based pain management practices and guidelines. Further research regarding the extent of the lack of knowledge and negative attitudes about pain among nurses is needed. In addition, when specific areas of deficits regarding pain knowledge and evidence-based pain management are identified, research studies need to be conducted to determine the most effective educational methods to increase knowledge of pain and its evidence-based management.

Chapter II

Literature Review

Nurses often struggle to provide adequate pain management for their patients in the health care setting often due to a lack of knowledge and negative attitudes. Adequate pain relief is a primary factor related to patient satisfaction of care received while hospitalized. Nurses often do not receive adequate education in their nursing programs to prepare them to optimally manage patients, who are experiencing pain. The purpose of this study is to evaluate nurses' knowledge and attitudes regarding pain management that can give insight on what interventions are needed for nurses to deliver quality patient management.

The theoretical framework is the Translation Science and implementation model designed by Titler and Everett in 2001. This theory proposes testing and/or selecting of strategies to promote adoption of evidence-based practices (Titler, 2010). The findings of this study will provide information on strategies of how to promote nurses to adopt and utilize appropriate selection of pain management evidence-based practices.

Literature Review Organization

The literature review will be organized into four sections: nurse pain knowledge, nurse pain knowledge and attitudes, pain management evidence-based practice and summary. First up, are reviews of research related to nurse pain knowledge.

Nurse Pain Knowledge

Unnecessary suffering among the patients' we care for is problematic. Ineffective pain management is often due to misconceptions regarding pain. These misconceptions include: respiratory depression related to exaggerated risks of opioid addiction, pharmacological treatment of pain, disbelieving reports of pain, patients' tolerance, and treatment of older adults. Adequate pain management would be better managed if it were based on evidence-based knowledge (Wilson, 2007).

The purpose of the study is to determine if there were differences between two different types of clinical nurses in knowledge of pain management related to clinical experience and a post-nursing program education intervention. The hypothesis appeared to be that it would be the type of clinical experiences or the educational intervention that would affect pain management knowledge (Wilson, 2007).

The population consisted of district nurses (general) and hospice/oncology nurses (specialist). Inclusion criteria were that each nurse had attended a post-registration education pain management course in the past three years. There were no significant differences in age range, mean age, and gender status for both groups of nurses. The general nurses were excluded from the study if they had undergone any type of pain management education such as modules relating to pain to ensure pain knowledge was exclusive to their pre-registration education intervention (Wilson, 2007).

The self-administered questionnaire was a revision of one designed by McCaffery in 1986. The questionnaire was specifically designed to measure nurses' knowledge in relation to pharmacological/physiological aspects of pain management and assessment.

Nurses were informed that the goal of the questionnaire was to identify attitudes and the knowledge base of nurses in relation to pain management (Wilson, 2007).

The questionnaire was approved by The Local Research and Ethics Committee, along with the Research Governance Committee. Nurses volunteered to be part of this research project. One hundred questionnaires were evenly distributed between the two groups. Fifty to the district nurses (general) and 50 to the hospice /oncology nurses' (specialists). Out of the 100 distributed, 86 were returned. Fourteen participants were discontinued from the study which left 72 questionnaires to be evaluated. Twenty questions were asked. One point was given for each correct answer with a possible maximum score of 20 (Wilson, 2007).

Inferential and descriptive statistics were used to analyze the data. The specialist nurses scored higher (15.83) than the general nurses (12.76) regarding correct responses given on the pain knowledge questionnaire. Using a Mann-Whitney *u*-test, a significant differences was found between the means ($p < .01$) of the knowledge scores (Wilson, 2007).

A t-test was used to compare nursing experience in years, and expressed as a mean score for each group. A positive correlation was shown to exist between pain knowledge scores and years of experience. As the nurses' experience in years increases, there is a corresponding increase in knowledge scores ($p < .01$). A positive correlation did exist for the general nurses, emphasizing that knowledge scores do increase as experience increases ($p < .01$). Specialty nurse with an increase in years of experience showed no relationship to an increase in knowledge scores (Wilson, 2007).

Wilson (2007) concluded that pain management education and area of specialty affects knowledge of pain management. But, she also suggested that the work environment also plays a factor in the success of pain management for patients. Nurses must become better educated, encouraged to be reflective, and to use evidence-based practice. Nurses must be able to become autonomous and also work within interdisciplinary teams when attempting to manage patients' pain.

Jablonski and Ersek (2009) proclaimed that a gap between current best practice, and actual practice related to pain management in long term care facilities continues to exist. The purpose of their study was to investigate the extent to which staff working in extended care facilities, adhere to pain management practice guidelines, and incorporate evidence based practice into their daily work related to adequate pain management.

The study took place in Washington state. Fourteen nursing homes/extended care facilities (ECF) were assessed for pain management practices. Criteria for inclusion in the study consisted of ECF providing long term care defined as focusing on palliative care only and for long term, which housed at least 50 residents. Extend care facilities excluded in this study were ones that focused on skilled nursing care and residents being reimbursed under Medicare Part B. Eight of the 14 facilities were non-profit and six of the 14 facilities were for profit (Jablonski & Ersek, 2009).

Eligibility criteria included for participation included residents age greater than 65, life expectancy of greater than six months, recipients of long-term care at the facility, and have experienced moderate to severe pain within the last seven days. The sample was obtained in three ways. The medical records department or the Minimum Data Set

(MDS) coordinator provided the documentation of the clients who scored a 2 for moderate pain, or a 3 for severe pain. Licensed nurses responsible for patient care were interviewed by the research staff. Nurses were questioned as to which patients' they believe had experienced moderate to severe pain within the last week. A nurse researcher reviewed patients' records, who were not identified by the staff nurses as experiencing pain within the last week. Patients with a pain related diagnosis was interviewed by the researchers. If they reported moderate to severe pain they were invited to participate in the study. Informed consent was obtained. If the resident was unable to give informed consent due to cognitive disabilities, a surrogate signed consent for them (Jablonski & Ersek, 2009).

The data sources were the medical records of 291 residents. Demographic data included age, ranging from 67 to 103 (mean age of 86.6, SD = 7.76 years). Eighty-one percent were women. Ninety-four percent were White Non-Hispanic. Sixty-one percent were widowed. Additional demographic data was obtained regarding: gender, age, race/ethnicity, education, marital status, comorbid condition, and painful diagnoses. This information was collected through the residents' MDS Basic Assessment Form version 2.0, and the inclusion of other documents found in the medical records (Jablonski & Ersek, 2009).

The Pain Management Chart Audit Tool (PM-CAT) was adapted for use in this study. Originally, the tool was developed to measure the effectiveness of the evidence-based algorithm, and the accuracy of cancer pain management algorithm which was developed for the parent study. The variables measured with this tool consisted of nine

indicators addressing an inclusive multidimensional assessment of pain. The variables measured were: location, pain intensity, effect on functioning and/or quality of life, location, pattern, and character. Frequency of assessment was also included with these indicators as well as the effectiveness of changes in pain following a change in the treatment regimen, and assessment of residents' side effects after receiving analgesics (Jablonski, & Ersek, 2009).

Eight indicators were utilized to assess current best practices related to pain management. Prescribing analgesic practices concerned with the use of Tylenol and opioids, which were PRN or scheduled, and no pain assessment documented. Non-pharmacologic methods to reduce pain symptoms, and the improper use of Darvon, Demerol, and non-steroidal anti-inflammatory drugs were addressed. Interrater reliability of the PM-CAT was 90%. Chart audits were performed by three nurse coders. For a 30 day period, prior to chart review, pain assessment practices were under evaluation by the researchers. A focus of nursing notes took precedence for three reasons: Nurses commonly oversee residents' plan of care due to the lack of visits by the primary care physician. Nurses caring for the residents' are in the best position to assess their pain. The testing of interventions focused on nursing documentation (Jablonski & Ersek, 2009).

Scoring for the PM-CAT ranged from no pain assessment for a score of zero to partial adherence for a score of one to full adherence for a score of two. This scoring continued for a 30 day period of time. Progress notes and nursing documentation were also used as assessment data (Jablonski & Ersek, 2009).

The Iowa Pain Thermometer (IPT), a vertical visual scale, was used to assess pain intensity. IPT uses numeric methods and verbal descriptors for scoring. A type of Likert scale with values of 0-12 placed along the side of the thermometer. A score of 12 is equivalent to the worst pain ever, and a score of 0 indicates no pain felt. Evaluation of location, pain intensity, character and pattern was assessed through interviews conducted by trained research coordinators. Certified nurse assistants NA's were used as surrogates to report patients pain levels for those residents' who were unable to do so (Jablonski & Ersek, 2009).

To assess location of pain, residents were asked to respond yes or no to a list of ten body areas if they felt pain in that body area. (Jablonski & Ersek, 2009). Residents were also asked questions related to their pattern of pain. Their choices of answers consisted of four answers to select from which most described them. Pain character was determined by a list of eight descriptors. Data regarding location, pattern, character and intensity of pain were compiled to obtain the score of the PM-CAT items. A score of zero indicated that no scheduled pain medications were ordered. A score of one indicated that moderate to severe pain continued, and a score of two was obtained if round the clock pain medications were ordered and the patient reported mild pain to no pain.

The Pain Assessment and Management Chart Audit Tool (PM-CAT) showed adherence to evidence-based pain assessment guidelines was low in most cases and varied by quality indicators. Eighty-five percent of medical records provided documentation regarding pain assessment. Thirty-two percent of the audits showed weekly assessments. Which signifies that basic components of a thorough assessment

was lacking in regards to the nursing staff. Thirty-five percent of the audited charts provided no documentation regarding pain location. Fifty-three percent lacked documentation of intensity. Ninety-two percent lack documentation of pattern. Ninety-three percent lacked character, and 80% lack documentation of the impact of quality of life within the previous 30 days (Jablonski & Ersek, 2009).

Assessments of analgesic agents' effectiveness were shown to be 40% and 20% respectively for PRN and scheduled pain medications. Medication side effects related to documentation was also poor (73%). Documentation of the re-evaluation of new medication side effects was (63%); however, this was not within the recommended time frames (Jablonski & Ersek, 2009).

Chart audits were used to assess pharmacological and non pharmacological methods which were ordered to achieve pain management. The largest adherence was shown by the limited use of NSAIDs (93%), and Demerol avoidance (99%). Seventy-eight percent of the residents were either not prescribed opiates, or too low of a dose was ordered to adequately manage pain (Jablonski & Ersek, 2009).

Nursing documentation failed to address non-pharmacological methods of relieving pain, even though these strategies were written on the daily care plan. Only (11%) of the audited charts showed compliance with alternative means of pain management such as position change, and application of ice where appropriate (Jablonski & Ersek, 2009).

Jablonski and Ersek (2009) summarized that evidence based practice guidelines need to be followed in order to adequately relieve nursing home residents' pain. These

guidelines must include the most current pharmacological and non pharmacological methods, as well as an all-inclusive pain assessment. Mixed levels of adherence in this study, has proven to fall short of evidence based practice guidelines. Assessment practice fell shorter than prescribing practices in managing pain effectively. Medical record audits showed that the assessment of pain pattern, character, and effect of quality of life were rarely documented. However, the need to improve was shown in both assessment and prescribing practices. Interestingly, all of the residents' had identified pain to the researchers; only (15%) of the charts showed documentation of pain assessments. Over half of the audited charts showed any documentation of intensity of pain. These findings are consistent with previous research and demonstrate the need for further research to find the reasons for poor pain management among nursing home residents. Previous research also indicates a lack of knowledge for best practice related to opioid use. There is a considerable gap between best practice and how care providers assessed and adequately managed pain for the residents in the care of the staff. As a result, an appeal has been made to staff members of nursing homes and administrators to investigate their current policies and procedures. Failure to comply with current best practice must not occur.

Nurse Pain Knowledge and Attitudes

Accurate comprehension of all variables is necessary in order to achieve effective pain management for our patients. Two research questions were asked and were (a) What is the extent of nurses' knowledge regarding pain assessment and intervention? and

(b) How is nurses' level of education related to their knowledge of pain assessment and intervention? (Puls-McColl, Holden, & Buschmann, 2001).

A convenience sample of 25 registered nurses was obtained from an orthopaedic/surgical nursing unit. Investigators explained the study purpose and methods to nurses during monthly staff meetings. A descriptive research design was used to obtain nurses' knowledge of pain management and interventions (Puls-McColl et al., 2001).

A demographic sheet using descriptive statistics was utilized to obtain educational background and length of practice. Demographics revealed length of practice and educational background. Scores were obtained by calculating the number of correct answers on a 39-item scale. Of the nurses sampled, 44% were diploma prepared, 24% were ASN prepared, and, 32% were BSN prepared. Sixty-eight percent of the nurses had either less than 6 years (36%), or greater than 20 years (32%) of nursing experience. Sixty-four percent of the sample had spent less than ten years practicing as a nurse on an orthopedic unit (Puls-McColl et al., 2001).

The Pain Assessment and Interventions Questionnaire has six categories of question areas focusing on pain management knowledge. The six categories include: pain assessment, barriers to treatment, use of the terms: addiction, threshold, tolerance and dependence, actions and side effects of medications, treatment interventions, and the nurse's role in pain management (Puls-McColl et al., 2001).

Nurses' opinions on the significance of barriers to pain management were scored on a 13 item Likert scale, analyzed separately, using percentages of correct responses

within each respective domain. Nurses responses were elicited by 13 questions. Test-retest reliability, internal consistency, and inter-item reliability were evaluated for internal consistency. Because of the multiple variables this instrument was used to measure, it was decided that this instrument was not an appropriate tool for accurate measurement of the demographic data. Chart documentation by the nurses correlated with the nurses self-reports, which indicated reliability. In support of validity of the new instrument, which was reviewed by a panel of seven experts, and based on current literature, it was evaluated in a number of ways. An orthopedic/surgical unit clinical nurse specialist was utilized to review the revised format (Puls-McColl et al., 2001).

Univariate analysis was used to analyze the data obtained from the responses to the questionnaire. Correct answers were calculated in percentages within each domain. Power analysis showed that, for a one-tailed, 5% level of significance was found, indicating a power of 80%, a sample size of 25 would allow an effect size of 0.475 to be detected with the other variables remaining the same (Puls-McColl et al., 2001).

The range of scores for the knowledge statements were 24 to 35 with a mean of 29.3, (SD 2.83). Barriers to treatment scored an 88% correct rate. Sixty-three percent answered correctly in the domain of using accurate terminology. The question regarding actions and side effects of medication, only 60% answered correctly. Treatment interventions scored 84%, and nurses role had an 81% correct response rate. Due to the dichotomy of the questions, the multidimensionality related to the instrument, and the variability related to lack of item response to several questions; nurses either knew the information or didn't. This led to a less than 2/3 of the sample giving correct responses.

Also, 32% of the nurses were able to answer question 37 which was related to the most appropriate time to re-medicate the patients. Seventy-four percent of the nurses were aware that Meperidine was associated with tremors and seizures (Puls-McColl et al., 2001).

Demographic data findings showed that the ASN degree and diploma prepared nurses achieved the same mean score (28.7 ± 2.7 , mean \pm SD). While the bachelors prepared nurses scored higher ($30.5 \pm 2.4 \pm$ SD), this result did not prove to be statistically or significantly different than the other two groups ($F=1.09$, $p = NS$). This signifies that educational background did not affect knowledge scores (Puls-McColl et al., 2001).

Nurses who had more experience and cumulative time on orthopaedic experience had higher mean scores, but this result was not statistically significant ($F=0.73$, $p=NS$). The results show that neither years of experience nor education affected knowledge scores. The greatest barrier to adequate treatment of pain was nurses' responsibilities for caring for many other acutely ill patients. Other common barriers include: patients' reluctance to report pain, lack of time, and poor assessments were considered major barriers to control pain by the nurses in the study (Puls-McColl et al., 2001).

Many experts have concluded that a lack of formal and informal education related to pain management as significant and a very serious problem. Pain management education is lacking regardless of years of experience or nursing educational level. Based on these findings and other studies, nurses are aware of how to accurately assess pain theoretically, but fail to do so clinically (Puls-McColl et al., 2001).

Because nurses state they have insufficient time to adequately manage patients pain, this indicates staffing is not adequate and quality of care is compromised. Nurses have the legal responsibility to manage patients' pain and medical/surgical nursing units should be staffed well enough for nurses to carry out their duties. Future studies are needed to identify operational issues which affect nurses' knowledge. The issues contributing to a lack of action need to be addressed even if the nurse's knowledge of pain management is adequate (Puls-McColl et al., 2001).

Despite pain management regimens, research has repeatedly shown that patients' pain goes unrelieved. Nurses have the ability and duty to assess, manage, and teach patients' pain control strategies. Nurses need to act as advocates for their patients when physician ordered pain medication is not adequately managing pain. Characteristics of both patients and nurses contribute to poor pain management. The purpose of this study was to evaluate the effectiveness of a thorough week long pain management course on attitudes and knowledge of unit based nurses (McMillan, Tittle, Hagan, & Small, 2005).

The study took place at a 681 bed Veterans Administration Hospital with 1,800 cancer-related admissions, which totaled approximately 1,800 yearly with 623 being newly diagnosed with cancer. This VA hospital had a pain program and a chronic pain management team. Nurses working in either of these programs were excluded from the study (McMillan et al., 2005).

The sample consisted of 18 nurses, who were either identified by unit managers or were invited to identify themselves if they had interest in attending the program. After final selection of the sample, the study participants were invited to attend a 32 hour

intensive pain management course in a classroom at the university, which was located adjacent to the hospital. Faculty included two university faculty members, who specialized in pain management and assessment, and a pain nurse practitioner. Before the beginning of the course, a pre-test of their pain management knowledge was administered to the nurses (n =18) using the Pain Management Principles Knowledge Test (PMPKT). These pre-test results were not conveyed to the sample. Post-testing was completed immediately following the instruction (McMillan et al., 2005).

Two other surveys were administered prior to and after the pain resource nurse training course. These include the Nurses' Attitude Survey and the Pain Survey. The Nurses' Attitude Survey is a summated 25 item survey that assesses attitudes toward pain management including use opiates, who is in control, and use of nonpharmacological methods. The Pain Survey is an 18 item survey that assesses attitudes of nurses toward patients in pain, who are receiving opiates. The attitudes surveyed include age, gender, and relevance of behavior and mood. Nurses read vignettes and asked to respond to questions regarding the patient and pain management. Higher scoring indicates more positive attitudes (McMillan et al., 2005).

Content in the pain training course included prevalence of pain, types and causes of pain in people with cancer, physiology of pain, impact of the pain, pain assessment, pain management, pharmacologic methods, non-pharmacologic methods, attitudes that influence the nurse's response to patients in pain, involvement of patient and family, role of the pain team, application of pain standards, quality assurance related to pain management, and methods to facilitate change on the units.

Demographics for gender included 16 women and 2 men. Basic nursing education was 3 associate degrees, 5 diplomas, and 10 baccalaureate degrees. Highest level of education included 3 associate degrees, 4 diplomas, 9 baccalaureate degrees, and 2 master's degrees. The mean age of participants was 43.1 with a SD of 10.6 (McMillan et al., 2005).

Scores on the PMPKT improved significantly from pre-pain training course testing to post-pain training course testing ($p = < 0.001$) showing increased pain management knowledge. Scores on the post-pain training Nurses' Attitude Survey revealed significant improvement ($p = < 0.007$) over pre-pain training scores. Scores from the post-pain training Pain Management Survey revealed significant improvement ($p = < 0.55$) over the pre-pain training scores (McMillan et al., 2005).

Knowledge and attitudes of nurses were significantly improved after the advanced pain management course intervention. In light of the economy today, and the significance of shrinking budgets; the training of staff nurses regarding pain management to act as role models may be a viable option for hospital settings where pain issues are relevant to patient satisfaction regarding pain and adequate pain management. It was encouraged by the authors of this study to replicate this study, as a means of increasing nurses' knowledge and attitudes (McMillan et al., 2005).

Nurses and other health care providers have had access to evidence-based pain management (EBPM) guidelines for many years. However, many hospitals do not consistently use these guidelines. Poor pain management has likely occurred as a result. In order to consistently implement these guidelines, organizations must develop

appropriate policies and procedures. In addition, hospital accreditation agencies have set standards for hospitals and other health care organizations to be accountable for the use of EBPM guidelines (Samuels & Fetzer, 2009).

Samuels and Fetzer (2009) suggest that successful nurse implementation of EBPM guidelines consists of three components. The first component is that nurses have positive perceptions of the practice environment. A positive practice environment includes adequate time and resources, collaborative relationships, and appropriate communication. A second component for adequate EBPM use is that nurses have a high level of pain management clinical expertise. Lastly, the final component regarding appropriate EBPM use is that nurses actually implement these guidelines and interventions in practice.

The purpose of this study was to examine the contribution of individual nurses' perceptions of their practice environments and their clinical expertise in the use of EBPM. The research question posed by the researchers was: What are the effects of nurses' practice environment perception and clinical expertise on the implementation of EBPM? (Samuels & Fetzer, 2009).

Samuel and Fetzer (2009) used the Theory of Planned Behavior (TPB) by Ajzen as a theoretical framework for the study. The TPB offers the explanation that human behavior is considered to be intentional. The variables used in TPB are: normative factors such as the practice environment, clinical expertise, and the degree of control nurses have to act in ways that are independent (Samuels & Fetzer).

The convenience sample for this study initially included 92 surgical nurses working on three different units from 2 metropolitan hospitals with one of the hospitals having Magnet designation. Nurses ranged from 23 to 63 years old with a mean of 36.9 years (SD, 10.7), 8 months to 42 years of nursing experience, and 64% held bachelor's degrees. Most nurses (n=80) identified themselves as proficient, 2 as novices, and 10 as experts (Samuels & Fetzer, 2009).

Nurses were asked to complete two instruments. The first instrument was the Practice Environment Scale of the Nursing Work Index (PES-NW), which measures nurses' of the practice environment. Respondents rate each of 31 items on a scale of 1 to 4 from agree to strongly disagree. There are five equally divided subscales, consisting of: nursing foundations of quality care, staffing and resource adequacy, collegial nurse-physician relationships, and nurse manager ability, support, and leadership (Samuels & Fetzer, 2009).

The second tool was the Clinical Nursing Expertise (CNE) instrument, which is used to measure clinical expertise based on Benner's novice to expert framework. The CNE has 34 nursing activities common to medical-surgical nursing which includes a 5-point scale for which to rate the clinical expertise from novice to expert. A clinical expertise score is calculated as a mean from all of the items (Samuels & Fetzer 2009).

The third measurement was the Samuel's Pain Management Documentation Rating Scale (SPMDRS). The SPMDRS allows scoring of the quality of a nurse's pain management documentation to identify compliance with evidence-based pain management. The quality scores are related to 55 pain management documentation

patterns of assessment, interventions, re-assessment, and further intervention. Four different patient entries for each nurse were rated with a quality score ranging from 1=excellent to 7=very poor. A mean score is calculated from the four entry scores to determine each nurse's pain management documentation quality (Samuels & Fetzer, 2009).

The patient records of any patient, who received epidural opioid or patient-controlled analgesia were used for review using the SPMDRS. Seven nurses' records were unreadable so these records were excluded from data analysis, which resulted in the final sample size of 85 nurses. The records of patients who were receiving opioids through epidurals, along with patient controlled anesthesia (PCA's) were not included until the medications were discontinued (Samuels & Fetzer 2009).

The PES-NWI had the ability to distinguish between non-Magnet and Magnet hospitals. A high score indicated a positive practice environment, which supports criterion and content validity. Significant relationships were not demonstrated between PES-MWI scores related to expertise and demographic variables. Differences among variables across units were not shown across units. A significant difference was noted between the Magnet and non-Magnet hospital ($t_{83} = 2.45$; $p = .016$). The PES-NWI score was higher in the Magnet hospital (Samuels & Fetzer, 2009).

Concerning levels of expertise, differences were not noted between nurses employed at the Magnet versus the non-Magnet hospital within the sample studied. The theoretical notion that experience is a component of expertise has been supported, and validated by findings previously stated above. Significant moderate correlations existed

between demographic variables and expertise. Higher ratings of expertise correlated with older age ($r = 0.46$; $p < .000$), more years of experience ($r = 0.53$; $p < .000$), more years working on the unit ($r = .51$; $p < .000$), and more years of employment at the facility ($r = 0.051$; $p < .000$). These findings suggest the premise that a component of expertise is experience (Samuels & Fetzer 2009).

Pearson's correlation was used in data analysis to determine the relationship between variables. Multiple regression statistics was used to identify predictors of EBPM. Study findings indicate that nurses' clinical expertise contributed to a mere 4.4% of the variance of the quality of PMD. Concerning practice environment perception, there was no contribution noted. Findings demonstrated that the greater the level of expertise, correlated with a decreased PMD quality. The contribution of expertise proved to be in the negative direction. These results, as shown in previous studies, support the notion that the dominance of individual nurse's practice patterns (Samuels & Fetzer, 2009).

The study further emphasizes that individual nurse's education, experiences and proficient professionals, as demonstrated within this sample, suggest that nurses' personal experience and knowledge is the major factor used in documentation of pain management. Furthermore, expert nurses may lack recent educational evidence based guidelines needed to accurately document pain assessments. The adoption of EBPM can be influenced by a busy surgical unit, time constraints, and patient variables; which are commonly stated as barriers by nurses for reasons of inadequate pain management documentation in their charting (Samuels & Fetzer, 2009).

Pain management guidelines along with interventions must be followed, in order to correct unresolved pain issues among patients. Health care systems must make documentation and implementation a prioritization within their institution. The implementation of evidence-based practice regarding pain management is attempting to reach the goal of unresolved pain issues (Samuels & Fetzer, 2009).

This study showed that various levels of expertise in nursing, have a definite impact on satisfactory delivery of pain management to our patients' at the bedside. Novice nurses are more inclined to deliver adequate pain management to their patients, as they are more proficient with research literacy, and evidence-based practice guidelines. Evidence has shown that expert nurses are not fluent in adequate pain management delivery. With this in mind, educational efforts on the part of individual experienced nurses combined with the need to meet this standard must be overseen by organizations. Opportunities for new nurses to present at pain management conferences along with in-services could be a means in blending old practice with new knowledge. The use of the clinical record is the method of choice to be used as a learning tool for expert nurses. Structured templates may be the best method in training beginner and novice nurses for best pain practice management (Samuels & Fetzer, 2009).

It is important for administrators and nurse managers to make education available to experienced nurses so they will be better equipped in orienting new nurses to manage pain effectively. Reinforcement and counseling is needed to align best practice with current practice in order to achieve optimal patient outcomes related to best practice concerning the issue of pain management (Samuels & Fetzer, 2009).

Nurses lack knowledge, and have negative attitudes regarding cancer pain management concerning analgesic administration and titration. This knowledge deficit has led to using placebos, administering pain medication as needed rather than scheduled, extending dosage intervals, using too low of dosages, and having the inability to titrate dosages appropriately. Physicians along with patients lack knowledge regarding pain medication administration, which contributes to the magnification of the issue (Rushton, Eggett, & Sutherland, 2009).

Thus barriers to adequate cancer pain management exist. Patients with cancer fear unrelieved pain. Nurses working with cancer patients are often perceived to have more knowledge and more positive attitudes about cancer pain management than nurses not working with cancer pain patients. However, this may or may not be true. The purpose of this study was to investigate the knowledge base and attitudes of oncology and non-oncology nurses in Utah regarding cancer pain management (Rushton et al., 2009).

The study took place in the state of Utah. The population consisted of all RN licensures listed in the state of Utah. A random sample consisting of 1500 nurses were computer selected to participate in the study. All members of the Intermountain Chapter of Oncology Nursing Society also received the same materials (n = 100). It was thought by the researchers that oncology nurses would have a current knowledge base, and attitudes that were consistent with current literature and evidence based practice regarding cancer pain management (Rushton et al., 2009).

Potential participants received an explanation letter of the study, the Nurses Knowledge and Attitudes Survey Regarding Pain, the demographic survey, and a

stamped pre-addressed return envelope. Consent was implied through return of the survey. Surveys returned were from 303 non-oncology nurses and 44 oncology nurses. Demographic data included education, age, years of experience caring for patients with cancer as a registered nurse, exposure to education related to pain, personal cancer experience, and past and present employment status (Rushton et al., 2009).

Ferrell's Nurses Knowledge and Attitudes Survey (2008) was the tool used to compare attitudes and knowledge regarding cancer pain to non-oncology and oncology nurses. Content was established from the American Pain Society, AHCPR, and The World Health Organization. This survey consisted of 37 items. Aside from the demographic characteristics, the following characteristics were investigated: education, work status, area of employment, area of work, work position: staff nurse, number of patients with cancer cared for within the past six months, patients with cancer with pain lasting longer than one month, access to pain management teams, pain management teams helpful, pain management education, at least four hours of pain education in past two years, would attend pain management course, personal cancer experience, friend or family experience with cancer, personal pain experience, friend or family experience with pain (Rushton et al., 2003).

Content validity of the Nurses' Knowledge and Attitudes Survey Regarding Pain was established by pain experts. Construct validity was established by comparing nurses with different levels of expertise and their respective scores. The different levels of expertise consisted of: graduate nurses, new graduates, students, oncology nurses, and

experienced senior pain experts. The tool was able to distinguish the different levels of expertise (Rushton et al., 2003).

ANOVA and chi square analysis was used to measure demographic characteristics between oncology and non-oncology nurses. These variables were tested at the ($p = 0.01$) level. The knowledge and attitude questionnaire consisted of multiple choice and true or false questions. Scores were obtained and ANOVA was used to compare the differences between the two groups of participants (oncology and non-oncology nurses). Chi-squared analysis was used to measure individual nominal data questions, which reached a significant level of ($p = .01$) as to the relationship between groups (Rushton et al., 2003).

Demographic information showed no significant differences in experience or age among the two groups of nurses. The non-oncology nurses had less formal education versus the oncology nurses. Oncology nurses working in larger hospitals had more experience caring for patients with chronic pain and cancer. Oncology nurses also received more recent education related to pain management. ANOVA statistics showed significant differences between the oncology nurses and non-oncology nurses in their total scores on the Nurses' Knowledge and Attitude Survey Regarding Pain. The oncology nurses obtained significantly higher scores than the non-oncology nurses' total scores (Rushton et al., 2003).

Oncology nurses were able to correctly answer a selected group of 14 questions out of the 37 survey questions significantly more ($p < .01$) than the non-oncology nurses. Interestingly, non-oncology nurses were unable to answer 15 questions or greater 40% of

the time. Oncology nurses missed five questions or greater 40% of the time while non-oncology nurses missed 15 questions 40% of the time. Forty-three percent of the oncology nurses did not know about the use of some non-opioid drugs for pain management. Non-oncology nurses did not answer questions correctly related to non-pharmacologic methods of pain management (Rushton et al., 2003).

Oncology nurses have more expertise, regarding pain management, than their non-oncology counterparts. This study showed that non-oncology nurses had difficulty with the basic principles; however, oncology nurses did have problems answering analgesic questions correctly. These findings remain consistent with previous research. It is concerning when non-oncology nurses lack knowledge in dealing with cancer pain. It is important for all nurses to be able to manage cancer pain. Nurses should have the basic understanding of pain management principles, to effectively take optimal care of their patients. Both groups of nurses in this sample showed an interest in continuing education regarding pain management (Rushton, et al., 2003).

Nurses are looked at by the community as experts. They must have a strong knowledge base related to pain management, which will enable them to apply these principles to any medical setting. All members of the health care team, should be knowledgeable regarding evidence based pain management practices, and be supported in practicing correct pain management principles. Nurses and physicians must be cognizant of these principles in order to finally adequately manage pain (Rushton et al., 2003).

Barriers to pain management are not well defined, and resistant to efforts to correct, and manage pain appropriately. Nurses' attitudes towards pain assessment tools needs to be further investigated. Ajzen and Fishbein's Reasoned Action Theory (1975) was used in a study to provide a framework that depicts an attitude toward an object (pain assessment), which in this example is a function of his beliefs about those beliefs. Two variables of attitude are belief strength and feeling evaluation. These can be measured with an open-ended instrument. The purpose of the study was to : (a) Examine nurses' attitudes and beliefs about pain assessment tools and the relationship between nurses' attitudes towards pain assessment tools; and (b) Is there a correlation between attitudes regarding pain assessment, education, and experience (Young, Horton, & Davidhizar, 2006).

The study took place in a Midwest community hospital in the USA. It was understood by the participants, that their responses would be kept anonymous. A convenience sample of 52 nurses from one nursing unit volunteered to participate. Nurses had varying levels of experience, education about pain assessment tools, with the degree of pain education undetermined. The study was approved by the Human Rights Committee of the hospital and the college where the study took place (Young et al., 2006).

An open-ended instrument design was used to obtain the beliefs of the participants towards assessment of pain as a preliminary tactic in determining their beliefs. Understanding beliefs must be identified in order to understand the development of a fixed response instrument used to measure attitude, according to Fishbein and Ajzen

(1975). Three open-ended questions regarding beliefs about pain assessment were utilized: (a) What are your beliefs about assessment of pain?; (b) What are your beliefs about the use of pain assessment tools?; and (c) What are your beliefs about the use of pain assessment tools in improving patient outcomes? (Young et al., 2006).

Participants were asked to rate their belief strengths in relation to the previous three questions as a +1 (mildly) or +2 (strongly believe). The participants were also asked to rate their feeling regarding their belief which ranged from -2 (very negative) to +2 (very positive) for the questions (Young et al., 2006).

Nurses participating in the survey presented 187 beliefs related to the three questions asked. The following clusters were determined related to positive beliefs: (a) the value of assessment tools; (b) their value in relation of positive outcomes; and (c) the value of tools in providing objective and measurable data. The following clusters were determined related to negative beliefs: (a) assessment tools lacked objectivity; (b) assessment tools were subjective and inaccurate; and (c) other strategies than pain assessment tools could be used (Young et al., 2006).

Attitude was calculated using Fishbein and Ajzens' formula. Attitude scores varied from - 6 to 28 with a mean score of 8.3, indicative of positive attitudes toward tools which measure pain assessment. The following are positive beliefs revealed by the questionnaire: (a) pain assessment tools can help patients be reasonably comfortable; (b) are extremely beneficial to well-being; (c) are an important aspect of assessing pain accurately; (d) addressing the issue effectively; and (e) tools are paramount in resolving

the problems of pain. The nurses' overall beliefs were that usage of a pain tool aided them in establishing patients' overall comfort and welfare (Young et al., 2006).

Twenty-two responses indicated that assessment tools provide objective and measurable data, encouraging accountability and understanding of accurate pain assessment for their patients. Pain assessment tools provided for positive attitudes, beliefs, and greater accuracy with documentation. Over half of the sample believed that tools were subjective. Correlation between experience and attitudes was not shown. A correlation was found between positive attitudes and education (Young et al, 2006).

The findings also revealed that twenty-nine of the beliefs declared pain assessment tools inaccurate and subjective. One nurse stated that watching mannerisms is better. These beliefs lead to the theory that pain assessment tools are inaccurate and unbeneficial with negative outcomes as the end result (Young et al., 2006).

Changes in behavior for caregivers of patients in pain should reflect an increased positive attitude that will increase patient satisfaction with pain control. Education for caregivers and patients regarding pain management will reduce pain and increase patient satisfaction regarding pain control. Pain assessment tools should be used, but need to be improved for objectivity (Young, et al., 2006).

Educational, biographical, and experiential data were the demographic variables used to determine if a relationship exists between attitudes regarding pain assessment and experience and education. Ninety- four percent of the respondents were female. Over half of the respondents held an associate degree in nursing (ADN), Twenty-nine percent held a bachelor of science degree in Nursing (BSN). Licensed practical nurses (LPN)

accounted for 19% of the respondents. Twenty-eight percent of those surveyed had greater than ten years of experience and 11 respondents had less than five years of experience. Nurses with less than five years revealed a mean attitude of 6.3. Nurses ranging with five to ten years of experience revealed a mean attitude of 11.7, which was possibly skewed because one respondent's strength related to beliefs was 28. The mean attitude of the nurses (n = 28) with greater than ten years of experience was 8.2.

Study findings suggest that nurses with greater experience, and usage of pain assessment tools did not necessarily correlate with a more positive attitude regarding pain assessment tools. Those surveyed with fewer than five years experience revealed the most negative attitude regarding patient outcomes and usage of pain assessment tools, ranging from -6 to 12. Those surveyed with five to ten years experience revealed a more positive outlook on using pain assessment tools, and patient outcomes in comparison to all three levels regarding experience with a range of -2 to 28. Those surveyed with greater than ten years experience revealed a range of -3 to 16 (Young et al, 2006).

Hours of education regarding pain management had a great impact on attitudes towards pain assessment tools. Pain management education within the past two years related to assessment tools varied among the participants. Fifty-two percent received 1 - 3 hours, 29% received 5 - 10 hours of education, and 19% received over 10 hours of education related to pain assessment tools. One participant surveyed with 1 to 3 hours of pain management education revealed the most overall positive score of 28 regarding their belief and attitude in regards to pain assessment tools. Of those surveyed, the group with 1 to 3 hours of education held the most negative outlook regarding tools used to assess

pain with one participant score as low as -6. A mean of seven was revealed by the participants with 1 to 3 hours of education related to beliefs and attitudes. Participant with 5 to 10 hours of education ranged -3 to +16 (mean = 7). Those with greater than ten hours of pain management education ranged from 0 to 16 related to attitude and belief regarding pain outcomes and assessment. This demonstrated an overall strength reflecting a correlation between hours of education and beliefs and attitudes. A mean attitude of nine was revealed by this group (Young et al., 2006).

Within the healthcare system, patients' satisfaction with pain is an important problem that requires immediate intervention. Patient satisfaction with pain management is dependent upon nurses and other health care professionals involved in the patients care. Implications based on the findings of this study suggest that nurses play an important role is patient satisfaction related to pain. Changes in preconceived beliefs and ideas could possibly be the catalyst in providing improved outcomes for patients that we serve in acute and chronic care settings. In order to shorten the gaps in pain management, an improvement in positive beliefs and attitudes is a necessity among health care providers. Caregivers need to have an adequate knowledge base in order to care for their patients, which can be obtained through educational endeavors. An increasing knowledge base is the framework required to increase positive beliefs and attitudes among caregivers. When caregivers attain positive attitudes through education, patient satisfaction with pain management will increase as a result (Young et al., 2006).

Nurses provide less than adequate pain management. Nurses often lack the ability to implement pain assessments and the degree to which the context of nursing practice

influences the practice of individual nurses is very limited. The purpose of the study was to examine nursing pain assessment practice across two nursing units. The specific research questions were: (1) In what ways and to what extent does postoperative pain assessment vary across two nursing units? and (2) What is the impact of nursing unit social context on pain assessment practice? (Clabo, 2007).

Bourdieu's relational theory and the approach to reflexive ethnography was used to describe the nursing unit as context for practice. Bourdieu's relational theory describes the practice of individual people who are situated within structured social contexts, through the employment of 3 foundational concepts consisting of habitus, field, and capital. With this approach, nursing units can be conceptualized as a field, with its own social culture, specifically, regarding pain assessment practices (Clabo, 2007).

The study took place across two general surgical units in a 700 bed teaching hospital in Northeastern United States. Each unit had 21 to 30 beds and employed 27 to 30 registered nurses. Nurses were recruited during presentations and at unit meetings. Ten of the 12 dayshift nurses on unit A and 10 of the 13 dayshift nurses on unit B agreed to be observed as they implemented pain assessments and to be interviewed regarding each assessment (Clabo, 2007).

Using Bourdieu's approach, data collection consisted of participant observation, individual interviews, and small focus groups. This study took place in three phases over a nine month period. Phase I consisted of gaining entry within the hospital and each unit. The role of the researcher was established, relationships were developed between researchers and nursing staff. The researchers familiarized themselves with the units

general routines and practices. The researchers also began to conceptualize each nursing units social context. Phase I mainly utilized participant observation. Data was recorded on an ongoing basis using field notes (Clabo, 2007).

Phase II focused on pain assessment techniques by the nurses on day shift. Observing the nurses gave the researchers a sense of how nurses went about conducting pain assessments. The semi structured interviews gave the researchers more detailed information regarding the nurses thinking and their approaches used in assessing their patients' pain levels. The interviews were held in private, ranged from 20-30 minutes and were audio taped and transcribed verbatim. During stage II a three step analysis was performed. First, assessment conduct was described and the criteria were identified. This information was then compared and contrasted across the number of patients assessed by any one nurse. Cross nurse comparisons were made within each unit and then finally between the two nursing units.

Phase III consisted of increasing the understanding of the impact of social context within the nursing units on pain assessment practice of each individual nurse. A single focus group discussion facilitated by the researcher transpired on each nursing unit during phase III, this meeting lasted 35-45 minutes. Nurses were recruited through posted announcements. These sessions were also audiotaped and transcribed verbatim. Nurses were asked to explain: (a) The degree to which the picture presented represented their individual perception of pain assessment, (b) Their individual perceptions regarding how this pattern of pain assessment was developed and maintained, and (c) Each nurses

individual experiences with other nurses who assessment practices could possibly differ from the social norm of the unit (Clabo, 2007).

Using Bourdieu approach to ethnography, data analysis proceeded. The findings highly suggests the influence if collective habitus regarding the practice of each individual nurse. Each nurse's practice was shaped by the habitus in the field. While a person is capable of changing the field, the force of the field is greater though the power of the capital which shapes the collective habitus. A major contributor to why interventions designed to improve pain assessment practices in hospital settings do not appear to work, is that they neglect to take into consideration, the influence of the collective habitus (Clabo, 2007).

There were both similarities and differences between the two nursing units. Nurses on unit A described a pattern of pain assessment practices similar to each other. Nurses focused on reviewing the client's record as the first step in pain assessment. They focused on the type of surgery the pt. had undergone. This shows pain assessment was rooted in a reference typology based on procedure. Nurses in this group had a preconceived notion of what to expect regarding pain, based on surgical procedure. These nurses utilized subjective and objective criteria to evaluate pain, however, objective criteria was given primacy. Nurses on unit A also considered the patients credibility when the rated their pain as high, thinking the patients over estimated their pain. Nurses on unit A sometimes thought of the patients' as drug seekers. Another recurring theme regarding nurses on unit A was fear of being chastised by physicians for repeatedly contacting them for new analgesic pain medication orders (Clabo, 2007).

Unit B nurses also described a pattern of pain assessment that was very similar to unit A in regards to pain assessment. These nurses also used the clients record as their first means of assessing pain. Unit B nurses also use subjective and objective information regarding pain. In contrast, however, unit B nurses relied more heavily on subjective information, listening to what the patient said. Nurses on unit B did not make any reference to overmedication. On unit A, poor pain management was described as an issue that belonged to the patient, and on unit B, nurses viewed poor pain management as belonging to the physicians and their lack of prescribing adequate pain medication. During separate focus groups, nursing from both units described a standard acceptable method their units use to assess pain. A social context was presented with both groups and agreed that a common approach existed in each unit. One particular nurse stated that going against the norm of their unit when assessing pain would not be acceptable among their peers. Nurses on each unit described the acquisition of social capital for practicing on their unit. Bourdieu's theory provides a lens for examining multiple aspects of nursing practice, and the understanding and development of "the way we do things here", come to exist and is sustained in individual nursing units (Clabo, 2007).

In order to correct this situation, this knowledge is needed to increase efforts at improving the effectiveness of the assessment of pain and pain management and in the designing of educational models that will address the skill of each nurse and the staff of a nursing unit. Actions should be targeted towards changing either the types of capital, or the nature of the relations within the field. This suggests the interventions to augment pain assessment of nurses should be specific to each individual unit, and that the

interventions address the distinctive nature of nursing practice, and social capital within each specific field of practice. The model of nursing pain assessments generated in this study should be tested in other nursing units in the US and globally. Similar studies need to be conducted on other nursing units to refine this model. These hypotheses should be tested to show that changing the type of capital within the field, will affect and change the collective habitus generating a change that will be sustained over time (Clabo, 2007).

Pain management in all clinical setting is challenging for nurses. Research has documented that patient pain is often not adequately controlled. Nurses may lack the knowledge of pain management. There is not enough evidence to suggest that increased knowledge of nurses improves pain management practices. The purpose of the study by Dalton et al. (1998) was to explore the relationships among nurse attitudes, beliefs, expectancies, and intentions, and pain management practices. A secondary purpose was to begin to evaluate theoretical explanations for change and no change in practice. The research question was: What attitudes, beliefs, intentions, and expectancies regarding pain and pain management do nurses report before and after participating in the educational program? (Dalton et al.).

The investigators utilized a quasi-experimental time-series research design. The sample was comprised of 30 nurses working hospice or home health settings enrolled in a pain management educational program. The nurses ranged from 31 to 57 years of age. Twenty-nine nurses completed the educational program. Only 17 nurses or 57% of the original 29 nurses completed all of the follow-up questionnaires over four time periods of 5 weeks prior to the educational program, 5 weeks after the program, 6 months after the

program, and 12 months after the program. These 17 participants completed the Cancer Pain Knowledge Inventory, Survey of Expectations, Pain Assessment Questionnaire, and Activity Survey.

The Cancer Pain Knowledge Inventory is an instrument developed to measure nurses' knowledge and attitudes regarding analgesics, analgesic dosing, and analgesic scheduling. The results regarding the completion of this instrument were published elsewhere (Dalton et al., 1998).

The Pain Assessment Questionnaire (PAQ) is a 23 item questionnaire with 10 open-ended and 13 forced-choice questions about nurses' pain assessment skills, pain management practices, and personal attitudes toward pain. Categories of responses were identified for scoring. Specific questions were used to measure factors mediating attitudes. The research questions were embedded in the specific nurses' responses to the questionnaire and were not identical to the actual questions asked. The alpha of the multiple-choice questions were 0.83 or greater (Dalton et al., 1998).

The Survey of Expectations (SOE) is a six item survey that assessed the nurse subject's expectations for change in practice. Content validity was established. All items were scored on a scale of 1 to 5 and are then summed to form an indicator of level of expectation with a range of 6 to 30 (Dalton et al., 1998).

The Activity Survey was used to measure nurses' intention and expectation to do specific pain management activities six and twelve months after the educational program. It also measured perceptions of caregiver values and the value of practice behaviors to

peers and patients. This survey was developed by the investigators and content validity was established (Dalton et al., 1998).

The authors found that nurses who believed that patients should be pain free and who focused on both the assessment and the treatment of pain, implemented more pain management strategies. It was shown that nurses' attitudes, beliefs, intentions, and expectations about pain and pain management affected pain management strategies for the patients' they cared for (Dalton et al., 1998).

After participation in an educational program, nurses were more willing to believe patients; should be pain free. Chi square tested the significance of change in the proportions of participants who held an attitude. Due to constraints in time and collaborative efforts, nurses sometimes found it difficult to implement new pain management practices (Dalton et al., 1998).

Results related to responses to the Pain Assessment Questionnaire included that five weeks prior to the educational program that 54.2 % of the nurses reported that their attitude was is that the patient be pain free. By the beginning of the program, 96% of the nurses expressed this attitude. At the end of the program, all nurses agreed that patients should be pain free. This attitude for all nurses continued at 6 months and 12 months post-educational program (Dalton et al., 1998).

A review of the responses to the Activity Scale prior to the educational program revealed that an attitude of not expecting patients to be pain free was associated with a mean of 19 pain management activities. At the six month interval post-program, a mean of 55 pain management activities were noted as the expectation by nurses for patients to

be pain free. In addition, nurses' sensitivity to patient complaints related to pain increased over one year post-program as the pain management problems became more difficult (Dalton et al., 1998).

The results related to nurses' personal beliefs about pain and your sensitivity to patients' reports of pain change after an educational program were interesting. Five weeks prior to the educational program, 22.8% of the nurses reported that they believe complaints of pain are always real, while one year after the program, 81% of the nurses reported this belief, which was a significant difference ($p < 0.001$). Before the program, 59.3% of nurses reported that pain is subjective, while at one year post-program, 81% reported this same belief, which was not a significant difference ($p < 0.18$), but still an overall increase (Dalton et al., 1998).

All respondents reported prior to the program that their personal feelings were that help from doctors or nurses is needed to solve pain management problems. But one year after the program, only 67% give this report, which was a significant difference ($p < 0.001$). Five weeks prior to the program, 30% of the respondents believed that treatment can vary, while 90% had this belief one year after the program, which was significantly different ($p < 0.001$) between the two time frames (Dalton et al., 1998).

Implications from the findings of the study are that nurses need to understand the connection between what they believe and what actions they take to assist patients to be pain free. Educating the pain management team to improve knowledge, improve attitudes about pain management, decrease institutional barriers, and allow for new approaches in nursing practice needs to take place. Nurses must be allowed adequate time to analyze the

relationships between their beliefs about pain and the ways that they communicate with their patients, in order to achieve positive outcomes. The educators in clinical settings need to implement new strategies to advocate new knowledge and achieve individualized goals for change. Support and encouragement from administration must also play a role in this endeavor. Multidisciplinary collaboration is also needed to aid them in this change (Dalton et al., 1998).

There is a prevalence of pain in patients with cancer. Healthcare providers including nurses, pharmacists, and physicians vary within their attitudes toward and knowledge of cancer pain and its management. The purpose of this study was to assess attitudes and knowledge regarding pain management of inpatient oncology healthcare providers at an academic medical center and to identify areas of knowledge deficits (Xue et al., 2007).

The convenience sample included 96 healthcare providers of nurses, pharmacists, and physicians, who worked with or were associated with the medical and gynecologic oncology units of a large urban teaching hospital. There were 50 nurses, 18 pharmacists, and 28 physicians. Twenty-six of the nurses worked in medical oncology, most were female (92%), had an average age of 36, worked an average of 12.9 years in nursing, 58% had a bachelor's degree in nursing, and more than half held national certification in oncology nursing. Twenty-four nurses worked in gynecologic oncology, had an average age of 35, all were female, had worked an average of 10.3 years in nursing, 67% had a bachelor's degree in nursing, and 13% held national certification in oncology nursing (Xue et al., 2007).

Eighteen pharmacists were in the sample, and had an average age of 31, equal numbers across genders, average years of working in their specialty was 8.53 years, 71% held a doctoral degree, and 29% were board certified. Twenty-eight physicians were in the sample and had an average age of 28, 71% were male, all were residents, average number of years in their specialty was 1.70, and most were certified or trained in internal medicine (Xue et al., 2007).

The investigators used a survey of pain attitudes and knowledge that was employed by the Cancer Pain Role Model Program of the Wisconsin Pain Initiative (Weissman, et al., 1995). The survey has 36 items with a closed answer format. Four questions are related to the characteristics of practice patterns of pain assessments, 5 questions are related to attitudes toward pain, and 27 are related to knowledge of pain management. Demographic information as delineated previously was also collected (Xue et al., 2007).

All 96 healthcare providers completed the survey. The subjects self-reported that they used a variety of methods to determine pain type and intensity in patients with cancer, such as observation, pain assessment, patient complaint, and a 1 to 10 rating scale. The most frequent used tool to assess pain was the 1 to 10 rating scale with the medical oncology nurses at 88%, gynecologic oncology nurses at 100%, pharmacists at 53%, and physicians at 69% (Xue et al., 2007).

Most medical oncology nurses (60%) rate their education and experience working with cancer pain as fair, followed by 20% as poor, 16% as good, and 4% as excellent. These nurses (70%) treat patients with pain daily or more than once per day. Gynecologic

oncology nurses (43%) rate their education and experience working with cancer pain as fair, followed by 30%, who rated it as good, 17%, who rated it as poor, and 9%, who rated it as excellent. Half of these nurses treat patients with pain daily or more than once per day (Xue et al., 2007).

Most pharmacists (53%) rated their education and experience working with cancer pain as fair followed by 23%, who rate it as poor, 18%, who rated it as good, and 6%, who rated it as excellent. 60% of the pharmacists almost never treat patients with cancer pain. 7% of the pharmacists treated patients with cancer pain several times a week and 7% treated them on a daily basis (Xue et al., 2007).

One-third of the physicians rated their undergraduate education about pain management as good, followed by the majority, who rated it as poor or fair. These same physicians rated their residency training on pain management as similar to their medical school training. Fourteen percent of the physicians rated their residency pain management training as poor, 52% rated it as fair, 29% rated it as good, and 5% rated it as excellent. Thirty-three percent of the physicians almost never treated patients with cancer pain. Approximately 19% treated this patient group less than once per week, followed by 22%, who treated them several times per week, followed by 22%, who treated them daily, and last 4%, who treated them more than once per day (Xue et al., 2007).

Nurses in medical oncology correctly answered almost 60% of the 27 questions on the pain knowledge portion of the survey. Nurses in gynecologic oncology correctly answered almost 50% of the 27 pain knowledge questions. Pharmacists correctly

answered 64% of the pain knowledge questions. Physicians correctly answered 55% of the pain knowledge questions. The overall sample averaged 55% in correctly answering the 27 pain knowledge questions. ANOVA statistical analysis showed a significant difference among groups ($p=0.0007$) with the pharmacists and medical oncology nurses performing better than the physicians and gynecologic oncology nurses (Xue et al., 2007).

The entire sample believed that 50 to 60% of patients with cancer under-reported their pain with no significant differences between groups. However, in regards to patients, who over-report their pain, a statistically significant difference ($p=0.0007$) existed among the groups with physicians more likely to believe that patients over-reported their pain (Xue et al., 2007).

Implications include that interdisciplinary team involvement for pain management is likely more effective than individual involvement of healthcare providers. Use of an interdisciplinary approach to pain management would capture the strengths of each provider group and would help ensure the highest quality pain management for patients with cancer pain (Xue et al., 2007).

Pain Management Evidence-Based Practices

Nurses do not utilize evidence-based practices consistently for their management of patients experiencing pain. In the past decade or so, there has been research to support effective pain management strategies. When these evidence-based strategies and guidelines are not used, pain management is often non-effective and patients suffer needlessly. The aim of this study was to develop and test the psychometric properties of

a set of four instruments measuring prior conditions influencing nurses' decisions to adopt evidence-based pain management practices (Carlson, 2008).

The theoretical framework for this study is Roger's diffusion of innovations model. The tenets of this model can be directly applied to the development of the instruments to measure nurses' decisions to adopt evidence-based pain management practices. The adoption of innovation depends upon prior conditions or factors that foster or inhibit the need for awareness for additional knowledge about an innovation. The prior conditions include previous practice, felt needs/problems, innovativeness, and norms of the social system (Carlson, 2008).

The methodology was conducted in two phases, which included phase 1 development and establishment of content validity of the Carlson's Prior Conditions Instruments (CPCIs). Phase 2 is a descriptive survey in which data were collected using a demographic data questionnaire and the CPCIs (Carlson, 2008).

Instrument development in phase 1 was in two phases, which included item development and content validity. The CPCIs incorporated 4 individual summated rating instruments that measured each of the four prior conditions influencing nurses' pain management decisions. Instrument 1 addressed behaviors reflecting previous practice regarding pain assessment. The second instrument reflected the nurse's felt needs/problems in addressing satisfaction or dissatisfaction with pain management practices of self and others. Instrument 3 addressed the nurse's level of innovativeness or the ability to initiate or adapt to a change. The fourth instrument addressed the norms of the social system in which the nurse practices and included perceptions about behaviors

and expectations of others towards pain and its management. The instruments were designed for respondents to rate the items using a 5-point Likert scale. The four instruments were then assessed for content validity (Carlson, 2008).

Phase 2 was conducted using a convenience sample of nurses from two large and three small private hospitals in the Midwestern USA. Four hundred nurses were given a copy of the data collection instruments directly or through their departmental mailbox. Questionnaires were returned via internal mail envelopes or posted in each nursing unit (Carlson, 2008).

There were 187 questionnaires returned for analysis or a 47% response rate. The majority of respondents were female (94%), mean age of 43, average working experience of 15.5 years, 39% were associate degree nurses, 32% were bachelor degree nurses, 20% were diploma nurses, and 1.3% were master's prepared nurses (Carlson, 2008).

Reliability analysis revealed that reducing the number of items in each of the four instruments optimized their reliabilities. Construct validity was explored using factor analysis, which resulted in further item reduction on each instrument. In the end, all eight items from the four instruments determined by the experts determining content validity as not relevant were deleted (Carlson, 2008).

Implications for practice include that use of the CPCI may assist in identifying the prior conditions influencing nurses' decisions to adopt evidence-based pain management practices. Interventions could then be designed to use to facilitate adoption of EBPMP (Carlson, 2008).

Effective pain management continues to be an issue across many healthcare settings and particularly with nurses. Nurses are often not adequately trained or educated in effective evidence-based pain management strategies. Nurses are also often the primary pain managers for patients. Thus, specialized education regarding pain management is vitally important for nurses to be competent in providing evidence-based pain management for their patients. The first purpose of this study was to evaluate the effect of specialized education on the knowledge and attitudes of the inpatient nursing staff of a large metropolitan acute care hospital regarding pain and pain management. The second purpose of this study was to empower the nursing staff with current knowledge of pain management and to give them a sense of professional development of competence to care for and advocate for patients experiencing pain (Swain, 2008).

This study had a one group pretest/posttest design. There were two separate educational offerings. The first intervention was carried out during the hospital's mandatory skills days for the nursing staff. There were short small-group sessions that discussed two different pain-related case scenarios. The second educational opportunity was available on the hospital intranet using online modules (Swain, 2008).

The sample was nurses from nursing units with less than stellar patient satisfaction with pain management scores. The original number of nurses eligible to complete the study was 800. The nurses included nurses from all roles from bedside to managers to educators. A total of 482 nurses completed both educational sessions and pre and post surveys (Swain, 2008).

The Knowledge and Attitudes Survey Regarding Pain (KASRP) developed by Ferrell & McCaffery (2005), was used to survey the sample of nurses prior to educational interventions and after educational interventions. The KASRP is a 38 item, self-administered survey that includes 21 true/false items and 15 multiple-choice questions. The last two items contain patient care scenarios that allow the nurse to assess the patient's pain level and administer a range of medication based on the assessment. For both scenarios, the nurse may elect to administer additional opioids or withhold analgesia based on the patient's vital signs, behavior, and pain rating. The investigator shortened the survey to 28 questions in order to limit the time needed to complete it at this facility (Swain, 2008).

Nurses completed the initial KASRP after notification of the study about a month prior to its availability. It was anonymous with some non-identifiable demographic information that was requested to be able to compare groups. After completion of the initial KASRP, findings were reviewed. Based upon the aggregate results, it was determined to focus on questions or items that were answered correctly less than 70% of the time. The pain resource team collaborated to develop realistic and meaningful case scenarios to open up dialogue with nurses during the skills stations at the nursing skills days (Swain, 2008).

Four months after the small group education during the skills days, the pain resource team developed and launched a self-paced, on-line pain modules on the hospital intranet. The modules contained some slides showing the some of the information from the presurvey results along with education on those poorly scored items. The pain

resource group also created two modules related to the personal biases barriers to effective pain management. The postsurvey was conducted and offered online via intranet two months after the online education was initiated (Swain, 2008).

Results from the initial KASRP pretest assessment were that the mean number of correctly answered items was 20.5 out of a possible 28 or 72% with a range of 8 to 28 points scored for answering items correctly. Analysis of the posttest results revealed a mean score of 21.4 out of a possible 27 or 78% with a range of 7 to 27 for correctly answered items. The t test for related samples revealed a significantly higher level ($t=4.17$; $p=0.0001$) of knowledge on the posttest compared to the pretest (Swain, 2008).

The questions with the most improvement in scores were questions related to drugs. In addition, nurses employed the least amount of time less than one year scored the highest among the five groups of years of experience. In addition, nurses with greater than 11 years of experience, 15% did not fill in the stated intensity of pain rating that the patient stated was their rating when the picture showed a smiling patient. The nurses in critical care nursing units averaged 81% on the posttest while medical-surgical nurses averaged 77.1%, which was not a significant difference (Swain, 2008).

Implications from this study include that change in pain practices begin with education. Education must be developed utilizing findings from robust research studies and evidence-based practice guidelines but must incorporate everyday situations that the nurse may experience. The results of the study indicated that innovative educational approaches presenting appropriate facts, research, evidence-based practice, and care guidelines can have an impact on enhancing the knowledge and attitudes of nurses

regarding pain. Further studies of actual practices will be needed to determine if education is appropriate to facilitate use of evidence-based pain management practices for nurses who provide care for patients in pain (Swain, 2008).

Summary

Work environment also plays a factor in the success of pain management for patients (Wilson, 2007; Xue, 2009). Nurses must become better educated, encouraged to be reflective, and to use evidence-based practice (Carlson, 2008; Clabo, 2008; Jablonski & Ersek, 2009; McMillin et al., 2005; Puls-McColl et al., 2001; Rushton et al., 2003; Samuels & Fetzer, 2009; Swain, 2008; Young, 2006). Nurses must be able to become autonomous and also work within interdisciplinary teams when attempting to manage patients' pain (Carlson, 2008; Wilson, 2007; Xue, 2009).

Negative attitudes of nurses related to the experience of pain and pain management have been a barrier to effective pain management for many years (Clabo, 2008; Dalton, 1998; McMillin et al., 2005; Puls-McColl et al., 2001; Rushton et al., 2003; Samuels & Fetzer, 2009; Swain, 2008; Young, 2006). Negative nurse attitudes toward pain and pain management may be changed to positive attitudes with nurse education regarding current pain management knowledge and evidence-based pain management practices. Nurses need to understand the connection between what they believe and what actions they take to assist patients with pain to have effective pain management. Educating nurses can improve knowledge, improve attitudes about pain management, decrease institutional barriers, and allow for new approaches in nursing practice needs to

take place (Clabo, 2008; Dalton, 1998; McMillin et al., 2005; Samuels & Fetzer, 2009; Xue, 2009).

Further and continued research needs to continue to determine the best methods to educate nurses regarding effective pain management that is evidence-based and to enhance positive attitudes about pain and pain management. The proposed study will be a replication of the Swain (2008) study that used two educational methods to increase the pain management knowledge and promote positive attitudes about pain and pain management. See Chapter 3 for the methodology of the proposed study.

Chapter III

Methodology and Procedures

Introduction

The goal of successful pain management for acute care hospitalized patients remains elusive often due to nurses' knowledge deficits and negative attitudes about pain and evidence-based pain management. Nurse leaders must be able to identify the specific knowledge deficits and attitudes about pain in order to achieve effective pain management. For example, many nurses possess the misconception that use of opioids will lead to addiction (Swain, 2008). In addition, nurses frequently have a lack of knowledge about appropriate dosing of pain medication (Swain, 2008).

Problem Statement

Pain management outcomes for hospitalized patients are often inadequate. The knowledge and attitudes of nurses about evidence-based pain management likely affects their ability to obtain desired patient outcomes. Further research is needed to understand knowledge and attitude barriers in order to obtain effective pain management for hospitalized patients.

Purpose of the Study

The purpose of this study is to assess knowledge and attitudes about evidence-based pain management in a group of acute care nurses prior to and after an educational

intervention. This study is a partial replication of the study by Swain (2008) about the effect of education about pain management on the knowledge and attitudes of nurses.

Research Question

Are selected content and methods of an educational intervention effective in enhancing the knowledge and attitudes of acute care nurses in a community hospital regarding evidence-based pain management?

Population, Sample, and setting

A convenience sample will be used for study that consists of 400 registered nurses employed as acute care nurses at the bedside. The setting will be Indiana University Health Ball Memorial Hospital in Muncie, Indiana. The hospital is a non-for-profit hospital which provides services to the patients of Delaware County. The hospital is licensed by the state of Indiana, accredited by the Joint Commission and certified by Medicaid and Medicare.

Protection of Human Subjects

Approval for the study will be granted by the administrative directors of the acute care nursing units. Permission to conduct this study will be obtained from Ball State University Institution Review Board and IU Health Ball Memorial Hospital IRB. No risks are associated with this study.

Data provided by respondents will be deposited in an off-site database, compiled and then forwarded to the research team. Data submitted through Key Survey are anonymous and confidential. No names of respondents accompany the submission of responses. Respondents are protected by the off-site nature of the electronic survey via

Key Survey. The anonymous nature of the responses comes from the fact that this is a hosted survey system and the servers are not in Indiana. In addition, the institution's outbound emails are not tracked by mail, thus the raw data of the survey responses are not trackable to specific computers or persons by hospital personnel. Thus, no person associated with the hospital will see any individual responses.

Data will be analyzed by Key Survey and reported as aggregate data. Key Survey offers strong assurances about the anonymity of participants and the confidentiality of data. The United States government uses Key Survey to collect data for the Federal Bureau of Investigation, which requires high levels of anonymity and confidentiality.

Procedures

Once approval is obtained from the Ball Memorial Hospital and Ball State University IRBs, announcement of the proposed study will begin. One month prior to the start of data collection, the researcher will meet with all of nurse administrators, nurse managers, clinical nurse specialists, and nurse educators associated with the acute care nursing units. Pertinent information related to the study will be discussed including the starting and ending date of the study.

Potential nurse participants will receive a written and verbal explanation of the study during staff meetings, through posted flyers, and individual emails. The starting date of the study will also be communicated. The opportunity to complete the survey will occur over a 3 week period.

A link to access the survey will be emailed to all potential nurse participants. Nurses, who wish to participate in the study, will click on the link in the email to access

the survey and complete the survey online. After selecting desired responses, nurses submit responses by clicking on a “submit” button. Nurses may discontinue participation at any time during the completion of the survey and their answers will not be submitted to the data collection site.

The survey is administered through Key Survey, a company that offers online collection and analysis of data. The participating hospital contracts with Key Survey to gather selected data. Participants will have access to the on-line study for three weeks. Weekly reminder emails will be sent to the eligible nurses. Each week during the three weeks the survey link is open for participation, signs will be posted on all patient care units announcing the number of nurses who have participated, in order to remind nurses visually of the study.

Once results are obtained, findings will be reviewed. Based upon the aggregate data, hospital nurse educators along with the researcher will design an online educational plan using information from the questions or items that are answered correctly less than 70% of the time. This evidence-based pain management education plan will be offered to all nurses in the hospital.

Two months after the pain management education intervention, the survey will be available once more through Key Survey using the same processes as before. Nurses who complete the survey during the second round and not during the first round of the survey availability will have their survey entries deleted from the data pool.

Instrumentation

The Knowledge and Attitude Survey Regarding Pain (KASRP) is the survey instrument to be used in this study (Ferrell & McCaffery, 2008). It is a 38 item, self-administered survey that includes 21 true/false items and 15 multiple choice questions. The last 2 items contain patient care scenarios that allow the nurse to assess the patient's pain level and administer a range of medication based on the assessment. In the first scenario, the patient is smiling and joking with a visitor on postoperative day 1, but he subsequently rates his pain as an "8" on a pain scale from 0 to 10. He later requires additional analgesia due to inadequate pain relief. The second scenario is a patient who is quiet and grimaces when he turns in bed and who subsequently rates his pain as an "8" on a pain scale from 0 to 10. He also later requires additional analgesia due to inadequate pain relief. For both scenarios, the nurse participant may administer additional opioids or withhold analgesia based on the patient's vital signs, behavior, and pain rating.

Content validity of the KASRP has been established by a review of pain experts. The content of the tool is derived from current standards of pain management from organizations such as the American Pain Society and the World Health Organization. Construct validity has been established by comparing scores of nurses at various levels of expertise, such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise.

Test-retest reliability was established ($r > .80$) by repeat testing in a continuing education class of staff nurses ($n = 60$). Internal consistency reliability was established ($\alpha > .70$) with items reflecting both knowledge and attitude domains (Ferrell &

McCaffery, 2008). Nurses will also complete demographic sheets to indicate age, education background, certifications, nursing specialty, and years of experience.

Data Analysis

Ferrell and McCaffery (2008) recommended that the survey data should be analyzed in terms of percentage of total scores, as well as by examining individual items. The authors also suggested using total score rather than dividing items into knowledge and attitudes, because many items such as questions on addiction and the timing of postoperative analgesia are a combination of both the nurse's knowledge and attitudes toward managing pain. Statistical analysis will use t-test and ANOVA to compare the pre and post pain management education survey results. A p value of .05 or less will be considered significant.

Research Design

A one-group pretest/posttest is the research design. Comparisons of total and individual score percentages will be completed between the demographics of the sample of acute care nurses for both pre-education and post-education surveys.

Summary

The purpose of this study is to assess knowledge and attitudes about evidence-based pain management in a group of acute care nurses prior to and after an educational intervention. This study is a descriptive comparative survey using survey results from a sample of 400 acute care nurses. The 2008 version of KSRP will be used to collect data. Data analysis will be comprised of descriptive statistics. The findings generated from

this study will provide information to develop an effective educational plan to assist nurses to improve knowledge of evidence-based pain management and enhance attitudes toward pain and pain management.

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