Knowledge and Attitudes
of Registered Nurses Toward Pain

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Abstract

This research provided relevant data to support pain research literature that finds nurses do not have the knowledge base that they require to sufficiently provide effective pain management. The data demonstrated that nurses have mixed attitudes toward pain. These two findings have been observed in the literature for more than 20 years, but were important results for the hospitals and the nurses involved in the study. The purposes of this study were to identify the level of knowledge and attitudes in a sample of nurses from the surgical and medical units in three hospitals, and determine whether a difference between these two groups existed. The institutional resources to support pain relief practices provided by each hospital were also documented.

Data were collected using a convenience sample from the medical and surgical units of three hospitals. Of the 113 nurses who volunteered to participate, 78 worked in surgical units and 35 worked in medical units. Demographic data were collected about the participants. The established instruments used to obtain data about knowledge and attitude included: (a) Nurses Knowledge of Pain Issues Survey, (b) Attitude to Pain Control Scale, and (c) Andrew and Robert Vignette. Data collected were quantitative along with two open-ended questions for a rich, qualitative section.

Inadequate knowledge and outdated attitudes were very evident in the responses. Data from the open-ended questions described how nurses assessed pain and the most common problems caring for patients in pain. Nursing practice implications for these hospitals involve initiating a process to develop an educational pain program for nurses throughout the hospital. Utilizing findings from other studies, the program should have
an interdisciplinary approach to the planning, implementation, evaluation, and ongoing support. This study supports the belief that inadequate pain management has been attributed to many factors, most importantly to a lack of knowledge. Pain is a costly, unnecessary complication for the patient as well as the hospital. It follows then, that it is in the best interest of all involved to implement an educational pain program in order to influence practice.
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CHAPTER ONE : THE PROBLEM

Introduction

Considerable evidence demonstrates that nurses have gaps in knowledge and misbeliefs about pain. Pain assessment and management are necessary components of nursing care for patients in a variety of settings. With the many advances in pain management options over the last 20 years, it is interesting that nurses and physicians continue to under-medicate patients in pain (Carr, 1990; Diekmann & Wassem, 1991; Slack & Faut-Callahan, 1991; Watt-Watson 1987). The most common analgesic order written by the physician allows nurses the choice of route and frequency of medication administration based on their assessment of patients' pain. As well, nurses may choose to utilize non-pharmacological interventions (i.e., application of cold, positioning, distraction) to assist in the treatment of pain on a daily and even hourly basis. Therefore, nurses have a unique role in pain management in communicating with and advocating for patients' pain relief. However, nurses' effectiveness in pain management is dependent upon their pain knowledge and attitudes as they interpret the information they gather from patients and the clinical content during their assessment process. A sound basis of knowledge about pain assessment as well as pain management options, in particular knowledge of analgesics, is important to providing the patient with the best pain management possible. The purpose of this study is to examine nurses' knowledge and beliefs regarding pain and pain management from within the medical and surgical acute care settings.

Ferrell, Ebarts, McCaffery, and Grant (1991) noted that although 91% of their nurse sample used patient self-report to assess pain, only 45% of nurses regarded their
data as the most influential factor. Instead, nurses have indicated they use their own beliefs as a basis for practice (Dalton, 1989). However, considerable research data supports the idea that patient self-report is the most reliable and important indicator of pain (McCaffery, 1995). An informal survey of nurses, in one of the medical and surgical areas to be studied, indicates that many nurses lack knowledge and act upon attitudes toward pain that do not reflect current thinking and research findings (personal communication, February 13, 1998). This study explores the knowledge and attitudes of nurses caring for medical and surgical patients in the acute care setting. The findings of this study will be shared with each hospital involved to increase the awareness of the knowledge level and attitudes that nurses are using to assess and manage pain in the medical and surgical settings.

Statement of the Problem

This descriptive study examines the knowledge level and attitudes of nurses working in medical and surgical patient care settings in three community hospitals. The main research questions addressed include:

1. What do nurses working in medical and surgical units know and believe about pain assessment and management?

2. Is there a difference in pain knowledge and attitudes between nurses working in medical versus surgical units?

3. What organizational resources are available to assist nurses with the assessment and management of pain?
4. Is there a relationship between the availability of hospital resources and nurses' knowledge and attitudes?

Rationale for the Study

The purpose of this study is to analyze the knowledge and attitudes of nurses working in acute medical and surgical patient care units, in the Region of Peel. These data will contribute to a presentation to hospital administration, examining the need for the implementation of an Interdisciplinary Pain Management Team. This team would serve to establish an educational component of a pain management program.

There is an abundance of literature about pain, its implications in the care of patients, and the complications of not relieving the pain. As well, Canadian hospital accreditation guidelines include documentation of pain assessment and pain management. Unfortunately, many hospitals have not yet developed a pain program or a team of health care professionals to serve as a resource to assist their staff in delivering more effective pain management. The scope of this team could serve to monitor new patients in pain, problem solve with patients for whom pain is not relieved, and serve as a central resource for health care professionals (e.g., nurses) for whom pain management is an integral part of their role. This team would increase the knowledge base of the health care team members caring for patients through inservices focusing on their areas of expertise as well as through the ongoing communication and intervention with patients in pain.

Through quality assurance programs, hospitals are responsible for maintaining standards of pain management by addressing their general pain issues. The proponents of
an interdisciplinary pain program suggest that nurses and other health care professionals currently are not knowledgeable about pain assessment and management. Thus, patients are not receiving optimum pain management and have considerable unrelieved pain. Administrators who do not recognize pain as a problem or a pain team as a necessity require data that health professionals, including nurses, hold outdated attitudes or lack knowledge about pain management. Nurses have 24 hour contact with patients and are critical to effective pain management. Inadequate knowledge and/or outdated attitudes will prevent nurses from effectively assessing and managing pain. Patients will continue to experience unwanted and unnecessary pain that can have negative consequences for recovery.

Definition of Terms

Attitudes

"An evaluative reaction to some object of thought and the assessment of a person's supporting belief" (Friedrich & Verive, 1991).

Epidural Analgesia

Medication inserted into the epidural space surrounding the spinal cord for the purpose of pain control.

Interdisciplinary

Between disciplines within the same health care setting, such as physiotherapy, occupational therapy and dietician.
Medical Unit

The patient care unit where patients with medical problems like cancer are cared for without surgical intervention.

Medicate

To treat with a pharmacological agent.

Mixed Attitudes

Attitudes which are a mixture of positive and negative but are not able to be depicted as solely negative or positive (Range for Attitude Score = -32 to +32; mixed attitude range was -16 to +16).

Nurse

A Registered Nurse (RN) who has completed a required course of study and standard set of examinations, possessing a current certificate of competence in Ontario. This definition excludes the Registered Practical Nurse (RPN) for the purposes of this study.

Opioid

An opioid is a drug that acts mainly on the receptors in the central nervous system to produce analgesia.

Pain

“An unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage. Pain is always subjective” (Merskey, & Bogduk, 1994, p. 210).
Pain Knowledge

Facts based on empirical data that are published and widely available and evidence based knowledge about pain.

PCA Pump (Patient Controlled Analgesia)

Self-medication of an opioid via the intravenous route for the purpose of pain control (Agency for Health Care Policy and Research, 1992).

PRN (Pro re nate)

The administration of a medication on an as needed basis.

Surgical Unit

The patient care unit where patients are cared for before and after they have surgery.

Outline of the Remainder of the Study

The review of the literature examines knowledge and attitudes, the pain component of formal nursing education, and nurses’ knowledge and attitudes to pain management. Chapter 3 describes the methodology proposed including subjects, instruments, and procedures for data collection. Chapter 4 reports the results and Chapter 5 provides analysis and discussion, recommendations, and conclusions.
CHAPTER TWO: REVIEW OF RELATED LITERATURE

Overview

A literature review was structured to examine and relate the importance of knowledge and attitudes, the recognition of pain as a problem, the importance of knowledge in pain assessment and management, and a review of nurses’ attitudes toward pain. The literature reviewed focused on the most recent data.

Over the past two decades, there has been an increasing focus on pain management in the clinical setting, advances in pain management options, and improved standards for the assessment of pain. However, the literature continues to identify a poor report card for the management of pain (AHCPR, 1992; Brunier, Carson, & Harrison, 1995; Charap, 1978; Donovan & Miaskowski, 1992; Henkelman, 1994; McCaffery & Ferrell, 1997a; Wallace, Reed, Pasero, & Olsson, 1995; Watt-Watson, 1987). Much of the literature attempts to study the reason for this inadequate management. The barriers to effective management are looked at from a number of different perspectives. Several studies have demonstrated that one of the major barriers is a lack of knowledge of pain assessment and management approaches, particularly related to opioids (Charap, 1978; Clarke, French, Bilodeau, Capasso, Edwards, & Empoliti, 1996; Elliott & Elliott, 1991; Ferrell, McCaffery, & Rhiner, 1992; Ferrell, McGuire, & Donovan, 1993; Graffam, 1990; Hamilton & Edgar, 1992; Marks & Sachar, 1973; McCaffery, 1996; McCaffery & Ferrell, 1997a; Tucker, 1990; Watt-Watson, 1987; Weis, Sriwatanakul, Alloza, Weintraub, & Lasagna, 1983).

**Importance of Knowledge & Attitudes to Behavior**

Edwards (1990) identified that both knowledge and attitudes about pain must be
accurate before a change in behavior is noted in practice. It was evident from the literature review that the information required for good pain management is accessible for use. McCaffery and Ferrell (1997a) studied the progress made in nursing in relation to pain management. Although they identified an improvement in the knowledge base of the nurse related to pain management, they also identified that gaps in knowledge of pain and pain management remain. They strongly recommended that after a review of specific needs assessments are completed, educational efforts need to be ongoing. They emphasized that although knowledge alone would not guarantee better pain management results for patients, it was an essential building block. Barriers may be related not only to a lack of knowledge, but to beliefs about patients' involvement in their care.

A change in knowledge can occur due to an educational inservice or program, but without a supporting change in attitude, the knowledge may not be carried into practice. For instance, nurses may be able to list the principles of opioid administration, but not understand their relevance to practice because of misbeliefs that patients overstate their pain, or that they will ask if they need analgesia. Camp-Sorrell and O'Sullivan (1991) maintain that the principal intention of education is the retention and translation of the information to improve clinical practice. Francke, Lemmens, Abu-Saad, and Grynendonck (1997) interviewed participants of a pain management program and discovered that those who had positive attitudes toward the program were successful in implementing their new practices into the clinical setting. Those who had negative attitudes toward the program before, during and after, had difficulty applying what was learned.

Daley (1997) examined the relationships of knowledge and context. She defined
knowledge as "the social construction of information that occurs through a process of meaningful learning and perspective transformation" (p. 104). Daley believed that this constructivist view of knowledge depicts the manner in which nurses develop knowledge in the clinical setting. Mezirow (1990) identified that learning is a process of linking together new information and experience. This supports the idea that learners may encounter difficulties or road blocks in implementing new knowledge, as their attitudes (built on past experience, cultural beliefs, and socialization) begin to conflict with the new information. Mezirow emphasized that the key to adult learning is the consolidation of one's knowledge, beliefs, and experiences and the examination of their relevance to the new context and situation.

Dillard (1993) discusses three properties of attitudes. He believes these properties allow individuals to use their attitudes in the world around them. The first property is "generality." Generality implies that an individual organizes similar objects into group sets, thus decreasing the number of variations in response to objects of like categories. "Flexible stability" is the second property identified. This property identifies the attitude as being constant over time and between situations, but flexible to adapt to alterations in its surroundings. The last property identified by Dillard is the ability for the attitude to be "accessible" to the individual. This is accomplished through retrieval from memory. Some attitudes are drawn upon quickly and others are slower to come to light. Friedrich and Verive (1991) found that the relationship between self reported attitudes and cognitive content is strongest in those attitudes which are of greatest importance to the individual.
Both Tourangeau and Rasinski (1988) and Friedrich and Verive (1991) suggest that there is a link between attitude and knowledge. Tourangeau and Rasinski (1988) believe that responding to an attitude statement or question involves a four step process. The initial step in this model involves the interpretation of the statement reflecting the attitude. In the next step, the respondent draws upon beliefs and feelings housed within the memory. From these feelings and beliefs the individual then forms a judgement of the attitude which finally results in an answer that the respondent can identify. This process of attitude retrieval closely reflects the properties of attitudes as described by Dillard (1993).

**Recognition of Pain as a Problem**

Pain is one of the most common symptoms for which people seek help from health professionals. It is estimated that 3.5 million people suffer from pain each day and general estimates indicate that more than 80% of people in pain are inadequately relieved of their pain (Ferrell et al., 1993). Pain theories have evolved from describing pain as an emotion or sensation to the current complex, multidimensional experience. From the gate control theory came the International Association for Study of Pain (IASP) definition that pain is an experience with sensory, affective and cognitive dimensions and not just a painful sensation. The emphasis is on the subjectivity of pain and therefore the need to obtain as much information as possible from the patients. The McGill Pain Questionnaire was developed to measure both the severity and quality of pain (Melzack, 1975).

Pain as a patient problem began to be prominent in the mid 1970's as evidenced by the establishment of the IASP. Organizations have been encouraging interdisciplinary
research and education about pain. The IASP was established to represent more than 70 countries, each of whom has a satellite society, such as the Canadian Pain Society. The IASP, as a non-governmental association, has established important links with the World Health Organization, particularly related to cancer pain (Ferrell et al., 1993).

Organizations have established guidelines for quality assurance related to pain assessment and management. Although nursing had been involved in pain research, it became a major player in the 1980's when the nursing research began to focus more on pain assessment (Benoliel, 1995). With this new focus came the implementation of a radical new idea into practice: the patient owned the pain. This new focus meant that the patient was the only person who could accurately rate the pain. By the 1990's, the research into pain increased rapidly. As the evidence of inadequate management of pain increased, the literature turned to the identification of barriers to effective pain management.

**Knowledge and Pain**

Elliott and Elliott (1991) carried out a study of physician knowledge of cancer pain management and noted that minimal data described how physicians acquired their knowledge about cancer pain management. Only 16% of their sample identified school as the source of this learning. Several investigators (Charap, 1978; Mortimer & Bartlett, 1997; Wallace et al., 1995) reported that physicians demonstrated deficiencies in their knowledge, misbeliefs about pain management, and undermedicated patients with pain. These misbeliefs can have a direct impact on the nurse who is required to implement the analgesic orders. Franke et al. (1997) conducted a study of nurses’ perception of factors
influencing the implementation of a pain program. They concluded that the physician’s role is important in the pursuit of effective pain management.

McCaffery and Ferrell (1997a) studied the progress in nursing pain management over the last 20 years. They stated, “nurses seem to assume that physicians know the analgesic requirements of patients in advance of their prescribing them, and nurses do not appear to embrace their vital role in the titration of opioid doses” (p. 185). This implies that nurses are continuing to administer medications in a traditional mode, waiting for the patient to ask for pain if the order is written with an “as needed” component. Nurses need to fulfill their responsibility to adhere to the principles of regular, individualized doses of medication for quality pain management. Findings from clinical studies document that patients experience considerable pain and receive inadequate analgesics (AHCPR, 1992). Only through identifying the deficiencies in the nurses’ knowledge will concerns be addressed and the goals of improving pain assessment and management be realized (Brunier, Carson, & Harrison, 1995; Charap, 1978; Dalton, 1989; Ferrell & McCaffery, 1992; Hamilton & Edgar, 1992; Watt-Watson, 1987).

Professional education has been identified as the foundation of knowledge related to pain management (Clarke et al., 1996; Ferrell et al., 1993), yet nursing faculties have only recently included pain content in their curriculum. Berde (1993) stated that, “pain is a multidimensional and complex phenomenon, requiring that effective assessment and management be based on current knowledge” (p.4). He follows that this concept, coupled with the nurse’s unique position to interact with the patient in pain, results in an
expectation that the nurse is knowledgeable and skilled in pain assessment and management. Three areas of knowledge identified as essential include self-report, opioids, and addiction (McCaffery & Ferrell, 1997). Graffam (1990) examined 305 baccalaureate nursing programs in the United States to identify whether these programs included current pain content, including the importance of pain management in the role of the nurse. Results showed that 81% have some formal classroom pain content ranging between 2-15 hours. Only 8% reported a separate course devoted to pain, of which 50% were elective courses. Pain assessment was identified as the most common topic (92%). Other content included drug therapy (84%), acute pain (81%), and chronic pain (87%).

Graffam (1990) suggested that for students to become knowledgeable, their teachers must first be knowledgeable. Ferrell, McGuire, and Donovan (1993) agreed strongly with this. In examining the pain knowledge and beliefs of nursing faculty members, they identified that students can be negatively influenced by educators' lack of information or inaccurate pain information. In a Canadian study of pain curricula in nursing faculties, Watt-Watson (1987) identified a major gap related to pharmacological principles of pain management. She also emphasized the need to increase the curriculum content related to assessment and analgesic administration. After examining 14 textbooks used in nursing courses (eight pharmacology texts and six medical surgical texts), Ferrell et al., (1992) found that only 1.6% of the pages were focused on pain content. They noted that terms such as addiction, dependence, and tolerance were thoroughly discussed in chapters related to substance abuse and only minimally discussed in the sections on pain. They also did not find one medical surgical textbook that gave an accurate definition for
addiction. This finding may contribute to nurses inadequate understanding of addiction. The problem has been identified as one of the barriers to effective pain management.

Several investigators have found that nurses lacked knowledge and understanding of addiction (Brunier et al., 1995; Ferrell et al., 1992; Hamilton & Edgar, 1992; Watt-Watson, 1987). In fact, these studies and many more corroborate the findings that nurses lack pharmacological knowledge about opioids (Dalton, Blau, Carlson, Mann, Bernard, Toomey, Pierce, & Germino, 1996; Ferrell & McCaffery, 1997a; McCaffery & Ferrell, 1997; McCaffery, Ferrell, O’Neil-Page, Lester & Ferrell, 1990; Ryan, Vortherms, & Ward, 1994; Sheidler, McGuire, Grossman, & Gilbert, 1992; Wallace et al., 1995; Watt-Watson, 1987). This is disturbing as it is the nurse who administers the opioids based on an assessment and choice of analgesic. Many experts on pain underline the importance of using research journals along with texts to keep up with current advances and implications for practice (Clarke et al., 1996; Ferrell, Grant, Ritchey, Ropchan, & Rivera, 1993; Ferrell et al., 1992).

Clarke et al. (1996), Myers, (1985), and O’Brien, Dalton, Konsler, & Carlson, (1996) identified that although nurses working in an oncology environment scored higher on pain knowledge surveys, they still had some knowledge deficits. More recently, nurses have been asked to identify barriers to pain relief (Clarke et al., 1996). Major barriers identified included: a lack of knowledge about pain management strategies, fears of addiction, patients’ reluctance to report pain, patients’ reluctance to take opioids, society’s emphasis on drug abuse and inadequate pain assessments. Ferrell, McGuire and Donovan (1992) identified these barriers as well, but added inadequate knowledge of
pharmacological and non pharmacological management. Clarke et al. (1996) and Scott (1992) found that a lack of communication regarding pain was another important barrier. Fears of addiction can negatively influence pain management, particularly related to opioid administration. These fears have been clearly documented in studies dating from Charap (1978). Comparing these studies with more recent ones like that of McCaffery and Ferrell (1997a) is interesting. They demonstrate that although improvements in knowledge have been reached, deficits continue to exist.

Inadequate pain assessment impedes the management of the patient’s pain. The Agency for Health Care Policy and Research (AHCPR, 1992) states “the single most reliable indicator of the existence and intensity of acute pain and any resultant affective discomfort or distress is the patient’s self-report.” (p.11). In order for the impact of the patient’s report of pain to be realized, the nurse must understand the importance of this component of pain assessment. McCaffery and Ferrell (1997a) identified that less than half of the nurses they surveyed demonstrated an understanding that self-report of pain is the most reliable indicator of pain.

Attitudes about Pain

An historical look at some attitudes about pain helps to clarify current thinking that can influence clinical practice. Some early perspectives of pain identified by Benoliel (1995) depicted pain as a punishment from God, as an emotion, originating in the heart, and as a warning of something wrong. These beliefs continue to influence the attitudes of many health care professionals in the clinical setting today. Donovan (1989) suggested that pain can be viewed as a punishment, a warning that something is wrong,
an emotion, a physical impulse that is controlled, a scientific principle, and a physical as well as an emotional stimulus. Davis (1997) stated that these views can be held not only by patients but also by health care professionals caring for these patients. He demonstrated that the attitudes of nurses did influence the assessment and management of a patient’s pain. In depicting the importance of the role of the nurse, Berde (1993) stated “in pain management, how the nurse does it may be as important as what the nurse does” (p.4).

Many studies that examine attitudes of nurses in pain assessment and management also include knowledge levels. O’Brien et al. (1996), in their examination of attitudes of physicians and nurses, found that a liberal attitude was reported more often by nurses who cared for oncology patients. These nurses were more likely to have an adequate knowledge base and O’Brien et al. recommended that a greater emphasis on pain management be required. Elliott and Elliott (1992) reported, in a study of physician attitudes about morphine use, that their beliefs and attitudes, combined with their knowledge did affect pain management behaviors. Similar to knowledge deficits, the attitudes of the physician did influence their analgesic orders. Inadequate analgesic orders can prevent the implementation of principles of pain management and limit the nurses’ options to control pain. Weis et al. (1983) studied the attitudes of house staff, patients and nurses toward pain management. Their questions elicited responses regarding attitudes toward addiction, the use of opioids in combination with other analgesics, and complete pain relief as a realistic goal for postoperative patients. Their results supported by other findings (Meyers, 1985; Scott, 1992) that nurses and
physicians believed that complete pain relief was not a realistic goal, overestimated fears of addiction, and misunderstood the role of combining opioids and other drugs in relation to sedation. Although nurses are improving their understanding of the subjectivity of pain, (Hamilton & Edgar, 1992; McCaffery & Ferrell, 1997a) researchers continue to identify that some nurses do not believe the patient’s self report of pain (Faries, Mills, Goldsmith, Phillips & Orr, 1991; Scott, 1992; Zalon, 1993). Although Donovan and Miaskowski (1992) reported that nurses' perceptions of pain are influenced by their own attitudes about suffering, Clarke et al. (1996) found no correlation between nurses’ pain experiences and their pain knowledge or attitude. What may be of influence, however, is the impact of the educator on the attitudes of the nurses. Ferrell et al. (1993) suggested that the influence of nursing educators' attitudes and beliefs related to pain may determine students’ general pain knowledge and attitudes.

**Literature Summary**

In summary, the review of the literature has indicated that inadequate pain management continues to be experienced by many patients. Many studies have successfully measured pain knowledge in both physicians and nurses and how this impacts on pain management. Notably fewer studies have examined attitudes and their effect on pain management outcomes. An underestimation of pain, a lack of reliance on the patient’s self report of pain, a lack of knowledge and inappropriate attitudes are documented to contribute to this finding of ineffective pain management.

Through the studies reviewed, the following areas have been identified as deficits
in nurses' pain knowledge and related misbeliefs (a) pharmacology, (b) the incidence of addiction, (c) lack of reliance/belief in self reports of pain, (d) side effects of analgesic medications, (e) assessment of pain, and (f) non pharmacological interventions for pain relief. The knowledge base and attitudes of the physicians were also briefly reviewed to acknowledge their role in pain management. The literature identifies possible contributors to the lack of nurses' knowledge of pain. Included in this is the lack of formal educational preparation for nurses, as well as inaccurate pain information in nursing textbooks (Ferrell et al., 1992; Ferrell et al., 1993; Graffam, 1990; Watt-Watson, 1987). Recent literature suggests that progress has been made in nurses' knowledge of pain assessment and management, and recommends that educational efforts continue (McCaffery & Ferrell, 1997a).
CHAPTER THREE: METHODOLOGY AND PROCEDURES

This chapter describes the procedure, sample, and instrumentation used in this study. Examining the knowledge and attitudes of nurses on acute, medical and surgical patient care units in three different hospitals, this study was a descriptive study.

Procedure

Following ethical approval from Brock University and “Hospitals A, B, and C,” a meeting was arranged with the managers of the units to explain the purpose and components of the study. All but one of the managers were Registered Nurses and she was a Physiotherapist. Two questionnaires and a vignette made up the three instruments used in this study. These included Nurses Knowledge of Pain Issues Survey, Attitude to Pain Control Scale and Andrew and Robert Vignette. The instruments are included in Appendix A. The process of distributing the questionnaire was explained as well as the dates for the project time lines. Appropriate times for inservices and a location for the nurses to return completed questionnaires were established. The managers agreed that the designated drop box would be used strictly for the questionnaires with access limited to only the researcher.

The managers were requested to participate in an interview using the Institutional Assessment interview tool in order to obtain data related to the institutional structures that were in place to support pain management. Some managers deferred this interview to the educator on the unit since she was more knowledgeable in this area. The manager/educator was given the interview questions ahead of time to facilitate the answers that needed to be obtained elsewhere within the institution.
The questionnaires were placed in a clearly labeled box on the medical and surgical units on each of the three hospitals. A total of 288 questionnaires were made available to be completed by all potential staff. Inservices were held on each unit at times predetermined by the educator or manager. The purpose of the 15 minute inservice was to introduce the study, describe the relevance to nursing, detail the components of participating and distribute the packages to the attendees. It was stressed that large numbers of participants were needed to make the study successful. The accessibility of the researcher for questions, support, or comments was also highlighted. A minimum of six inservices were scheduled on each unit during a two to three-week period. These scheduled inservices were posted on the units prior to the inservices or sent as a letter in the personal electronic mail system. A representative at each hospital determined the most appropriate mode of communication. The educators and managers also mentioned the study at staff meetings and educational sessions. The inservices were arranged on weekends, evenings, and weekdays in order to reach as many people as possible. Each unit was contacted by the researcher every two to three days, in order to answer any questions, promote the study, and collect completed packages.

There were two ways in which nurses could obtain the package containing the questionnaires. They could take one themselves, as they were always available on the unit, or they could acquire one at the inservice that they were attending. At the commencement of the study, a letter was placed in the computer mail to all nurses, identifying the process and purpose of the study (see Appendix B). This letter was designed to contact those nurses who could not be reached at the inservices. The letter
and inservices stressed that there was one package for each Registered Nurse (RN), so everyone could return a survey whether or not they chose to participate. It was explained that this would help identify when all the packages had been received and assist in maintaining confidentiality. A written consent form was also included in the package given to the nurses (see Appendix C). The nurses were instructed to sign this form and return it with the package if willing to participate.

The package also contained a letter that outlined the purpose of the study, the questionnaires, instructions for completing the questionnaires, and the methods of returning the package. The letter outlined their rights, safeguards to protect confidentiality, the risks and benefits of participation, and assurance that participation would not influence their employment. Also indicated was the manner in which the results would be shared with the participants. A follow-up letter was distributed via the computer to all nurses two weeks after initiation on their unit, to encourage higher participation.

Of the 288 questionnaires placed on the units, 179 were taken. Of the 179 taken, 120 were returned. Of the two questionnaires were partially completed and five were returned blank. In total, 113 questionnaires were useable (63%). Although the availability of the researcher was maintained and the study packages were left on the units for one month, the impact of summer vacation likely had an effect of decreasing the number of potential participants. Before beginning the study, some units identified a "low morale" problem that they felt would affect participation.
Sample

The subjects consisted of a convenience sample of 113 nurses in three community hospitals within a common region. Nurses were invited to participate from the acute, inpatient general medical and surgical units of these hospitals, to ensure the involvement of nurses who care for patients experiencing various types of pain on a daily basis. Neurosurgical units were excluded from this study as they existed at only one hospital.

Of the completed packages, 78 (69%) were from the surgical setting and 35 (31%) were from the medical units. Forty respondents (43%) were from Hospital A, 27 (24%) from Hospital B and 38 (34%) from Hospital C. Of the nurses who participated from Hospital A, 39 (35%) were from surgery and nine (8%) were from medicine units. Hospital B had 20 (18%) represented from the surgical unit and seven (6%) from the medical unit. Hospital C had equal groups of 19 participants (17%) from both medicine and surgery.

Descriptive statistics collected were used to examine gender, age, education level, years of nursing experience, years working on the unit, and attendance at continuing pain education sessions (see Table 1). These data were collected using a number of demographic questions (see Appendix A).

In the surgical group, most participants were female (n = 77) and the mean age of respondents was 40.5 years. The majority of respondents had obtained an RN diploma (n = 69, 89%). Three Registered Nurses (RN) (4%) had an RN diploma as well as an additional form of education. Five (6%) had a B.Sc.N nursing preparation. One person had a B.Sc.N as well as other educational courses. The majority (n = 59, 76%) had not
Table 1

**Demographics and Existing Differences**

Percentage of nurses in each hospital

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Surgery (n=78 or 69%)</th>
<th>Medicine (n=35 or 31%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>34% (n=39)</td>
<td>8% (n=9)</td>
</tr>
<tr>
<td>B</td>
<td>18% (n=20)</td>
<td>6% (n=7)</td>
</tr>
<tr>
<td>C</td>
<td>17% (n=19)</td>
<td>17% (n=19)</td>
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</table>

**Type of education**

<table>
<thead>
<tr>
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<th>Medicine (n=35)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>R.N. Diploma</td>
<td>69</td>
<td>88%</td>
</tr>
<tr>
<td>B.Sc.N. Degree</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>B.Sc.N. &amp; other education</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>R.N. &amp; other education</td>
<td>3</td>
<td>4%</td>
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</tbody>
</table>

**Gender**

<table>
<thead>
<tr>
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<th>Medicine (n=35)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
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</tr>
<tr>
<td>Female</td>
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<td>99%</td>
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<td>Male</td>
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*table continues*
Attendance at pain education in last 2 years

<table>
<thead>
<tr>
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<th>Medicine n=(35)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>None</td>
<td>59</td>
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<tr>
<td>1-2 sessions</td>
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<td>21%</td>
</tr>
<tr>
<td>&gt;3 sessions</td>
<td>3</td>
<td>4%</td>
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Age

<table>
<thead>
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<th>Median</th>
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<td>22</td>
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</table>

Note. Mann-Whitney U test: \( p = 0.01 \).

Years of nursing

<table>
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<th>Min</th>
<th>Median</th>
<th>Max</th>
</tr>
</thead>
<tbody>
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<td>Surgery (n=78)</td>
<td>17.53</td>
<td>10.11</td>
<td>0.20</td>
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<td>39</td>
</tr>
<tr>
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<td>10.76</td>
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<td>1.17</td>
<td>10</td>
<td>28</td>
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</table>

Note. Mann-Whitney U test: \( p = 0.001 \).

Years working on unit

<table>
<thead>
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<th>Years on unit</th>
<th>Mean</th>
<th>STD</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery (n=76)</td>
<td>8.70</td>
<td>6.99</td>
<td>0.01</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td>Medicine (n=35)</td>
<td>5.04</td>
<td>4.84</td>
<td>0.17</td>
<td>2.5</td>
<td>15</td>
</tr>
</tbody>
</table>

Note. Mann-U Whitney test: \( p = 0.01 \)
attended any pain related educational sessions on pain in the last two years. Sixteen (21%) had attended one or two sessions and only three nurses in the surgical group (4%) had attended three or more sessions.

The majority of the medical group (n = 33, 94%) were female and the mean age was 35.3 years. The majority of respondents in the medical group (n = 25 or 71%) also had an RN diploma as their nursing preparation. One nurse in this group had an RN diploma as well as other education. Nine nurses had a B.Sc.N making up 25% of the medical group. The majority had not attended educational sessions on pain in the last two years (n= 20, 57%). Fourteen participants (40%) had attended one to two sessions and only one nurse (3%) documented attendance at three or more sessions.

Instrumentation

The majority of questions from the three instruments used collected quantitative data with an inclusion of two qualitative questions in one of the instruments. Demographic data were collected in a series of questions at the top of an instrument, while institutional data were collected in an interview session.

Nurses Knowledge of Pain Issues

The first instrument used was the Nurses Knowledge of Pain Issues Survey developed by Watt-Watson in 1987 (see Appendix D). The purpose of this tool was to measure nurses' knowledge and attitudes about pain, assessment, and management with an emphasis on analgesics. This survey had been trialed and the content of the items had been developed from experience and the literature. Content validity had been established
by clinical experts. The instrument is composed of 19 questions including a mixture of true/false questions, multiple choice, and fill in the blanks. Two open-ended questions are included, inviting the respondents to discuss their most difficult problems in caring for patients in pain and to identify the tools they use to assess pain in their clinical setting. The survey is scored by adding the correct responses to obtain a total out of 21.

The correct answers for these questions were based on the literature that correlated with the answers arrived at by the researcher. The correct answers for the question requesting the duration of action for four selected opioids were based on the duration of actions as documented by the Agency for Health Care Policy and Research (1992). Likewise, the answer for the percentage of hospitalized patients who become addicted to analgesics while in the hospital was only accepted as <0.1%, as this is the correct percentage documented throughout the literature (Brunier et al., 1995; Clarke et al., 1996; McCaffery et al., 1990; Watt-Watson, 1987).

Attitude to Pain Control Scale

The second questionnaire, developed by Peter Davis, was used to primarily assess attitudes of nurses toward pain (see Appendix E). This established questionnaire asks nurses to respond to 16 statements about pain, using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." The statements were developed to express the generally held views on pain management (Davis, 1988). The instrument is tabulated by administering a score based on how the participant’s response correlates with the generally held view on the individual statement. Responses that "agreed" or "strongly agreed" with the generally held view were assigned a positive score of one and two,
respectively. The responses that “disagreed” or “strongly disagreed” with the generally held view were assigned a negative score of one and two, respectively. The unsure column was given a score of zero. These scores were totaled and a score of -32 to 32 was obtained. The scores were interpreted to suggest a negative attitude toward pain if the total score was negative 16 or less. A score of -16 to 16 indicated mixed attitudes toward pain and pain management. Scores above 16 indicated the nurse had a positive attitude toward pain and agreed with the majority of generally held views on pain. The average total score of the 113 RNs was 12.45, indicating mixed attitudes in the larger group. The range was between -4 and 26.

This tool has been published in the literature, including its reliability and validity. Thorn used this tool in 1997 and found it to have internal face validity as it represented nurses’ attitudes. The instrument was piloted before use and the test-retest reliability coefficient was found to be 0.94. Both instruments were easy to complete and moderate in length.

Andrew and Robert

A vignette developed by McCaffery and Ferrell in 1991, and revised in 1997 to utilize updated terminology, was used to assess the nurse’s response to two patients in pain (see Appendix F). The vignette begins with a brief look at a case presentation and requests the nurse to make decisions about pain and medication for each patient using two multiple choice questions.

This questionnaire has been used often in the clinical setting and has had its validity established by content experts in pain management. These experts have affirmed
its content validity and the extensive testing and use in the clinical setting has established its ability to measure the concepts for which it was designed. Due to the brevity of the vignettes, test-retest is impossible to calculate. The questions in the vignettes have been based on prior research and pain instruments that have established construct validity and test-retest reliability (Ferrell & McCaffery, 1999).

**Institutional Assessment**

Lastly, an institutional assessment was completed through an interview process with the manager or designated educator in each hospital (see Appendix G). The purpose of the interview was to identify the tools and supports used as pain resources to assist the nurses. This interview tool was devised by Ferrell, Whedon, and Rollins in 1995 and modified with the permission of the originators to utilize the components that would be pertinent to this study. The original questions were divided into four sections examining the supports that exist in documentation, educational efforts, and institutional policies and structures. Ferrell et al. (1995) believed that these four areas would examine documentation forms supporting the standardization of pain management, quality improvement indicators, and educational initiatives promoted by the institution to improve pain management. For the purpose of this study, these were condensed and revised into three areas of documentation, educational efforts, and quality indicators. The questions that did not pertain to the study were omitted and one question was added to enhance the information obtained. These data are presented as qualitative data, giving an overview of the supports available to the nurses at each hospital.
Restatement of Work Area and Summary

In summary, this research study examined the knowledge and attitudes of 113 Registered Nurses in medical and surgical settings at three community hospitals. Three instruments, and one interview session were used to obtain data about the nurses in the medical and surgical settings and about their respective hospital resources for pain assessment and management. These data were examined for differences between the medical and surgical groups as a whole and for differences between medical and surgical nurses within their respective hospitals.

Restatement of the Problem

This descriptive, correlational study examines the knowledge level and attitudes of nurses working in the medical and surgical patient care settings in three community hospitals. The main research questions to be addressed include:

1. What do nurses working in medical and surgical units, know and believe about pain assessment and management?

2. Is there a difference in pain knowledge and attitudes between nurses working in medical versus surgical units?

3. What organizational resources are available to assist nurses with the assessment and management of pain?

4. Is there a relationship between the availability of hospital resources and nurses' knowledge and attitudes?
CHAPTER FOUR: FINDINGS

An Overview

Nonparametric tests were used throughout the analysis due to the fact that a normal distribution could not be assumed in the medical and surgical nursing groups. Data were analyzed using Mann-Whitney U tests, Fisher Exact tests, and General Linear Models. These tests were used to examine the knowledge and attitude scores of the RNs in medical and surgical groups and to identify whether a difference existed between these groups and within these groups in each of the different hospitals. The Fisher Exact test was used in the analysis of the medical and surgical nurses within each hospital because these groups had very small numbers. Significance was determined at the 5% level ($p < 0.05$). Data will be presented in the form of statements and tables. The demographic data collected were analyzed using measures of central tendencies (mean, median, and mode) within each of the medical and surgical nursing groups.

The qualitative data, resulting from the open-ended questions, was analyzed by identifying common themes that arose from an organization of ideas into like groupings. These groupings were formulated through reading and interpreting the answers to these two questions. That data was given to another individual and 97% agreement was obtained. This qualitative data analysis was presented in a narrative style depicting interpretations and analysis.

Findings

A General Linear Model was used to determine the effects of the demographic variables on knowledge and attitude scores for the nurses. There were no significant
findings with respect to age, length of employment on the unit, years in nursing, gender, or level of basic nursing education. The number of educational sessions did have a significant effect on the attitude score \((F = 3.65, p = 0.0293)\). The group that had not attended any inservices or educational sessions related to pain had a mean attitude score of 12.5 representing mixed attitudes toward pain. Those who had attended one to two inservices on pain also had a score representing mixed attitudes \((\text{mean} = 13.1)\). The group that had attended three or more educational sessions had a mean of 19.25 representing positive attitudes toward pain.

**Knowledge of Pain Issues Survey**

The data collected from the knowledge survey are presented in three separate sections. These three sections will include the overall scores from the survey, the data from questionnaires which address pain assessment, and those which discuss opioids.

**Overall Scores**

**Medical versus surgical units.**

The median score (possible range 0 - 21) for the medical group of nurses was 12 or 57% with a range of 7-17 (33 - 81%). The surgical nurses scored a median of 12 (57%) with scores ranging from five to 17 (24% - 81%). Three percent of the medical nurses and 4% of the surgical nurses had a score of seven or less (33% or less), while 6% of the medical nurses and 8% of the surgical nurses had scores of 16 (76%) or more.

Using a Mann-Whitney U test there was no significant difference \((p = 0.89)\) between the knowledge scores in the medical and surgical nursing groups. Table 2 depicts the central tendencies of the overall scores and the scores from the medical and surgical groups.
within each hospital.

**Hospital scores.**

The median score in Hospital A for the medical nurses (n = 9) was 12 (57%) with range of 9 - 14. The surgical nurses (n = 39) also had a median score of 12 with a range of 7 - 17. In Hospital B, the medical nurses (n = 7) had a median score of 12 with a range of 8 - 14. The surgical nurses (n = 20) had a median score of 10 and a range of 8 - 16. Lastly, the medical nurses (n = 19) in Hospital C had a median score of 12 with a range of 7 - 17. The surgical group (n = 19) had a lower median of 10 with a range of 5 - 16. No significant differences were identified in the comparison of the medical and surgical groups within any of the hospitals using a Mann-Whitney U test.

**Knowledge of Pain Assessment**

In order to collect data reflecting the knowledge base of the assessment component of pain questions 1 - 3, 5 - 8 were analyzed together to arrive at a potential score of seven. The median scores in both groups were similar with a score of five for medicine and four for surgery. The medicine scores ranged from 3 - 6 and the surgical scores from 2 - 7. Using the Mann-Whitney U test, there was no significant difference between these scores ($p = 0.46$). The median scores for the medical and surgical groups within the hospitals also had ranged from 4 - 5 with $p$ values which indicated no significant difference as shown in Table 3.

Both groups strongly agreed (94% medical, 96% surgical) that the patient’s assessment of pain is more valid than the health care professional’s. However, 77% of medical nurses and 78% of surgical nurses felt that severity and duration of pain have a
direct relationship with the pain stimulus. As more than 89% of medical and surgical nurses believe patients should experience minimal to no pain, they also strongly believed patients should not be encouraged to develop a high tolerance for pain (89% medicine, 72% surgical). The majority of nurses in both groups identified psychogenic pain as real and indicated it was not malingering (80% medical, 76% surgical). The groups were divided in their support for the concept that malingers are rare patients who consciously produce their symptoms (54% medical, 50% surgical).

The open-ended question in this survey which focuses on pain assessment in the clinical setting asks the nurse, “How are you assessing pain in your clinical setting?” This question revealed some very common themes in both medical and surgical nurses. Ninety-one percent of the nurses on the medical units indicated they used some form of verbal communication with the patient to assess pain when answering this question. Similarly, 86% of nurses in the surgical settings acknowledged using verbal communication as well to elicit subjective data from the patient. They did not clearly indicate the details of the verbal communication.

Sixty-nine percent of nurses on the medicine units and 67% of nurses in the surgical setting identified the use of a pain scale as another component of their assessment. The scales used ranged from a scale of 0 - 5, 1 - 5, 0 - 10, 1 - 10 with zero or one representing the absence or little pain and the five or the 10 representing the greatest pain you could imagine.

Because of the open-ended nature of the question, most answers indicated the
Table 2

Nurses Knowledge of Pain Issues Survey

<table>
<thead>
<tr>
<th>Total score for knowledge: overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Surgery (n = 78)</td>
</tr>
<tr>
<td>Medicine (n = 35)</td>
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<tr>
<td><strong>Hospital</strong></td>
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<tr>
<td>A-Surgery (n = 39)</td>
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<td>A-Medicine (n = 9)</td>
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<td>B-Surgery (n = 20)</td>
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<tr>
<td>B-Medicine (n = 7)</td>
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<td>C-Surgery (n = 19)</td>
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<tr>
<td>C-Medicine (n = 19)</td>
</tr>
</tbody>
</table>

Note. Maximum Score = 21

Mann-Whitney U Test used. No significant difference in knowledge tests shown between the medicine and surgical nursing groups.
Table 3

**Nurses Knowledge of Pain Issues Survey**

Total score for pain assessment knowledge component

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>STD</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
<th>P value</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Surgery (n = 78)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>5</td>
<td>6</td>
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</table>

**Note.** Includes Questions 1 - 3, 7 & 8, 20 & 21 in the Knowledge Survey. Total Possible Score = 7. Mann-Whitney U Test used. There were no significant differences noted.
use of more than one method for acquiring data about the patient’s pain. However, 17% of the medical nurses and 31% of the surgical nurses indicted the pain scale as their only answer to this question.

Other indicators of assessing pain for the nurses working in the medicine units included the patient’s ability to partake in “ADL” (activities of daily living) as well as changes in vital signs. Medical nurses indicated the use of these two factors 11% of the time. Surgical nurses however, indicated that they included the patient’s ability to partake in the ADL and activity level 8% of the time. They looked for changes in vital signs to indicate the patient’s pain 19% of the time. Noting that 6% of the surgical nurses reported answers which did not include any patient involvement in pain assessment is important. In these cases all indicators were objective data obtained by the nurse. The lack of patient involvement in assessment of the patient’s pain was cited in 3% of reports from the nurses working on the medical units studied.

Knowledge of Opioids

The median scores for the portion of the knowledge test which focused on opioid knowledge are listed in Table 4. Questions three to six in the multiple choice, four, seven, and eight of the true or false, and both of the fill in the blank questions were included in this analysis. These questions had a potential correct score of 14. The median for both medical and surgical groups was seven. The ranges of scores were 4 - 11 and 1 - 10 respectively. The difference in the score means between these groups was not significant ($p = 0.79$). No significant differences were evident in the mean for the medial and surgical groups within the individual hospitals.
Table 4

**Nurses Knowledge of Pain Issues Survey**

Total score for opioid knowledge component

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>STD</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
<th>P value</th>
</tr>
</thead>
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<td>2.04</td>
<td>1</td>
<td>7</td>
<td>11</td>
<td>0.88</td>
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<tr>
<td>Medicine (n = 35)</td>
<td>7.11</td>
<td>1.94</td>
<td>4</td>
<td>7</td>
<td>12</td>
<td></td>
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<tr>
<td>Hospital A Surgery (n = 39)</td>
<td>7.69</td>
<td>1.94</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>0.10</td>
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<td>Hospital A Medicine (n = 9)</td>
<td>6.56</td>
<td>1.59</td>
<td>4</td>
<td>6</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Hospital B Surgery (n = 20)</td>
<td>6.40</td>
<td>1.54</td>
<td>4</td>
<td>6.5</td>
<td>9</td>
<td>0.61</td>
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<td>Hospital B Medicine (n = 7)</td>
<td>6.86</td>
<td>2.04</td>
<td>4</td>
<td>7</td>
<td>10</td>
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</tr>
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<td>Hospital C Surgery (n = 19)</td>
<td>6.58</td>
<td>2.43</td>
<td>1</td>
<td>7</td>
<td>11</td>
<td>0.25</td>
</tr>
<tr>
<td>Hospital C Medicine (n = 19)</td>
<td>7.47</td>
<td>2.06</td>
<td>4</td>
<td>7</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Included in this portion of the data collection are questions # 4 - 6, 9 - 19 in the Knowledge Survey. Total possible score = 14.

There were no significant differences shown between any of the medical and surgical groups. Mann-Whitney U tests were used.
The duration of action for the opioids listed in the knowledge survey were documented incorrectly by the majority of nurses as depicted in Table 5. Also evident from the number of respondents in the table is the number of nurses who chose not to answer the individual questions on duration of action. The duration of morphine was documented correctly by 31% of medical nurses (n = 10) and 49% of surgical nurses (n = 34). The duration of the effectiveness of Demerol was documented correctly by only 16% of medical nurses (n = 5) and by 36% of surgical nurses (n = 26). When questioned about the duration of the effectiveness of codeine, 66% of the medical nurses (n = 21) and 73% of the surgical nurses (n = 52) documented the correct answer. Dilaudid was answered correctly by 39% of the medical nurses (n = 11.7) and 44% of the surgical nurses (n=30).

Many of the multiple-choice questions which related to opioid knowledge required more than one of the choices to be correct. Question number three which asked for the drug with the most side effects was answered correctly by only one person (3%) in the medical nursing group, with the majority of respondents (60%) identified morphine as the single answer. The surgical group was similar. While almost 13% correctly answered this question, 46% identified morphine as the only correct answer. The objective signs of a patient experiencing chronic pain required three of the four multiple choice responses to be considered correct. Twenty percent of the medical nurses and 32% of the surgical nurses indicated all three choices. The most common answers for both groups included all four choices. More than 90% of the medical nurses (94%) and 89% of the surgical nurses identified that a patient should usually expect to
Table 5

Knowledge of Opioids

Percentage of correct responses for duration of action

<table>
<thead>
<tr>
<th>Type of opioid</th>
<th>Surgery nurses</th>
<th>Medical nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>51% (n = 70)</td>
<td>69% (n = 32)</td>
</tr>
<tr>
<td>Meperidine</td>
<td>36% (n = 72)</td>
<td>16% (n = 32)</td>
</tr>
<tr>
<td>Codeine</td>
<td>73% (n = 71)</td>
<td>66% (n = 32)</td>
</tr>
<tr>
<td>Dilaudid</td>
<td>44% (n = 68)</td>
<td>39% (n = 31)</td>
</tr>
</tbody>
</table>

Note. Percentages are based on those who answered these individual questions as indicated by the number of respondents (n).
tolerate minimal to no pain while in the hospital.

The remaining multiple choice questions were correct with only one answer. Ninety percent of medical and surgical nurses correctly indicated morphine as the drug of choice for terminally ill patients. The medical nurses correctly identified the purpose of PRN in giving medications (71%) more often than did the surgical nursing group (31%). Almost three quarters (74%) of the medical nurses correctly answered that placebos can be administered to patients only in controlled research situations where they are aware that they are receiving them. The surgical nurses were correct 62% of the time. This is consistent with the true and false questions about placebos, in which more than 66 - 95% of the nurses in both groups were correct.

Fifteen people (12 surgery and three medicine) did not answer the question which requested a percentage of patients who become addicted while in the hospital. While 34% of the nurses in the medical group documented that greater than 10% of patients become addicted to opioids while in the hospital, only 24% of the surgical nursing group represented this percentage. Table 6 depicts some of the answers the nurses gave regarding the administration of opioids.

More than half the medical (63%) and surgical nurses (53%) answered incorrectly in the true and false question that identified oral morphine as effective as parenteral morphine. While 60% of the medical nurses correctly identified that there is no advantage to heroin over the current opioids, only 39% of the surgical nurses correctly answered this question.

The second open-ended question in this survey asked the nurses, “What is the
Table 6

**Knowledge of Administration of Opioids**

<table>
<thead>
<tr>
<th>Responses by nurses</th>
<th>Surgery nurses (n= 78)</th>
<th>Medical nurses (n= 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addiction is &gt; 10%</td>
<td>24% (n = 66)</td>
<td>34% (n = 33)</td>
</tr>
<tr>
<td>PRN medications are given for breakthrough pain</td>
<td>31%</td>
<td>71%</td>
</tr>
<tr>
<td>Placebos only used in research</td>
<td>62%</td>
<td>74%</td>
</tr>
<tr>
<td>Morphine is the drug with most side effects at equianalgesic doses</td>
<td>46%</td>
<td>60%</td>
</tr>
<tr>
<td>Morphine is the drug of choice for terminally ill patients</td>
<td>90%</td>
<td>97%</td>
</tr>
</tbody>
</table>
most difficult problem(s) for you in nursing a patient in pain, either acute or chronic?”

Table 7 represents the percentages of nurses in each group who identified similar problems.

**Surgical nurses.**

Twenty-eight percent of nurses working in the surgical setting identified the most common problem was to provide adequate pain relief. Statements like “not being able to relieve their pain,” “trying to get them comfortable e.g., analgesics and positioning,” and “when the analgesic is not effective despite the dosage,” depict the difficulties that nurses encounter in trying to provide patient comfort. Eighteen percent of the nurses in the surgical group stated that a difficulty arose when doctors prescribed inadequate analgesics. The nurses’ perception of this difficulty included the doctors being “unwilling or uncomfortable with ordering analgesic beyond the usual dose” as well as simply “getting enough pain control ordered by the doctor.” Twelve percent of the nurses in the surgical setting stated that assessing pain presented a major problem for pain management. The following highlights some statements the nurses wrote about assessing pain relief: “assessing the patient’s nonverbal compared to what the patient is telling you,” “judging and assessing whether they are receiving enough pain relief” and “assessing level of pain and effectiveness of medication.” The need for patient education represented 10% of the next most common answers.

Surgical nurses focus on post operative routines and prevention of post operative complications. Therefore, the inability to perform post operative ADL (activities of daily living) was identified as a problem by 9% of the nurses in this area. One surgical nurse
Table 7

Problems in Nursing a Patient in Pain

<table>
<thead>
<tr>
<th>Surgical nurses</th>
<th>Problems identified</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor pain control</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Assessing pain</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Inability to perform ADL</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Busy unit</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Nurses knowledge</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Addiction</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Language barrier</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Use of adjuvant therapies</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Pain vs. Sedation</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Uncooperative, demanding patients</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical nurses</th>
<th>Problems identified</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor pain control</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Pain vs. sedation</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Assessing pain</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Nurses knowledge</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Busy unit</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Addiction</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Language barrier</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>
stated, “a patient in pain is unable to perform ADL’s, transfers, ambulation, physio
needed to prevent postoperative complications (e.g., DVT), promote independence
toward discharge/rehabilitation date.”

The next five themes were each represented by 5% of the surgical nurses. These
included (a) nurses lack of knowledge, (b) language barriers, (c) the busy pace of the
unit, (d) the use of alternative therapies, and (e) the concern about addiction. The nurses
identified a lack of knowledge about opioids and their administration. One nurse
depicted the effect of a busy unit on pain management as, “when you get busy, the
patient gets left.” The use of adjuvant therapies was stated such that there is “little
availability of adjuvant therapies (e.g., biofeedback, relaxation, and massage).” The
concern about addiction focused on determining if patients are addicted to medication,
what to do if they abuse drugs, and the patient who “rings the bell exactly the time that
they need something for it.”

Finding a balance between pain relief and sedation of patients and nursing the
uncooperative, demanding patient in pain was a difficulty stated by 4% of the surgical
nurses. One of the nurses identified establishing the right level of pain relief and
minimizing sedation as a problem. She described this difficulty as, “trying to assess the
amount of analgesic to control pain without giving too much or too little.” A surgical
nurse who identified the uncooperative and demanding patient as a difficult problem
identified these patients as having “low pain tolerance and demanding.”

Medical nurses.

The medical nurses presented many of the same themes when answering the
questions of difficult problems encountered in nursing a patient in pain. Not providing adequate pain control represented the greatest problem. Twenty-three percent of medical nurses identified inadequate pain control as the most difficult problem they encountered. One of the nurses wrote, “The most difficult thing is getting the pain under control so that the patient has some quality of life. Sometimes I feel very helpless when no matter what we give patients, the pain is still not controlled.”

Seventeen percent of the medical nurses surveyed stated that finding a balance between pain control and sedation was a problem. Finding the right balance is important to family members, the patient, and the nurse in maximizing the patient’s ability to function.

Patient education, nurses’ knowledge and assessment of pain each represented 14% of the difficult problems the medical nurses identified. Encouraging the patient to take sufficient medication was stated as often as the patient unwilling to use a pain score to rate their pain. The nurses found their knowledge was lacking mainly in understanding medications. Closely linked to this lack of knowledge was the inability to properly assess the patient in pain. There was no elaboration to suggest whether the difficulty in assessing was due to a lack of knowledge, patient or environmental factors.

The next three themes, busy units, issues with the doctors, and concern of addiction were each identified by 11% of the medical nurses surveyed. The effect of the busy unit was depicted as “not being able to respond quickly due to increasing patient load” and “finding the time to assess and manage pain right.” Issues with doctors were stated as “proper orders for analgesics” and the increase in the use of telephone
A language barrier was represented as the most difficult problem by 3% of the medical nurses surveyed. This was depicted as affecting the expression of the severity of pain from both the patient and the family.

**Attitude to Pain Control Scale**

The medical nurses had a median score of 11 and a range of 1 - 26. The surgical nurses had a median score of 13 with a range of -4 to 25. These differences were not significant (p = 0.66). The measures of central tendency and the p values are presented in Table 8. These scores were further interpreted to represent what percentage of nurses had a positive, mixed, or negative attitude toward pain and are represented in Table 9. It was found that the majority of nurses in the surgical group (69%) had mixed attitudes toward pain and 31% held a positive attitude toward pain. Similarly, the medical group had 31% with a positive attitude and 69% displaying mixed attitudes. Using a 2-tailed Fisher Exact Test, these differences are again not significant (p = 1.00). The same analysis was completed between the medical and surgical groups within each hospital. No significant differences were found within these groups.

The results of the responses to each individual question within the survey are depicted in Table 10. The surgical and medical nursing groups disagreed upon two statements. Fifty two percent of the surgical nurses disagreed with the statement that nurses most often underestimate the severity and existence of a patient’s pain. However, more than 63% of the medical nurses agreed with this. Seventy four percent (n = 58) of surgical nurses agreed or strongly agreed with the statement that all patients should
Table 8

Attitude to Pain Control Scale

<table>
<thead>
<tr>
<th>Overall scores</th>
<th>Mean</th>
<th>STD</th>
<th>Min</th>
<th>Median</th>
<th>Max</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery (n = 78)</td>
<td>12.51</td>
<td>5.90</td>
<td>-4</td>
<td>13</td>
<td>25</td>
<td>0.66</td>
</tr>
<tr>
<td>Medicine (n = 35)</td>
<td>12.26</td>
<td>6.17</td>
<td>12</td>
<td>11</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-Surgery (n = 39)</td>
<td>12.67</td>
<td>5.73</td>
<td>-4</td>
<td>13</td>
<td>25</td>
<td>0.50</td>
</tr>
<tr>
<td>A-Medicine (n = 9)</td>
<td>13.89</td>
<td>7.15</td>
<td>1</td>
<td>16</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>B-Surgery (n = 20)</td>
<td>12.90</td>
<td>6.08</td>
<td>0</td>
<td>14</td>
<td>22</td>
<td>0.54</td>
</tr>
<tr>
<td>B-Medicine (n = 7)</td>
<td>11.43</td>
<td>5.09</td>
<td>5</td>
<td>11</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>C-Surgery (n = 19)</td>
<td>11.79</td>
<td>6.32</td>
<td>1</td>
<td>11</td>
<td>23</td>
<td>0.95</td>
</tr>
<tr>
<td>C-Medicine (n =19)</td>
<td>11.79</td>
<td>6.21</td>
<td>1</td>
<td>11</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

Note: Maximum Score = 32

Mann-Whitney U Test used. No significant difference in knowledge tests shown between medicine and surgical groups.
Table 9

Percentage of Positive and Mixed Attitudes Toward Pain

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Mixed</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery (n = 78)</td>
<td>31%</td>
<td>69%</td>
<td>1.00</td>
</tr>
<tr>
<td>Medicine (n = 35)</td>
<td>31%</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-Surgery (n = 39)</td>
<td>31%</td>
<td>69%</td>
<td>0.25</td>
</tr>
<tr>
<td>A-Medicine (n = 9)</td>
<td>56%</td>
<td>44%</td>
<td></td>
</tr>
<tr>
<td>B-Surgery (n = 20)</td>
<td>35%</td>
<td>65%</td>
<td>1.00</td>
</tr>
<tr>
<td>B-Medicine (n = 7)</td>
<td>29%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>C-Surgery (n = 19)</td>
<td>26%</td>
<td>74%</td>
<td>1.00</td>
</tr>
<tr>
<td>C-Medicine (n = 19)</td>
<td>21%</td>
<td>79%</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Fisher Exact Test used for analysis of difference between groups due to small numbers in many of the groups.
Table 10

Nurses Responses to Pain Statements

<table>
<thead>
<tr>
<th>Generally held view</th>
<th>% Agreed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surgery</td>
</tr>
<tr>
<td>Patient’s may not be able to have complete pain relief</td>
<td>74%</td>
</tr>
<tr>
<td>Anxiety increases perception of pain</td>
<td>97%</td>
</tr>
<tr>
<td>Nurses are not better qualified to determine pain</td>
<td>92%</td>
</tr>
<tr>
<td>Patients who seem to use pain to obtain benefits need to be believed</td>
<td>47%</td>
</tr>
<tr>
<td>Talking and listening do reduce a patient’s pain</td>
<td>88%</td>
</tr>
<tr>
<td>Behavior and V/S are not good indicators of pain</td>
<td>69%</td>
</tr>
<tr>
<td>Pain tolerance cannot be determined by ethnic group</td>
<td>74%</td>
</tr>
<tr>
<td>All real pain does not have an identifiable cause</td>
<td>76%</td>
</tr>
<tr>
<td>Nurses do not always make accurate inferences about pain</td>
<td>81%</td>
</tr>
<tr>
<td>Patients do not become easily addicted post operatively</td>
<td>87%</td>
</tr>
<tr>
<td>It is best for patients to know what is happening to them</td>
<td>86%</td>
</tr>
<tr>
<td>Patients should not be encouraged to have a high tolerance for pain</td>
<td>92%</td>
</tr>
<tr>
<td>What a patient says about his pain is always true</td>
<td>45%</td>
</tr>
<tr>
<td>Nurses cannot determine a patient’s pain by the type of surgery</td>
<td>81%</td>
</tr>
<tr>
<td>Analgesics are not always the best way of reducing pain</td>
<td>76%</td>
</tr>
<tr>
<td>Nurses often underestimate a patient’s pain</td>
<td>37%</td>
</tr>
</tbody>
</table>

Note. All statements have been placed in the opinion of the generally held viewpoint and not as written in the Attitude Instrument.
expect to suffer some pain, whereas 63% (n = 22) of medical nurses felt they should not.

More than 90% of the medical and surgical nurses surveyed, agreed with the statement that anxiety increases the perception of pain. The idea that nurses are better qualified and more experienced to determine the patient’s pain than is the patient was disputed by more than 90% of nurses. Similarly, they did not believe that all persons can and should be encouraged to have a high tolerance for pain.

Unfortunately, the medical and surgical nurses indicated that they did not strongly support the concept that what the patient says about his pain is always true. Only 45% of surgical nurses and 63% of medical nurses agreed with that statement. There was no clear decision, in either group, that the person who uses his pain to obtain benefits or preferential treatment does not hurt as much as he says he does. More than 30% of the surgical nurses and 23% of the medical nurses were unsure about this statement.

There were two statements that the medical and surgical nurses agreed with more than 50% of the time. These included the following:

1. Talking and listening to the patients can reduce their pain.

2. Some ethnic groups can tolerate more pain than others.

The remaining statements were disagreed with by nurses in both groups. More than 75% of the nurses in both groups disagreed with the following statements:

1. Nurses always make accurate inferences about the severity and existence of the patient’s pain.

2. Care should be taken when giving controlled drugs postoperatively as patients
become easily addicted.

3. It is best that people should not know what is happening to them as this may cause anxiety.

**Andrew and Robert Vignette**

The majority of the medical nurses (66%) recorded Andrew’s pain as an eight, while only 55% of the surgical nurses charted an eight. The remaining respondents in both groups recorded a pain score from two to seven, underestimating the score as determined by Andrew. The distribution of the frequencies and percentages for medicine and surgery for both the Andrew and Robert scenarios are presented in Table 11.

Of the surgical nurses, 15% (n = 12) responded to Andrew’s report of pain being an eight by not administering any medication to him. Only 18% (n = 14) of surgical nurses would administer Andrew a 1 mg dose. The majority of surgical nurses (n = 30 or 39%) documented they would again administer the 2 mg dose, while 28% (n = 22) would actually increase the dose of morphine for Andrew to what the doctor had allowed as the maximum. It was interesting that although over half the surgical nurses believed Andrew’s rating of his pain, less than half would increase the dose of his morphine to 3 mg., resulting in under-medication of the patient.

The results from a Mann-Whitney U Test identify no significant difference in how the nurses in the medical and surgical nursing groups document Andrew’s pain (p = 0.39). Similarly, no difference was noted between the medical and surgical nurses within the hospitals (Hospital A: p = 0.55, Hospital B: p = 0.43, Hospital C: p = 0.14.)
Table 11

**Frequency and Percentage of Nurses that Scored Andrew and Robert's Pain as an Eight.**

<table>
<thead>
<tr>
<th></th>
<th>Andrew's score (n)</th>
<th>P value</th>
<th>Robert's score (n)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery (n = 78)</td>
<td>43 (55%)</td>
<td>0.39</td>
<td>64 (82%)</td>
<td>0.04*</td>
</tr>
<tr>
<td>Medicine (n = 35)</td>
<td>23 (66%)</td>
<td></td>
<td>29 (83%)</td>
<td></td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-Surgery (n = 39)</td>
<td>23 (60%)</td>
<td>0.55</td>
<td>34 (87%)</td>
<td>0.85</td>
</tr>
<tr>
<td>A-Medicine (n = 9)</td>
<td>7 (78%)</td>
<td></td>
<td>8 (89%)</td>
<td></td>
</tr>
<tr>
<td>B-Surgery (n = 20)</td>
<td>11 (55%)</td>
<td>0.43</td>
<td>14 (70%)</td>
<td>0.97</td>
</tr>
<tr>
<td>B-Medicine (n = 7)</td>
<td>2 (29%)</td>
<td></td>
<td>5 (71%)</td>
<td></td>
</tr>
<tr>
<td>C-Surgery (n = 19)</td>
<td>9 (47%)</td>
<td>0.14</td>
<td>16 (84%)</td>
<td>0.02*</td>
</tr>
<tr>
<td>C-Medicine (n = 19)</td>
<td>14 (74%)</td>
<td></td>
<td>16 (84%)</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Significant difference noted between the median surgical and medical nursing groups and in the subgroups of Hospital C, in relation to scoring of Robert’s pain. Mann-Whitney U tests were used to determine the probability.*
Robert, the patient grimacing in pain, was believed by more nurses in both groups. There were no scores below five for Robert, and a few nurses in the medical group (3%), recorded his pain above what he identified. The most common answer was recorded as eight by 83% (n = 29) of the medical group and 82% (n = 64) of the surgical group. Again this was the correct answer. Robert’s pain was documented as lower than what he stated by 9% (n = 3) of the medical nurses and by 18% (n = 14) of the surgical nurses. Mann-Whitney U Tests demonstrated a significant difference between the medical and surgical nurses rating of Robert’s pain (p = 0.04). Using the same test, a significant difference was also identified between the medical and surgical nurses within Hospital C (p = 0.02). The significant difference noted in the large group was most probably created by the difference in the groups within Hospital C as two of the nurses in this group documented Robert’s pain as greater than an eight. The nursing groups in Hospital A and Hospital B did not show a significant difference (p = 0.85 and p = 0.97, respectively) between how the medical and surgical nurses would rate Robert’s pain.

One scenario presented in the vignette portrayed Andrew, smiling and joking with friends, yet expressing inadequate pain relief with medication given only two hours prior. Results of medicating Andrew are presented in Table 12. Fourteen percent (n = 5) of the medical nurses stated they would administer no medication to Andrew. A slightly larger number (26%, n = 9) would administer 1 mg of morphine while, 20% (n = 7) of the medical nurses would repeat the 2 mg dose that had not previously managed Andrew’s pain. The majority of the medical nurses (n = 14, 40%) would increase the dose to the maximum allowable dose ordered by the physician.
## Table 12

### Amount of Morphine Given to Andrew

<table>
<thead>
<tr>
<th>Pain score</th>
<th>Morphine given</th>
<th>Surgery (n = 78)</th>
<th>Medicine (n = 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>Nothing</td>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>3</td>
<td>Nothing</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
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<td></td>
<td>3 mg</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>5</td>
<td>Nothing</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>6</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
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<td>6</td>
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<td>2 mg</td>
<td>4</td>
<td>80%</td>
</tr>
<tr>
<td>7</td>
<td>1 mg</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
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<td>5%</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
<td>5</td>
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<tr>
<td></td>
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<td>17</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>19</td>
<td>44%</td>
</tr>
</tbody>
</table>
(3 mg). It was interesting that two of the medical nurses, who did not administer any medication to Andrew, recorded his pain as an eight. All of the nurses who increased Andrew’s dose to 3 mg documented his pain as an eight.

The nurses responses to the medication they would administer to Robert are represented in Table 13. The majority of medical nurses (66% or n = 23) identified they would administer Robert 3 mg of morphine. Unfortunately, 29% (n = 10) would repeat the dose that did not work effectively previously, 3% (n = 1) would administer a lower dose and 3% (n = 1) would give him nothing at all for his pain. Fifty-five percent (n = 43) of the surgical nurses documented they would increase the dose of Robert’s morphine to 3 mg. Forty-one percent (n = 32) would have repeated the dose of 2 mg, while 4% (n = 3) of surgical nurses would decrease the dose to 1 mg to treat Robert’s pain. Unlike the medical nurses, every surgical nurse stated they would administer morphine to Robert.

Institutional Survey

The interview carried out with the educator or the manager at each of the three hospitals revealed data about the resources available to the nurses in the hospitals in which they worked. The first six questions requested information about documentation supports for the nurse related to pain. The questions focused on admission forms identifying patients with pain, flow sheets to document ongoing assessments, opioid related side effects, pain relief measures, and policies and protocols for administration of medications.

Hospital A identified that their admission forms were formatted to identify patients with problems of pain. The purpose of this was to identify and assess the
### Table 13

**Amount of Morphine Given to Robert**

<table>
<thead>
<tr>
<th>Pain score</th>
<th>Morphine given</th>
<th>Surgery (n = 78)</th>
<th>Medicine (n = 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>5</td>
<td>Nothing</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>2</td>
<td>67%</td>
</tr>
<tr>
<td>6</td>
<td>1 mg</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>3</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>3</td>
<td>43%</td>
</tr>
<tr>
<td>7</td>
<td>2 mg</td>
<td>3</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>8</td>
<td>1 mg</td>
<td>1</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>2 mg</td>
<td>24</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>39</td>
<td>61%</td>
</tr>
<tr>
<td>9</td>
<td>2 mg</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>3 mg</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10</td>
<td>2 mg</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
patient’s pain as existing in a particular physiological system (ie: musculoskeletal). This focus of documentation recognized that the patient could experience more than one pain source at time of admission (e.g., headache, as well as a broken bone). The flow sheets that existed to document ongoing assessment and relief of pain had also been recently revised to dedicate a specific location for documentation of pain. These forms were not universally used, however, although the forms used for surgical pain modalities such as epidural and PCA pumps were much more consistently used. Protocols were in use for morphine IV, PCA, and epidural analgesics that identified strategies to manage analgesic-induced side effects. Other medications and non-pharmaceutical approaches were ordered by the physicians. Standards were available for nurses which reflected appropriate analgesic administration principles for the commonly administered medications.

Hospital B identified that some medical and surgical units participating in the study had admission forms to include data which identified patients with problems of pain. The inpatient units included this information on admission forms, but not for the short stay patients. The flow sheets used for the documentation of ongoing assessments and progress toward pain relief were housed on the computer at this hospital. The generic form could be used for pain assessment. Pain managed with a PCA pump was documented on a specific form and PCA/epidural protocols were available. Protocols had not been developed to identify strategies to manage analgesic-induced side effects. As well, the medication forms reflected appropriate analgesic administration principles and included those for PCA and epidural management.
Hospital C identified that they used a generic form to identify patients with pain on admission and flowsheets for documenting ongoing assessment and relief of pain, for patients. Standardized care plans, protocols, or critical paths to identify standard ways of managing different types of pain were not available. Care maps were used to identify strategies to manage analgesic-induced side effects and follow individual orders given by physicians. The medication forms that supported appropriate analgesic administration principles were for the administration of PCA analgesics only. Patients with epidural analgesia were not managed on the medical or surgical units at the time of the study, although a program was being considered.

The next part of the interview with the representatives of the hospitals revolved around educational efforts within the institution. The questions focused on pain education, opportunities for case presentations by the nurses, the presence of expert preceptors and interdisciplinary pain consultation team, educational resources for patients and families, and the support for nurses to attend pain conferences.

Hospital A identified that their pain management component of orientation existed only in the surgical orientation; however the discussion of general principles of pain management, focused on PCA pumps and epidural administration of analgesics. No opportunities were given on the units studied to present patients with pain problems, unless discussed as a component of a family conference. Nurses did not have identified expert preceptors or role models working on the unit. Nevertheless, they did access the educators as required when problems arose or when they were uncertain of how to deal with a particular pain problem. No interdisciplinary pain consultation service existed in
Hospital A to evaluate complex pain problems. The surgical nurses relied on the anaesthetists or the primary care physician to consult with and reevaluate pain management when problems arose. Depending on the diagnosis, written pain educational materials were available for patients. The surgical patients and family received this education prior to hospital admission when they attended a preoperative educational session. Nurses in this hospital were supported and encouraged to attend pain conferences. These conferences were usually promoted by the educators and managers on the units studied.

The representative at Hospital B identified that pain education was not part of the orientation of new nurses to the unit, but they did have periodic opportunities for the nurses to present or discuss patients with pain problems on rounds. There were no expert preceptors, role models, or interdisciplinary pain consultation services to assist nurses with complex pain problems. If the nurses had a problem with pain they discussed it with the patient’s physician. The hospital provided written pamphlets regarding pain management and had formal teaching sessions where they discussed pain in preoperative clinic setting for patients and families. Conferences on pain were not identified by the hospital as an important area for the nurses to further their knowledge base.

Hospital C stated that they did not include pain education in their orientation as the units studied felt that this was a basic skill for RNs. Thus they should be proficient in pain concepts when they were hired. Interdisciplinary rounds were held weekly and family centered rounds as required, providing the nurse with an opportunity to present patients with pain problems. The nurses also presented journal reviews of nursing
articles, increasing the potential for discussion of pain related issues. The nurses on the 
units had access to a two-person interdisciplinary team consisting of a physician and an 
RN who acted as pain consultants when called upon by the nurses. The nurses also 
utilized their managers and educators for assistance with other pain assessment and 
management issues. The patient and family education component involved preoperative 
education with the RN from the interdisciplinary pain team and a pharmacy 
representative. Written information also existed for patients who requested it. Nurses 
had not been attending pain conferences and there was no ongoing pain-related 
education.

The last two questions focused on quality indicators for pain. These two questions 
asked if pain was monitored through a quality improvement process and were there any 
policies or procedures that directed the appropriate use for pain technology (e.g., PCA 
pumps, epidural infusions). Hospital A indicated they were in the process of including 
pain management as a component of patient satisfaction indicators on the units. They did 
identify that there were no formal policies or procedures to direct appropriate pain 
technology; the anaesthetist or physician made the decision about the most appropriate 
form of pain management for the individual patient.

Hospital B identified that they too measured patient satisfaction of pain 
management through a satisfaction survey. They indicated that they did not audit charts 
or review flowsheets as a routine quality indicator. Policies and procedures did exist to 
direct the appropriate use of pain technology at this hospital.

Lastly, hospital C indicated that there were no specific quality improvement
projects on pain. However, patient satisfaction questionnaires did ask about pain. They did identify that policies and procedures were in place to direct the appropriate use of pain technology.

Summary

Question 1

What do nurses, working in medical and surgical units, know and believe about pain assessment and management?

Nurses in medical and surgical units have limited knowledge and hold mixed attitudes toward pain assessment and management. Nurses who attended three or more inservices or educational sessions on pain, in the last two years, demonstrated more positive attitudes toward pain assessment and management.

Question 2

Is there a difference in pain knowledge and attitudes between nurses working in medical versus surgical units?

No significant difference in knowledge or attitudes were evident between the total group of medical nurses and surgical nurses. A significant difference did exist between the medical and surgical units in Hospital C with regards to the documentation of pain reported by Andrew and Robert.

Question 3

What organizational resources are available to assist nurses with the assessment and management of pain?
Each of the three hospitals studied had implemented different resources to assist nurses in caring for patients in pain. Some resources were in the process of being implemented during the study. These related to documentation, educational programs and initiatives, and quality improvement indicators. Only one hospital had an interdisciplinary team in place to assist the nurses with caring for patients in pain. Formal educational programs had been implemented in two of the hospitals, but this was not identified as a hospital wide program. Documentation specific to pain assessment and management was in many different stages of implementation in both the hospital and the unit within that hospital.

**Question 4**

Is there a relationship between the availability of hospital resources and nurses' knowledge and attitudes?

The resources identified were variable and mainly consisted of pain flow sheets and protocols for parenteral analgesia. Resources were not consistently available or utilized across all units or sites. As a result, these data were used only for descriptive purposes and relationships were not examined.
CHAPTER FIVE: DISCUSSION AND ANALYSIS, IMPLICATIONS, AND CONCLUSIONS

The final chapter will interpret the findings in relation to the research questions posed in Chapter One. The interpretation of the data will be followed by a discussion of the limitations of the study and implications for nursing education and practice and for further research.

Discussion and Analysis

The analysis of the three instruments used to assess the knowledge and attitudes of pain assessment and management uncovered many related findings and some conflicting information. Each of the three instruments contributes interesting data to the first two research questions, while the institutional assessment provides the data for the third. The final question attempted to use a summary of all the data.

Research Question 1

The scores from the knowledge instrument identified that there is a lack of knowledge about pain assessment and its management. This finding is consistent with documented in the literature from the 1970s (Charap, 1978; Marks and Sachar, 1973) to recent studies (Brunier et al., 1995; Clarke et al., 1996; Dalton et al., 1996; Ferrell & McCaffery, 1997; Watt-Watson, 1987). These researchers noted that nurses demonstrated inaccurate knowledge about pain assessment and management.

The distribution of overall scores for nurses in a study by Watt-Watson (1987), were similar to the present study. The majority of nurses obtained a score in the rank from 50 - 75%, with the remainder scoring between 25 and 50%. Fewer than 5% of
nurses in both studies were represented in either the 0 - 25% range or the 75 - 100% scoring range. The percentage of nurses who scored above 50% was greater in this study than in the one by Watt-Watson.

Similar to the findings by Brunier et al., (1995), Watt-Watson (1987) and Weis et al., (1983) only a small percentage of nurses in both the medical and surgical groups felt patients should be pain free. On the attitude survey, surgical nurses supported these findings as 74% of them felt that patients did not have a right to a pain-free existence. On the contrary, 80% of medical nurses stated they should be pain free. Studies of attitudes by Scott (1992) and Thorn (1997) support the finding that the goal of nurses is not complete relief of pain, a principle of effective acute pain management recommended by AHCPR (1992). This is in contrast, however, to the study by Hamilton and Edgar (1992) in which the majority of nurses identified that analgesics should be administered before a patient feels pain. A study by Dalton et al. (1996) exemplifies both of these scenarios. Prior to an educational program on pain, over half of the 29 nurses believed that patients should be pain free. At the completion of an educational program, 100% of the nurses adopted this view.

The areas of addiction, opioid administration, opioid knowledge, and pain assessments appeared to be the most troublesome for the nurses in both groups. This finding was consistent with the results of studies by many pain researchers such as Ferrell & McCaffery (1997), Hamilton and Edgar (1992) and Watt-Watson (1987).

Fear of Addiction

In order to administer appropriate, effective analgesics, nurses need to recognize
their fear of patients becoming addicted to opioids. Fewer than 35% in each group represented the incidence of addiction as over 10% and only 8% of the medical nurses and 13% of the surgical nurses believed addiction to be over 25%. This is an improvement from the studies of Brunier et al. (1995), Ferrell et al. (1992), Hamilton and Edgar (1992), Watt-Watson (1987), Weis et al. (1983) and is supported by the findings of a recent study by McCaffery and Ferrell (1997a) which found only 13% overestimated addiction to be greater than 25%. Although an improvement, the results of these studies indicate that some nurses continue to fear opioid addiction. In the study by McCaffery et al. (1990) over 75% of the 2,459 nurses studied overestimated addiction. This finding is a major concern because the participants were identified as “motivated nurses” who had volunteered to attend the pain workshop in which the study took place.

The concern of overestimating addiction is a two-fold problem. In agreement with Marks and Sachar (1973), McCaffery et al. (1990) suggested that nurses’ fear of addiction can lead to an underestimation of pain, resulting in poor pain control and medication errors. They also suggested that if nurses are not knowledgeable about what an opioid is, serious mistakes could be made. Brunier et al. (1995) also identified misconceptions about addiction in their study. They emphasized that nurses require accurate information about addiction and properties of opioids.

Other studies suggest that fear of addiction results from a lack of accurate information about addiction in health care textbooks and in inadequacies in formal nursing education (Ferrell et al., 1993; Graffam, 1990.) Donovan (1983) stated that "medical and nursing staff are educationally ingrained with the idea that opiates are
dangerous, producing respiratory depression and addiction and there is a general reluctance to depart from traditional routines of analgesic prescription in order to relieve a patient’s pain” (p. 127). The patient vignette used in this study demonstrates this viewpoint. Although the vignette does not ask the reasons behind the decisions the nurses made in medicating Robert and Andrew, the results support the quote by Donovan (1983). Many nurses who believed Robert, administered the same dose of morphine that was previously ineffective to manage his pain. Some nurses even gave him less morphine when he stated he was still in pain. These dosage choices were made with the awareness and the safety of a physician’s order for up to 3 mg. Although one can only speculate the reasons behind the decisions, the fear of giving Robert too much morphine is certainly a strong consideration. Ferrell et al. (1992) suggest that nurses believe addiction frequently occurs as a result of opioid use over a long period of time. This does not explain why they do not administer the medication in a patient with acute pain. The relationship of addiction to duration of opioids was not examined in this study. Using the same vignette, McCaffery and Ferrell (1997a) found an improvement in nurses’ knowledge of addiction over a seven year time span. However, they caution that the improvement may be related to exposure to surveys over time and not necessarily to an improvement in practice. As well their samples reflect a selection bias of nurses choosing to know more about pain or their inferences.
As in Watt-Watson’s (1987) study, the surgical nurses in the open-ended question identified fear of addiction as one of the major problems nurses face in caring for a patient in pain. Interestingly though, only 5% of the surgical nurses and 4% of the medical nurses admitted to their own fear of addiction. Over 80% disagree that care should be taken when administering controlled drugs postoperatively as patients become easily addicted. These findings combined with the inaccurate answers regarding addiction suggests that nurses not only are not aware of the incidence of addiction, but they complicate this issue further by not recognizing that it impacts the care that they provide to the patient.

**Knowledge of Opioids**

Inadequate knowledge of opioids and their administration presents a great barrier for effective pain management. The present study reveals that a high percentage of nurses continue to lack essential knowledge about opioids as reflected in the high percentage of incorrect answers and questions left blank. Less than 50% of nurses in both medical and surgical groups correctly answered the duration of action for morphine, Demerol, and Dilaudid. A higher percentage of nurses correctly identified codeine. This was an interesting finding as codeine is frequently used but often inappropriately. The lack of knowledge about opioids and their administration are supported by other researchers (Ferrell et al., 1993; McCaffery et al., 1990; Watt-Watson, 1987).

Consistent with Watt-Watson’s (1987) findings, the nurses in this study incorrectly identified morphine as the opioid with the most side effects at equianalgesic doses. Although the use of morphine has increased over the last 10 years, and its safety
has been well documented, many health care practitioners and patients continue to fear morphine. Morphine administered parenterally or orally is the opioid of choice for most patients (AHCPR, 1992). While the majority of studies addressing knowledge of opioid equianalgesic doses focus on cancer pain, findings reflect minimal knowledge about opioids and implications of equianalgesic doses (Ferrell & McCaffery, 1997). In practice, patients are changed from one opioid to another with little understanding of equianalgesic doses.

The medical nurses demonstrated a better understanding of PRN opioids than did either the surgical group or the nurses in the group participating in Watt-Watson’s (1987) study. Watt-Watson found that one third of the nurses in her study believed the administration of PRN medications was to prevent tolerance and addiction. As needed (or PRN) medications are ordered by the physician to allow opportunity for the nurse to use her judgement based on changing patient status. In the early studies of pain, Charap (1978) found that almost half of the nurses studied believed the PRN order for opioids was to prevent tolerance and addiction. Ferrell, Ebarts, McCaffery and Grant (1991) noted 81% of nurses stated they administered analgesics on a regular basis rather than PRN. One of the major barriers to effective pain management reported in recent research is the patient’s reluctance to request pain medication (Strevy, 1998). If the nurse continues to misinterpret how PRN opioids are to be used and waits for a patient’s request for pain medication, the incidence of undermedicating patients will presumably continue. Without the knowledge of the proper use of PRN medications, effective pain management will be a difficult goal to achieve.
Pain Assessment

Nurses in both groups were more knowledgeable about pain assessment than opioid administration. The majority of nurses (67%) identified that they used a standardized tool as well as verbal communication to assess a patient’s pain. The results are an improvement from the study by Watt-Watson (1987) in which only 3% of nurses identified using any standardized approach to assessment. It was unfortunate, however, that 14% nurses in the surgical setting and 8% in the medical group did not identify using patient self-report to assess pain. In a study by Scott (1992) the majority of the 52 nurses used some form of standardized pain scale in assessing pain. Dalton and McNaul (1998) also have begun to study scales used in the clinical setting and the degree to which they are standardized. Both studies suggested that the variation in use as well as the multitude of pain scales available can create confusion for patients. Six varieties of pain scales were identified by the nurses in the present study with little evidence of standardization in their use. Many researchers support the use of standardized pain assessment and documentation tools (Camp, 1988; Dalton & McNaul, 1998; Donovan, 1992; McCaffery & Beebe, 1989).

Faries, et al. (1991) state that “by directly asking the patient, the nurse avoids reliance on assumptions and behavioral observations that frequently result in inadequate recognition of pain” (p. 312). Unfortunately, this does not always happen. Although 67% of surgical nurses and 69% of medical nurses in this study used pain scales to assess pain, many of them revealed that they did not always believe the pain scores they get. However, in both the attitude instrument and the knowledge survey, over 90% of the
nurses in both groups agreed that the patient’s assessment of pain was more valid than the nurses. Nurses may be required for PCA to document pain on a pain scale, but it may not be used routinely in the practice of assessing pain. Moreover, only 44% of surgery nurses and 63% of medicine nurses believed that what patients said was always true about their pain. This finding is similar to Scott’s (1992) findings.

Twenty percent of surgical nurses and 23% of medical nurses in the present study agreed that pain can always be detected by behavior and physiological signs. Dalton (1990) and McCaffery and Ferrell (1991) found similar results in their studies. Although 75% of nurses in Dalton’s study reported directly asking about a patient’s pain, 80% identified using observations of behavior to discover if patients were in pain. This does not however, negate the use of communication and a pain scale. Faries et al. (1991) demonstrated a significant improvement in pain assessment and management when nurses communicated with their patients and used a pain assessment tool.

The vignettes using Andrew and Robert underline the incorrect belief that patients need to demonstrate physical signs of pain, as nurses believed Robert more than Andrew, which contributed to the undertreatment of pain. Although nurses stated they should believe what the patient says, their proposed actions did not support this belief. The AHCPR (1992) has developed pain management guidelines which strongly recommend that the most reliable indicator of pain is the patient’s self-report and vital signs should not be used in place of self-report with verbal patients. McCaffery and Ferrell (1991, 1992, 1997a) have used this patient vignette to measure the impact of patients’ behavior on responses to nurses assessment of pain and choice of analgesic for
treatment. Repeatedly, the results show that nurses are more accurate in documenting Robert’s pain score where behaviors reflect what they believe to be pain. After finding similar results, Scott (1992) suggests that nurses continue to require behavior to validate the patient’s self-report. He suggests that if they do not get that validation, the probability that they would believe that patient decreases. Unfortunately this too contributes to ineffective pain management.

Although the literature has provided ample support to demonstrate the inaccuracies of the nurse’s assessment, surgical nurses in this study, continued to disbelieve that they often underestimated pain. This finding was supported by the results showing that the majority of surgical nurses did not believe what the patient said about pain was always true. Although no significant differences were demonstrated between medical and surgical nurses in overall attitudes, a few individual items in the attitude survey showed key differences in the nursing groups studied. For instance, 63% of the surgical nurses disagreed that nurses often underestimated pain while the same percentage of medical nurses agreed with this statement. Myers (1985) suggested that changes in attitudes take longer than changes in knowledge. Although knowledge had improved through recent efforts of pain research, teaching, and accountability, outdated attitudes about pain have continued to impact practice. Davis (1997) emphasized that attitudes can be progressively changed with education and role modeling.

Barriers

Considerable research has reported inadequate pain relief for patients over the last twenty years (Carr, 1990; Donovan, 1983; Ferrell et al., 1991; Ferrell, McCaffery &
Ropchan, 1992; Marks & Sachar, 1978). The continuing lack of valuing patient’s self-report and the use of behavioral signs to support patients’ pain reports are problematic for changes in pain management to occur. As health care providers, nurses require sound knowledge and attitudes to make decisions about treating the patient in pain. Unfortunately, these data identify that some nurses lack appropriate knowledge and attitudes to be effective in pain assessments and interventions.

Identification of barriers to pain management have increased our understanding of possible reasons for continuing ineffective pain management. In this study, nurses identified several major problems encountered in caring for patients in pain. Many of the themes documented were similar in both patient care areas and had been previously identified in the literature (Brunier et al., 1995; O’Brien et al., 1996; Watt-Watson, 1987). Although each person’s pain is unique standardized key components are essential to effectively manage pain. These components involve assessing the pain, communicating amongst team members, arriving at a plan of care for the patient which is flexible to meet the changing needs of the patient, and implementing this plan with regular reassessments of its effectiveness. Barriers can arise at several points in this process and create problems in relieving pain.

Poor pain control was identified as the greatest problem by both medical and surgical groups in the present study. Other studies also have identified this problem (Sheidler et al., 1992; Wallace et al., 1995). Inadequate pain management is a major challenge that health care has not been able to overcome. Researchers (Clarke et al., 1996; Elliott & Elliott, 1991; Ferrell et al., 1992; Ferrell et al., 1993; Graffam, 1990;
Hamilton & Edgar, 1992; Marks & Sachar, 1973; McCaffery, 1996; McCaffery & Ferrell, 1997a; Tucker, 1990; Watt-Watson, 1987; Weis et al., 1983) have suggested that a lack of knowledge is a major contributor to this ineffective pain management which was identified by the nurses in this study as well. Nurses also identified pain assessment as a major problem, but the basis of difficulty was not clear. Nurses’ inadequate knowledge could represent a higher percentage of the problem than documented as difficulties with pain assessment may involve knowledge. Supporting the problem with assessment, are findings by Bookbinder et al. (1996) in which 55% of the nurses identified assessing complex patients as the number one problem they encounter. The assessment difficulties in this study were related primarily to the complex patient defined as confused or acutely ill.

Difficulties with doctors’ analgesic orders were also rated as problematic by nurses in both groups. Pain management requires 24-hour a day responsibility and the AHCPR (1992) have identified opioids as the cornerstone of pain practice in acute care. Thus, the nurse’s dependence on the physician for analgesic orders could create barriers to helping patients in pain. The inability to access the physician for adjustments in analgesic doses may also limit the nurse’s options to help the patient. An understanding of appropriate analgesics, doses and frequency are required. As well, communication between physician, patient, and nurse, is essential to individualize analgesic approaches effectively by both nurses and physicians. Two studies which implemented pain education programs for nurses reported that physicians significantly influenced whether programs were implemented in the practice settings (Francke et al., 1997; Wallace,
Graham, Ventura & Burke, 1997). Other studies researching physician knowledge and attitudes describe similar results to those of nursing (Bookbinder et al., 1996; Charap, 1978; Donovan, 1983; Marks & Sachar, 1973; Weis et al., 1983). Bookbinder et al. (1996) report that 47% of nurses identified delays in physician orders as a major barrier. In practice therefore, physician’s misbeliefs can limit nurses’ ability to implement pain modalities learned at pain education sessions.

The patient’s role in pain assessment and management is increasing with the recognition of the importance of self-report. Now, more than ever, patients are being asked to take an active role in communicating their pain to the nurse and other interdisciplinary team members. Unfortunately, this increased responsibility has not been accompanied by any formal education for patients. Patients have not been taught how to communicate pain or the pain management options available to them. Some nurses in this study identified this as another pain management problem, similar to other studies (Ferrell et al., 1992; Clarke et al., 1996). Bookbinder et al. (1996) evaluated cancer pain in a study of 1,210 nurses and 698 patients. They found that two barriers which remained over the implementation of a nursing pain program were related to patients’ reluctance to report pain and take opioids, indicating the need for patient education on the topic of pain. All three hospitals in this study indicated that they provided written pain-related material and formal pain education to patients prior to elective surgery whenever possible. However, no evidence of these strategies has not been done.

Another problem in caring for the patient in pain was identified by the nurses as finding the delicate balance between pain and sedation. Although this finding was not
identified in the literature, it may reflect a fear of addiction.

The nurses in both groups reported the workload on the unit to be a problem for caring for the patient in pain. As the health care setting continues to evolve at such a fast pace, the nurse more than ever is challenged to maintain expertise in a multitude of areas. As patients require more qualified complex care and administrators require a shorter length of stay because of economic constraints, nurses must prioritize patient care to provide more complex care in a limited time frame. The result, as nurses have identified in this study, is that patients remain in pain. Other researchers also have found that nurses report they do not have enough time to effectively manage patient's pain (Bookbinder et al., 1996; Ferrell et al., 1992; Henkleman, 1994).

**Research Question 2**

There was minimal agreement in the literature about which nurse characteristics influence pain knowledge and attitudes. In the present study, no significant differences were evident between any of the demographic data and the knowledge scores. Although these findings were consistent with studies by Dudley and Holm (1984) and Hamilton and Edgar (1992) they are in contrast to those of Brunier et al. (1995) and Dalton (1989). Brunier et al.'s (1995) study revealed significant differences in pain knowledge and attitude scores in relation to level of education and clinical areas of work. Dalton's (1989) revealed differences according to cultural, ethnic, and economic status but not age, education, or area of work. In the present study attitudes were related to attendance at pain inservices.

In the analysis of the medical and surgical groups within each hospital, the
differences in overall knowledge and attitude scores were not significant. However, a significant difference was found between the rating of vignettes as medicine and surgery nurses at Hospital C significantly rated Robert’s pain higher. The analyses of the smaller groups between the medical and the surgical groups in each hospital produced similar results as in the larger group. None of the differences were significant.

**Research Question 3**

The institutional interview included questions related to documentation, education, and quality improvements. These three components focused on supports in the clinical settings that have been identified in the literature to be essential to improving pain management. Camp-Sorrell and O’Sullivan (1991) refer to the need for nursing administration to support pain documentation which is closely linked to the quality of patient care. Documentation can be an important form of communication about a patient’s status and individual needs.

The lack of pain education programs has been repeated numerous times in the literature. Ferrell et al. (1992) have emphasized that to improve the management of patients’ pain, the whole organization needs to make a commitment. Wallace et al. (1997) state that pain management is not just an issue between clinician and patient, but an institutional one, that must be supported by all members of the team.

The analysis of institutional pain resources includes a summary of what each hospital identified as being in place or in development at the time of the interview. Hospital A was reviewing documentation to try to standardize assessment and management of pain in many areas in the hospital. No designated person or hospital wide
education had been established for pain, as responsibility for pain was considered a unit specific component of orientation and education. The anaesthetists were “in charge” of pain management and were considered the experts. In the medical unit the primary care physician was most often consulted by nurses related to individual pain issues. PCA and epidural programs had been established within the hospital and were “working well” on the surgical units. Morphine infusions were also utilized for pain management. One physician was initiating pain therapy options for chronic pain management which were not previously available at the hospital. Quality improvement efforts were beginning at the unit basis and it was identified that the surgical program was said to be doing well. Their efforts were focused on individual units and not across the hospital.

Hospital B had been implementing a pain education program in the surgical program area prior to the beginning of this study. Like Hospital A, PCA and epidural programs had been established within specific units of the hospital. The forms for documenting pain were standardized across the hospital, but not universally used by all units.

Hospital C identified that they had no formal pain program in place for new nurses or existing staff. They indicated that they hire only “experienced staff” on the surgical unit. They had no standard form for documentation of pain. They did however have an interdisciplinary team of two people (one nurse and one physician) that the nurses were encouraged to call for pain issues, problems, or concerns. The nurses identified that this team “worked well”. They had an established PCA program and were examining the possibility of expanding their epidural program from the ICU to the units.
Each hospital had focused on different supports for the nurses. Individual units or programs had been targeted within the hospitals to initiate pain programs and modalities but no hospital wide initiatives had been implemented.

Research Question 4

The institutional survey tool was developed to obtain data from the hospital about its pain management supports in the realms discussed previously (Ferrell et al., 1995). Resources at the three hospitals in this study were minimal, variable and not utilized or implemented consistently. Thus, these data were used only for descriptive purposes.

Summary

In summary, nurses in both the medical and surgical settings in all three hospitals studied demonstrated a lack of knowledge about pain assessment and management. This was particularly evident in the areas of addiction, knowledge of opioids, and the administration of opioids. Although separate knowledge and attitude instruments were used in this study, knowledge and attitudes were often examined in the literature in tandem. Attitudes were identified as mixed for the majority of nurses in both groups as well. It was reassuring that none of the nurses scored as harboring negative attitudes toward pain. Level of basic nursing education, years of nursing experience, years working on the unit, gender, and age did not influence the knowledge or attitude scores. Every participant noted having experience with patients in pain. As there was no variation, this variable could not be measured. However, the frequency with which the nurses attended pain continuing education sessions in the last two years did have a
significant positive influence on nurse’s attitudes toward pain. Although no significant differences were found between the two large groups of medicine and surgery, a significant difference was noted between the medical and surgical groups within Hospital C, related to the assessment and documentation of Robert’s pain in the vignette.

The nurses at each of the hospitals are supported by a variety of resources which are aimed at improving pain assessment and management. The hospitals studied had taken different paths in supporting the pain process. Some had implemented pain education into their orientation process, while others had focused their efforts on developing an interdisciplinary pain consultation team. Each of the hospitals was utilizing many of the same modalities for managing pain (e.g., PCA pumps, epidural pumps), while some were limiting the areas in which these patients were cared for. Although the institutional data collected provides an initial inventory of the resources available to the nurses at each hospital, they are not adequate to provide an answer to the relationship between the availability of hospital resources and the nurses’ knowledge and attitudes.

Limitations

The study is limited by using self-report instruments that can lead to response bias. Nurses may give answers they think are expected and not what they truly believe, in order to answer favorably and present a positive perspective. Friedrich and Verive (1991) support this concern as they identify that participants can easily answer the question as they think it should be answered, and their answer may not be a true reflection of their attitude. This effect was limited by assuring participants, in the initial letter, of their
anonymity and confidentiality. Hopefully, participants were encouraged to be honest in their answers without fear of reciprocity. The letter stated that the goal in identifying any deficit in knowledge or attitudes was to increase the pain resources available to the health care team within their hospital setting.

This study is nonexperimental and descriptive in nature. Thus, examining the findings and the differences between the medical and surgical groups is the focus of this study, yet cause and effect cannot be assumed. The qualitative nature of two open-ended questions permits data analysis limited to the grouping of like categories or themes related to the information gathered.

Another limitation of this study is related to the measurement of attitudes. It is well documented in the literature that the measurement of attitudes cannot be said to be accurate (Brunier et al., 1995; Davis, 1988; Tourangeau & Rasinski, 1988). Although the Likert scale uses a continuum on which to answer and allows for the possibility of making fine discriminations in points of view, it also allows for the potential for response bias. Response bias results from the impact of some people consistently expressing their attitudes with strong conviction while others never choose the strong opinion and always express the moderate views (Polit & Hungler, 1985). The Likert scale also grants a degree of subjectivity in its scoring. Using a 5-point Likert scale, each statement has two right answers with the assumption being that the answer which is strongly felt is more right. This assumption that the person who answers strongly is more knowledgeable or has more positive attitude may not be accurate. The response bias may influence the answer.
The descriptive nature of the study does not allow for any interpretation of causal relationships. The study findings can be generalized only to the hospital units in this sample and not to the general population. Contributing to this limitation is the small size of the medical group in comparison to the surgical group. Although the researcher attempted to overcome the effect of the summer vacation on the response rate by continuing the study for a month, this timing may have contributed to the low response rate in the medical group. This difference adds to the difficulty of generalizing the results to the general population of nurses.

The use of nonparametric tests also limits the study results. Nonparametric tests were used due to the inability to assume a normal distribution and due to the small sample sizes within each of the medical and surgical groups in the hospitals. Nonparametric tests are believed to be not as strong as parametric tests and offer less flexibility in the analysis. Although a normal distribution and larger sample sizes would have been preferred, it is believed that parametric tests should have little effect on the outcome (Polit & Hungler, 1985). Parametric tests were completed on the knowledge scores and resulted in negligible differences.

Implications

Nursing Education and Practice

The results from this study support what has been identified in the literature for decades. Nurses lack the knowledge and hold inappropriate and often outdated attitudes toward pain and pain management. This problem has great implications for the clinical
setting and the administration which oversees it. As is evident through the instruments used in this study, difficulties exist in separating which pain management issues are purely related to knowledge and which are purely attitude. For this reason, changes must be considered in both areas in order for any changes in pain management to be successful. A two-fold approach should be taken for changes in pain assessment and management to occur. Nurses not only need a sound body of knowledge from which to draw, but they also need positive attitudes toward pain in order to implement their new knowledge in practice. Benoliel (1995) suggests that attitude change begins to occur with each success a nurse experiences. Increasing the potential for successful encounters with patients in pain should help build strong positive attitudes. This can be accomplished through patient focused rounds, daily supports of application of pain related knowledge and ongoing pain related topic discussions to work out individual patient pain problems.

Combined with this improved knowledge base and positive attitudes the nurse requires administrative and institutional resources to support implementation. A pain education program for nurses and patients needs to be developed to ensure that the patient can be assured good pain management. Benoliel (1995) identifies three components to this pain program. He states that the institution needs a good team effort with a strong degree of coordination, an education program, and clear accountability and support from administration. A study by Patterson (1997) describes the project components implemented by a community hospital to implement a pain management education system. The importance of collaboration of many individuals and steps in a pain program are identified.
The initial priority should be to create a pain program for nurses and other health care disciplines. An interdisciplinary team should be developed to begin the following process (a) initiate a needs assessment, (b) develop a thorough plan, (c) oversee that plan through implementation, and (d) monitor whether changes occur. By setting up an interdisciplinary team, many of the gaps which may not be seen by a discipline specific team would be identified in the early phases. The interdisciplinary team would also provide the mesh of discipline-specific expertise required to view pain management from many different perspectives. Staff as well as team members need to identify the appropriate persons to be involved in the education program as well as the necessary support to follow the health care workers throughout the program implementation. Ultimately the supports required for ongoing consultation with the health care team would be initiated in the clinical setting.

Knowledge has been identified as the basis from which changes in pain management must begin. Studies have described pain management programs from two hours long to 40 hour didactic programs. A study by McNaul, McLees, Belyea and Clipp (1992) found that nurses who received a video in combination with a letter and personal contact for pain education were significantly more likely to use a pain scale than those who received combinations of letter, personal contact, and poster. Some of the key elements which Wallace et al. (1997) have identified as essential in a pain educational program are divided into structure, process, and outcome categories. The structural components include personnel resources, interdisciplinary involvement and support, and financial and resource support. The process components include the use of a conceptual
framework for the program, planned reinforcement, and a program that is of adequate length to meet the needs. Lastly the study identifies the outcomes as the changes attributed to the educational efforts. These include measuring documentation improvements, measurement of the improvement in knowledge level and measurement of changes in patient satisfaction and report of pain. The researchers recommend that essential to the success of the educational program is the inclusion of patients and family in an educational process of their own. As this study has discussed the patient is being expected increasingly to have a responsibility for participating in pain management. If not well educated, the success of the patients’ efforts may be undermined.

Clinical studies demonstrate that nurses undermedicate patients (Carr, 1990; Diekmann & Wassem, 1991; Slack & Faut-Callahan, 1991; Watt-Watson 1987). The nurses in this study supported the finding of insufficient medication in the vignettes but did not indicate this as a problem for caring for patient’s in pain. This needs to be a focus of nursing education to ensure that nurses not only understand their knowledge deficits but also envision the impact of their actions and decisions on the management of pain.

Much of the literature supports an interdisciplinary approach to education. This would support new learning and re-shaping of attitudes that would be tested in the clinical setting. It would also facilitate more experiential learning for the members on the team, as they would utilize each other as supports for patients’ pain issues. Key resource nurses could be identified as occurred at the City of Hope National Medical Center (Ferrell et al. 1993). Through this program nurses have been provided with the knowledge, attitudes, and support required to provide effective pain management to the
patient. They have been allocated the resources required to uphold their accountability to the patient in pain.

The hospitals which participated in this study exist within a common region. Along with the interdisciplinary approach, an interhospital approach would provide a greater support network. The development of a regional pain program would increase the depth of expertise and supports available to the program. Each hospital could take from the structure developed by the group and add to their individual hospital characteristics without losing any guidelines and principles. The hospitals in the region studied are unique in their specialties and can therefore inject current theory and practice related to pain from their specialty. Patients from the surrounding community will have a better opportunity to become familiar with pain practices and options with the similarities in the pain program between hospitals. Costs in development of patient education brochures and programs may also be less expensive with a combined approach.

Many studies have shown an improvement in nursing knowledge through educational programs (Dalton et al., 1996; Ferrell et al., 1993; Myers, 1985). However, not all have been able to demonstrate the resulting change in practice behaviors. In order to assist and encourage the implementation of the newly acquired knowledge, attitudinal changes must also be supported. This study and many others have illustrated that although nurses know they should ask the patient about their pain and believe what the patient says, many do not practice this behavior. The nurses need to recognize the attitudes and misbeliefs they hold in order to understand the impact of these negative attitudes on pain management. Dillard (1993) identifies a number of characteristics of
attitudes. One such characteristic is termed "flexibly stability." This implies that attitudes remain the same within a given scope. If altered, the person tries to reestablish the former attitude. This notion supports the need for ongoing educational and clinical support for the nurse involved in pain management.

Changes in the formal education provided to graduating nurses also require revamping. As indicated by researchers (Ferrell et al., 1993; Graffam, 1990) who examined the knowledge and attitudes of the faculty members as well as the written content in the textbooks, many misbeliefs and inappropriate attitudes are reinforced in the nursing classroom. Implementation of a curriculum which accurately teaches about addiction and the complexities of pain, with an intent of dispelling fears and misbeliefs, is required. A curriculum must encompass the realm of pain from its many dimensions and identify a variety of methods to properly assess and manage it. This improvement in pain curriculum would arm graduate nurses with a strong foundation on which to build clinical expertise.

Educators in the clinical setting and the formal classroom setting have been encouraged to use the publications available to provide accurate information about pain. Pre-established curriculum about many different topics of pain are available on the Internet and through research centers like the May Day Pain Resource Center. The AHCPR (1992) has developed booklets about specific aspects of pain for clinicians and patients which are available free of charge for use in the clinical or classroom setting. Standards and guidelines for pain assessment and management are available in the literature to be implemented into practice. The implementation of a pain program should
be made a priority in all health care institutions considering the lack of knowledge, outdated attitudes undermanaged pain documented in the literature. The use of an abundance of available, accurate, well written, free literature about pain and pain programs should make this easier.

Institutions should begin the process of developing the clinical resources required to ensure good pain outcomes for their patients. Without the support and commitment from the administration, the educational sessions necessary to begin a pain program would most likely falter. This study touched on the institutional structures that Ferrell et al. (1995) feel are important in providing a foundation for any pain program. Many studies have identified the impact and importance of institutional supports, identifying that pain is not only a patient or clinical problem, but an issue which is central to the institution and its philosophy of caring for patients. As such, quality improvement processes should be developed to measure pain outcomes within the institution which include documentation, adherence to policies and procedures, and data received from patients and clinicians providing patient care.

Recommendations for Further Study

Implications exist for further research as well. Studies are beginning to look at how nurses are making decisions about pain. With the increased autonomy of the nurse and an improvement in pain knowledge, this step appears to be appropriate for many institutions who have implemented pain programs and continue to realize deficiencies in pain management.
Combined with this, an instrument should be used to address barriers that impede the ability of nurses to implement research into practice. This instrument has been developed by Funk, Champagne, Wiese and Tournquist (1991) and provides a scale which looks at four factors that nurses encounter when implementing research into practice. These factors include barriers related to the nurse, setting, research, and presentation. The instrument includes a list of the most commonly identified barriers, and problems are categorized into four factors. Prioritizing the barriers identified by nurses would assist institutions to develop processes to facilitate a pain program. This support could minimize the occurrence of problems in implementing pain programs. The findings from a large scale study of the barriers encountered could be used to understanding practice better, leading to the identification of a very important piece of the puzzle of managing pain.

Studies identifying institutional resources should also be pursued. Essential resources to have in place at the beginning of a program need to be identified, as well as those required at different stages of implementation. For instance, the importance of the formal educational component of the pain program could be highlighted in the beginning phases, and shorter sessions to reinforce teaching and deal with problems be included later.

Longitudinal studies examining changes in knowledge, attitude, and behavior over time are also needed. While instability in staffing make this difficult, the use of large numbers could provide valuable data regarding the impact of educational pain programs over time. Evaluation of the clinical outcomes related to changes in formal
education needs to be ongoing. Measurement of the barriers that impeded the transfer of knowledge and attitude into practice, using an instrument such as the one developed by Funk et al. (1991), would provide valuable information about changes in knowledge and attitude as well as the many barriers that may be impacting those changes. The degree to which nurses feel better prepared to be a responsible participant in the assessment and management of pain also needs to be assessed.

Patient education is another avenue for further study. Patient education is a large component of caring for the patient in pain. The most important time frame for these education classes and the most effective teaching medium need to be determined. Whether patients feel prepared to be major players in their pain assessment and management also needs to be evaluated.

Telemedicine has been an increasingly valuable mode of communication for sharing important clinical research findings. This venue is accessible to nurses as well as clinical administrators and an efficient, cost effective manner of interacting with many hospitals in a wide area at one time. Sharing the findings from this study on a Telemedicine channel would be valuable for other nurses as well as a good introduction to a discussion as to what other hospitals are developing or have implemented. This type of network would assist smaller and more remote hospitals to share in a broader pool of resources, thus increasing the opportunity to establish a pain program at their hospital.

These are challenges which need to be researched further in order to evaluate the impact of increased efforts toward pain management. Efforts are strong in increasing the knowledge of patients, families, nurses and doctors, but unfortunately these are not being
implemented across the health care spectrum. If evidence is what is needed in each institution in order to justify increasing pain resources to formulate a hospital wide pain program, then the instruments used in this study to measure knowledge and attitudes will provide that data. There are many other instruments in the literature as well. The findings of this study demonstrate that no significant differences exist between medical and surgical nurses’ knowledge and attitudes toward pain and pain management. Both groups of nurses lacked the knowledge required to effectively care for patients in pain and had inappropriate attitudes toward pain. This study did show that nurses who attended three or more pain educational programs over the last two years did have more positive attitudes to pain. These data work together to suggest that strategies are required to change the nurses’ knowledge and attitudes toward pain. Educational programs are a good place to begin the journey to providing the patient with better pain management.

Conclusions

In summary, the investigation into the knowledge and attitudes of registered nurses toward pain has revealed many of the same findings that have been previously identified in the literature. The major findings include:

1. Nurses use outdated attitudes and have a limited knowledge base in many areas of pain.

2. No differences were noted between nurses who care for patients in the medical setting and the surgical setting.

3. Hospitals are implementing different resources for the nurses to care for
patients in pain. Although a start, these resources appear to be fragmented in approach and not consistently utilized.

4. Nurses attending three or more educational sessions on pain have more positive attitudes about pain.

The study has identified areas for further investigation in the realm of pain assessment and management. It has also identified the urgent need for education, in the areas of pain assessment and management, to become a minimum starting foundation for the development of an interdisciplinary pain program. If we are to provide effective pain management, we need to begin with education. This will feed the need for further ongoing supports in the clinical setting.
References


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personnel treating pain in the terminally ill. The Mount Sinai Journal of Medicine, 45, 561-579.


Patterson, L. (1997). Implementation of a pain management program in a


Appendix A

Demographic Data

Nurse Information

1. Education Level: R.N. __ B.Sc.N. __ M.N.Sc. __ Other _______________________
   
2. Years of nursing experience: _____ years
   
3. Years working on this unit: _____ years
   
4. Gender: F __ M __
   
5. Age: _____ years
   
6. Attendance at Pain Continuing Education Sessions in the last two years:
   
   none ___ 1-2 ___ >3 ___
   
7. Experience with patients having pain: yes ___ no ___
Appendix B

Clinical Information Letter

Title: A Survey of Knowledge and Attitudes of Registered Nurses Toward Pain

Researchers: Kelly Lumley-Leger, R.N., B.Sc.N. (905) 275-6685 (Home)
            Dr. Richard Bond, R.N., Ph.D. (Faculty of Education, Brock University)

Dear Registered Nurse:

I am a graduate student at Brock University. In order to complete the degree of
Master of Education, I am undertaking a study with Dr. R. Bond, to investigate the
knowledge and attitudes of the Registered Nurse toward pain. I am specifically looking
at the nurses working in the general medical and surgical units. I am writing this letter to
request your participation in this study.

Participation in this study is voluntary and is by no means part of your
professional duties at the hospital. I would like to explain this study so that you can
decide if you are willing to take part. Your participation takes 20 - 25 minutes and
involves answering two questionnaires and one patient vignette studying (a) knowledge
about pain assessment and management, (b) attitudes about pain, and (c) a vignette
presenting two patients in pain.

An envelope will be provided for you to return the questionnaires once complete
in a designated drawer that is only accessible by the researcher. Your responses to the
questionnaires will be completely confidential; each questionnaire is coded to ensure
your name is not associated with your answers. You are free to withdraw from the study
at any time and to refuse to answer questions.

Thank you for your consideration of participating in this study. Your input is important. The results of the study will be available in the spring of 1999, from your manager. If you have any questions or comments concerning the study please feel free to contact me.

Yours truly,

Kelly Lumley-Leger, R.N., B.Sc.N.
Appendix C

BROCK UNIVERSITY DEPARTMENT OF EDUCATION (University Letterhead)

Informed Consent Form

Study Title: A Survey of Knowledge and Attitudes of Registered Nurses Toward Pain.

Researchers: Kelly Lumley-Leger, R.N., B.Sc.N. (905) 275-6685 (Home)
             Dr. Richard Bond, R.N., Ph.D. (Faculty of Education, Brock University)

I understand that this study in which I have agreed to participate will investigate the knowledge and attitudes of Registered Nurses toward pain assessment and management. The study will identify if there is a difference in pain knowledge and attitudes between nurses who work on general medical and surgical units. The institutional resources available to the nurses in regards to pain will also be studied. As a voluntary participant, I understand that the study involves two questionnaires and one case vignette and will take approximately 20 - 25 minutes to complete. Upon completion, I am to enclose the questionnaires in the self-addressed, stamped envelope provided, seal it and place it in the mail.

I understand that my participation in this study is voluntary and that I may withdraw from the study at any time and for any reason without a penalty. I understand that there is no obligation to answer any question/participate in any aspect of this project that I consider invasive. I understand that all personal data will be kept strictly confidential and that all information will be coded so that my name is not associated with my answers. I understand that only the researchers named above will have access to the
raw data.

Participant Signature ____________________________ Date: ____________________________

If you have any questions about your participation in the study, you can contact me, Kelly Lumley-Leger, at (905) 275-6685 or on my pager (number to be determined prior implementation of study), Dr. Richard Bond, at 1-905-688-5550, extension 4295.

Feedback about the results will be available late in the spring of 1999 from your manager. Thank you for your help. Please take one copy of this form with you for further reference.

I have fully explained the procedure of this study to the above volunteer.

Researcher Signature ____________________________ Date: ____________________________
Appendix D

Nurses' Knowledge of Pain Issues Survey

PLEASE CHECK WHETHER THE FOLLOWING ARE TRUE (T) OR FALSE (F):

1. Assessment of pain by the health team is more valid than the patient's. T_F

2. Severity and duration of pain have a direct relationship with the pain stimulus. T_F

3. Patients should not be encouraged to develop a high tolerance for pain. T_F

4. Placebos are helpful in the treatment of pain problems, including:
   a) acute pain T_F
   b) chronic pain T_F
   c) terminal illness T_F

5. Psychogenic pain really hurts and is not the same as malingering. T_F

6. Maligners consciously produce their pain symptoms and are rare patients. T_F

7. Oral morphine is as effective as parenteral morphine with equianalgesic doses. T_F

8. There is no advantage to heroin, orally or parenterally over the current opioids. T_F

PLEASE FILL IN THE BLANKS

9. What percentage of patients with organic pain become addicted to opioids while in hospital? ____%.

10. What is the duration of action for:
   a) morphine _____ hours
   b) meperidine (Demerol) _____ hours
   c) codeine _____ hours
   d) Dilaudid _____ hours
PLEASE CIRCLE THE OPTION(S) WHICH YOU THINK ARE CORRECT. YOU MAY CHOOSE MORE THAN ONE OPTION.

11. Which drug(s) at equianalgesic doses has the most side effects? i.e., addiction, respiratory depression.
   a) morphine
   b) meperidine
   c) codeine

12. What is the drug of choice for terminally ill patients?
   a) meperidine
   b) morphine
   c) heroin
   d) codeine

13. What is the purpose of PRN in giving pain medications?
   a) prevent tolerance and addiction
   b) decrease respiratory depression
   c) decrease overdose liability
   d) for breakthrough pain when titrating opioids

14. Placebos can be given to patients:
   a) to see if the pain is real
   b) who require more medication than necessary
   c) who are “difficult”and always complaining that treatments don't work
   d) in controlled research where the patient is told the possibility of a placebo
15. A patient experiencing chronic pain may demonstrate changes in:
   a) pulse, respiration, blood pressure
   b) mood status
   c) activity level
   d) sleep and eating habits

16. Patients in hospital should usually expect to tolerate:
   a) no pain
   b) minimal pain
   c) moderate pain
   d) severe pain

17. What is the most difficult problem(s) for you in nursing a patient in pain, either acute or chronic?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

18. How are you assessing pain in your clinical setting?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Appendix E

Attitude to Pain Control Scale

PLEASE INDICATE YOUR OPINION OF EACH OF THE FOLLOWING STATEMENTS BY PLACING A TICK IN THE APPROPRIATE BOX.

<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly agree</th>
<th>agree</th>
<th>unsure</th>
<th>disagree</th>
<th>strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patients should expect to suffer some pain.</td>
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<tr>
<td>2. Anxiety increases the perception of pain.</td>
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<tr>
<td>3. Nurses are better qualified and more experienced to determine the existence and nature of the patient's pain than is the patient himself.</td>
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<tr>
<td>4. The person who uses his pain to obtain benefits or preferential treatment does not hurt as much as he says he does and may not hurt at all.</td>
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</tr>
<tr>
<td>5. Talking and listening to patients can reduce their pain.</td>
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<td></td>
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<td></td>
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<tr>
<td>6. A person's pain can always be detected by their behavior and physiological signs.</td>
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<tr>
<td>7. Some ethnic groups can tolerate more pain than others.</td>
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<tr>
<td>8. All real pain has an identifiable physical cause.</td>
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<td></td>
</tr>
</tbody>
</table>

10. Care should be taken when giving controlled drugs post-operatively as patients become easily addicted.

11. It is best that people should not know what is happening to them as this may cause anxiety.

12. All persons can and should be encouraged to have a high tolerance for pain.

13. What the patient says about his pain is always true.

14. Nurses can determine the amount of pain a person will suffer from the knowledge of their surgery.

15. Analgesics are always the best way of reducing pain.

16. Nurses most often underestimate the severity and existence of a patient's pain.

Appendix F

Andrew and Robert Vignette

DIRECTIONS: PLEASE SELECT ONE ANSWER FOR EACH QUESTION.

Patient A

Andrew is 25 years old, and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80, HR = 80, RR = 18. On a scale of 0 - 10 (zero = no pain/discomfort, 10 = worst pain/discomfort), he rates his pain as 8.

1. On the patient’s record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew’s pain:

<table>
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<tr>
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<th>10</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>No pain</td>
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<td>Worst pain</td>
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</tbody>
</table>

2. Your assessment above, is made two hours after he received morphine 2 mg IV. Half-hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2 as an acceptable level of pain relief. His physician’s order for analgesia is “morphine IV 1 - 3 mg q1h PRN pain relief”. Check the action you will take at this time.

_____ a) Administer no morphine at this time

_____ b) Administer morphine 1 mg IV now

_____ c) Administer morphine 2 mg IV now

_____ d) Administer morphine 3 mg IV now
Patient B

Robert is 25 years old, and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80, HR = 80, RR = 18. On a scale of 0 - 10 (zero = no pain/discomfort, 10 = worst pain/discomfort), he rates his pain as 8.

1. On the patient’s record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew’s pain:

<table>
<thead>
<tr>
<th>0</th>
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<tr>
<td>No pain</td>
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<td>Worst pain</td>
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</tbody>
</table>

2. Your assessment above, is made two hours after he received morphine 2 mg IV. Half-hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2 as an acceptable level of pain relief. His physician's order for analgesia is “morphine IV 1 - 3 mg q1h PRN pain relief”. Check the action you will take at this time.

- a) Administer no morphine at this time
- b) Administer morphine 1 mg IV now
- c) Administer morphine 2 mg IV now
- d) Administer morphine 3 mg IV now

Appendix G

Institutional Assessment

PLEASE ANSWER YES OR NO TO THE FOLLOWING QUESTIONS.

Documentation

1. Do admission forms identify patients with problems of pain?
2. Are there flow sheets to document the ongoing assessment of pain?
3. Are there flow sheets to document the progress toward adequate pain relief?
4. Are there care plans/protocols/critical paths that identify standard ways to manage different types of pain?
5. Are there protocols that identify strategies to manage analgesic induced side effects (e.g., nausea, sedation, constipation)?
6. Are there medication forms that are readily available and easy to use that support appropriate analgesic administration principles? (e.g., PCA standards)

Educational Efforts

1. Are basic pain principles part of the skills that new nurses are required to demonstrate competency in before caring for patients?
2. Are there opportunities for case presentations or rounds on patients with pain problems?
3. Are there expert preceptors/role models in pain that are readily available for staff on the unit?
4. Is there an interdisciplinary pain consultation service that will evaluate complex pain problems?
5. Are there educational resources for patients/families about how to participate in achieving adequate pain relief?

6. Are nurses supported and encouraged to attend pain conferences?

Quality Indicators

1. Is pain considered an important aspect of care that is monitored through a Quality Improvement Process?

2. Are there policies/procedures that direct the appropriate use of pain technology (e.g., PCA pumps, epidural infusions)
