MEDICAL NURSES’ KNOWLEDGE AND ATTITUDES REGARDING PAIN MANAGEMENT

by

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Abstract

Unrelieved pain is one of the most common complaints by medical patients and can greatly affect their health outcomes and quality of life. Medical patients account for a large portion of hospitalized older patients and pain is widespread among this population. Nurses spend the most time with patients and are well placed to assess and effectively manage the patient’s pain, however nurses’ poor knowledge and attitudes regarding pain management can significantly hindered patients’ pain management outcomes.

This study explored nurses’ knowledge and attitudes regarding pain management on the medical units in a hospital located in Vancouver, BC. There were 75 nurses who completed the “Pain Questionnaire.” The study revealed moderate (69.04%) knowledge and attitudes about pain management from the knowledge and attitudes survey regarding pain. Registered nurses and bachelors prepared nurses were found to have statistically significant higher pain knowledge levels and attitudes. Knowledge deficits were found in the areas of underestimation of pain, pharmacology, addiction, withdrawal, substance abuse, and cancer related pain. Nurses have been shown to attribute less pain to patients suffering from chronic conditions than to those suffering from acute conditions. Pain associated with diabetes and renal diseases, chronic conditions often found in aging adults, were viewed the most negatively. A focus on changing the culture of care, and towards evolving the nursing practice to one of more accountability for pain management, will enhance nurses’ knowledge and attitudes regarding pain, and most importantly will reduce patient pain and improve quality of care.
Preface

An ethics certificate of expedited approval was obtained from the UBC/Providence Health Care Research Ethics Board for this study. The UBC/PHC REB number is H11-03236.
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Chapter 1

Introduction

Pain is one of the most distressing symptoms for both patients and caregivers (Gloth, 2001). While there are technological advances, extensive research, and evidenced based practice guidelines to manage pain adequately (Registered Nurses Association of Ontario (RNAO), 2002a; Bell & Duffy, 2009; JCAHO, 2011), patients continue to suffer from inadequate pain management (Herr, Titler, Schilling et al., 2004; Horgas & Yoon, 2008). Older adults are more likely to suffer from pain than younger people (Miller, 1996) and one in five adults suffer from chronic pain (Moulin, Clark, Speechley, et al., 2002.) Pain affects almost one quarter of older adults living at home (Statistics Canada, 2008) and more than 80% of nursing home residents (Helme & Gibson, 2001). Older adults in hospitals and long term care facilities experience pain almost on a regular basis, which severely limits their quality of life (Statistics Canada, 2008).

Unrelieved pain is one of the most common complaints by patients and can greatly affect an individual’s function, mood, sleep, and relationships with family and loved ones (Gureje, Von Korff, Simon, & Gater, 1999; Moulin, Clark, Speechley, Morley-Forster, 1999; Schopflocher & Jovey, 2010). The economic impact of pain in Canada costs more than $6 billion per year in direct health costs and an astounding $37 billion per year in productivity costs related to job loss and sick days (Phillips & Schopflocher, 2008).
The prevalence of chronic pain increases with age (Blyth March, Barnabic et al., 2001), making chronic pain more evident in the older population as comorbid conditions multiply (Ross & Crook, 1998; Smith, Elliott, Chambers, et al., 1999; Cohen-Masfield & Lipson, 2002). For older adults, including those in the acute care hospitals, more than 80% have pre-existing chronic medical conditions such as arthritis, cancer, diabetes and obesity that contribute to their different sources and types of pain (Horgas & Yoon, 2008). By the year 2031, between 8.9 to 9.4 million people, representing almost a quarter of Canada’s total population will be made up of seniors (aged 65 or older), which will nearly double their population of 13% in 2005 (Statistics Canada, 2008). With a rapidly aging population, there is a need to focus on treating their pain appropriately.

This study will explore medical nurses’ knowledge and attitudes regarding pain management in an acute care Vancouver hospital. The thesis is structured into five chapters. The first chapter describes the background to the problem and the significance to nursing. The introduction chapter provides the purpose of the study and research questions to best identify the aim of the study. Chapter Two provides the review of the literature regarding pain management and the background of pain physiology and pathology. It further describes pain specifically in the medical unit and factors that have influenced nurses’ knowledge and attitudes towards pain management. The current factors and barriers to poor management, as well, the myths and misconceptions of pain held by nurses are reviewed. Chapter Three reviews the research design, methodology, and ethical considerations. Chapter Four, the results chapter, describes the analysis of the data to answer the research
questions. Chapter Five provides the discussion of the results, implications for nursing practice, and recommendations for future research.

1.1 Significance of the Problem

Despite the evidence based practices and guidelines surrounding pain management in older adults (RNAO, 2002), pain continues to be inadequately treated. Medical patients account for a large portion of hospitalized older patients and pain is widespread among this population (Dix, Sandhar, Murdoch, MacIntrye, 2004; Whelan, Jin & Meltzer, 2004; Sawyer, Haslam, Daines, & Stilos, 2010). However health care professionals are often focused on the diagnosis and disease process, leaving medical patients to suffer in pain (Liu, So, & Fong, 2008). Many studies have focused on pain management in specialty areas such as surgery and intensive care (Watt-Watson, Stevens, Katz et al., 2004; Wang & Tsai, 2010) while the non-surgical areas have been over looked. In contrast to surgical and post anesthetic care units (PACU), many medical units do not have guidelines, performance measures, or mandated pain scales (Franco, Sprung & Trentman, 2005; Helfand & Freeman, 2009; Royal College of Anesthesitics, 2010), which contributes to decreased pain awareness in these units. Resources for acute pain services and pain specialist are few and are often reserved for the postoperative or critically ill patient (Jovey, 2008). Medical patients who suffer pain often have their pain disregarded by health care professionals and receive inadequate pain management compared to non-medical patients.
1.2 **Significance to Nursing**

Nurses spend the most time with patients and are well placed to assess and effectively manage the patient’s pain. Nurses play a key role in on-going pain assessment, initiation and evaluation of pain treatment (Lewthwaite, Jabusch, Wheeler et al., 2011). However, several studies (Ferrell, McGuire, & Donovan, 1993; Gibbs, 1995; McCaffrey & Rolling Ferrell, 1995; Brunier, Carson, & Harrison, 1995; McCaffrey & Ferrell, 1997; Liu, So, & Fong, 2007; Drayer, Henderson, Reidenbery, 1999; Lewthwaite et al., 2011) have shown that nurses’ inadequate knowledge and attitudes regarding pain management have significantly hindered patients’ pain management outcomes.

Older persons in hospital who experience an exacerbation of their pain from existing chronic conditions will be at greater risk for impairment if pain is not well managed (Inouye, 2006). Older adults face additional challenges of optimal pain management when clinicians’ lack knowledge and hold poor attitudes regarding pain and aging (Herr et al., 2004; Coker, Papaioannou, Turpie, et al., 2008; Chapman, 2010). It is hoped that raising awareness on this issue can reduce the older person’s suffering and improve their care. Nurses’ knowledge and skill, collaboration with the interdisciplinary team, and education for patients and families will create optimal pain management care in older adults.
1.3 **Purpose**

The purpose of this quantitative exploratory study is:

1. To explore nurses’ knowledge and attitudes regarding pain management in medical units;
2. To access the nurses’ assessment, documentation, and intervention regarding patients’ in pain;
3. To explore the factors that influence nurses’ knowledge level and attitudes regarding pain;
4. To discover nurses’ perceived notions regarding patients’ condition/diagnosis of age and how that may influence their decision-making regarding pain management.

The study presented in this thesis is intended to add to the current body of literature, provide evidence, inform inquiry and stimulate interest in pain management among nurses and other health care professionals in the medical setting.
1.4 Research Questions

The following research questions have been asked to address the objectives of the study:

1. What are the medical nurses’ knowledge levels and attitudes regarding pain management in older adults?
2. After reading a written description of patients in pain, what are the nurses’ assessment, documentation, and intervention surrounding a patient in pain?
3. What are the factors influencing nurses’ knowledge level and attitudes regarding pain?
4. What are the preconceived notions regarding a patient’s diagnosis or age that influence nurse’s decision making regarding the management of pain?

1.5 Summary

This chapter described the challenges and difficulties that surround pain management in older adults. The next chapter will review the current literature of nurses’ knowledge and attitudes of pain management, and the misconceptions towards pain and aging.
Chapter 2

Review of the Literature

The review of the literature focused on the prevalence of pain in the medical setting, specifically older adults who typically are patients in these units. Further support of the research will present the attitudes and misconceptions towards pain and aging. A large concentration is a review of nurse’s knowledge and attitudes regarding pain in the medical unit. Pain pathophysiology, pain pathways, pharmacology, and pain analgesic practice are also reviewed.

2.1 Pain Pathophysiology

2.1.1 Pain Defined

Everyone has experienced pain and will suffer from more pain in the future. Pain management can provide relief and improve function, but is often misunderstood and can mean different things to different people. The International Association for the Study of Pain (IASP) describes pain as always being subjective and each person learns the use of the word pain through past injury or experiences (IASP, 2011). A definition of pain widely used in nursing describes the subjective nature of pain was first coined by Margo McCaffrey as “whatever the experiencing person says it is, existing whenever she/he says it does” (McCaffrey, 1968, p. 95).

Pain is subjective in nature and there are multiple levels of pain. “Total pain”, is the consideration of physical, emotional, psychosocial and cognitive influences on pain (Jovey, 2008). Memories, emotions, and interpretation of pain input make pain
a unique, subjective, sensory experience (Jovey, 2008). Melzack (1996) described the “neuromatrix theory” of pain, which originate in the brain, is comprised of a large network of neurons and has specialized neurons for sensory events such as injury to the body (Melzack, 1996). The body experiences different qualities and experiences, which is determined genetically or based on sensory outputs that can product output or in some cases abnormal or no output. For example, in phantom leg pain, the brain attempts to send out messages to move the absent limb and send out abnormal patterns that result in shooting pain (Melzack, 1996). It is important to treat the problem of pain by the correct diagnosis. However treatment of pain is not always as simply having surgery to remove an appendix for the treatment of abdominal pain or increasing the current pain medication. As there are various causes of pain, sometimes unknown, it often results in various classifications of pain and their appropriate management.

2.1.2 Acute Pain

Acute pain is recent in onset, transient in nature and can last from several minutes to several days and usually goes away as the healing occurs (usually less than 30 days) (Jovey, 2008).
2.1.3 Nociceptive Pain

Nociceptive pain refers to pain caused by direct stimulation of peripheral nociceptors (Jovey, 2008). It is usually localized and responds to treatment (Horgas & Yoon, 2008). Examples of nociceptive pain are surgery, trauma from falls or a finger prick.

2.1.4 Chronic Pain

Chronic pain “persists beyond the usual course of an acute illness or healing time of an injury (usually beyond three to six months)” (Jovey, 2008, p. 14). It is often accompanied by “emotional symptoms such as depressive symptoms, but objective physiological signs may sometimes be absent” (Jovey, 2008, p. 14). Chronic pain “is often associated with functional loss, mood and behavior changes, and reduced quality of life” (Horgas & Yoon, 2008, para. 6). Pain management may not mean a cure from the pain, but rather a way for long-term management of living with the condition, and minimizing the effects pain can cause on functioning and normal activities of life.

2.1.5 Neuropathic Pain

Neuropathic pain refers to pain caused by damage to the peripheral or central nervous system (Hogar & Yoon, 2008). It is usually “more diffuse and less responsive to analgesic medications” (Hogar & Yoon, 2008, Background section, para. 5). Examples of neuropathic pain that are problematic for the older adults
include: diabetic neuropathies, cerebrovascular accident and chemotherapy treatment for cancer (Moulin, 2008).

2.2 Pain in Older Adults

Pain both acute and chronic continues to be the most commonly reported problem for hospitalized older adults, suffering from pain (Horgas & Yoon, 2008). Fifty percent of older adults have reported experiencing chronic pain and 80% of nursing home residents reported experiencing pain (Helme & Gibson, 2001). Chronic pain tends to be constant, ranging from moderate to severe intensity and is often multifactorial and multifocal (Brattberg et al., 1996). A Canada wide health survey of adults 65 to 74 years old in the community with chronic pain revealed that 28% of were in mild pain, 55% reported moderate pain and 17% were in severe pain (Miller, 1996; Moulin, 2002).

A longitudinal study of 806 older adults (80 years or older) was surveyed during their hospital admission and up to one year after hospitalization. The researchers found 45.8% (n = 369) of patients reported pain sometime during their hospitalization, 19% experienced moderate or extremely severe pain and 12.9% were dissatisfied with their pain control (Desbiens et al., 1997). Two months later, 49% continued to experience pain of the 614 patients that responded and 16.8% reported extremely severe pain. One year later, pain was reported for greater than one half (53.8%) of the patients (223 patients out of 416 patients who responded), and 17.5% of patient’s reported extreme pain. Desbiens et al., (1997) study reveals
that the oldest patients are suffering from pain frequently and are dissatisfied with their pain control.

The prevalence and severity of pain is likely higher than reported as older adults usually under report their pain because of misinterpretation of pain language (for example using “hurt” instead of “pain”) and difficulty using pain scales (IASP, 2011). Although older adults have reduced sensitivity to noxious stimuli due to age related changes in the function of the nociceptive pathways, it does not mean their pain is less severe (Helme & Gibson, 2011; IASP, 2011). Therefore it is essential that clinicians working with older adults recognize their pain.

Many older adults have multiple medical conditions; more than 80% of older adults have chronic medical conditions that are associated with pain (Horgas & Yoon, 2008). Furthermore, the prevalence of chronic pain conditions is associated with increasing age. For example, arthritis affects just 4% of people under age 45, while 45% of people aged 65 years and older are affected by the condition (Miller, 1996). Similarly people 65 years old or older have higher rates of heart disease (17% vs. 1%) and diabetes (11% vs. 1%) compared to those less than 45 years of age (Miller, 1996). Other common examples of chronic pain conditions associated with advanced age are; osteoarthritis, back pain, cerebrovascular accident, chronic bronchitis/emphysema, stomach/intestinal ulcers, fibromyalgia, cancer and peripheral vascular disease (IASP, 2010). Understanding the epidemiology of older adults regarding their disease and illness process is important to help clinicians understand the extent of pain in older adults.
2.3 Impact of Pain in Older Adults

Pain has many health implications for older adults and can severely limit their quality of life. It has been shown that the secondary conditions related to pain can lead to depression, suicide risks, anxiety, weight loss, sleep disturbance, all burdens that can improve with effective pain management (AGS Panel, 2002).

The relationship between depression and chronic pain has been well documented (Kroenke & Price, 1993; Magni, Marchetti, Moreschi et al., 1993; Arnstein, Caudill, Mandle et al., 1999). Patients with pain are more likely to be depressed than patients without pain, and have double the risk of suicide (Tang & Crane 2006; Cheatle, 2011). The prevalence of depression may be enhanced in the older adults due to their multiple chronic pain comorbidities and sometimes the symptoms of depression and chronic pain may overlap or co-exist (Cohen-Mansfield & Marx, 1993). Compared to other diseases of the heart and lung, chronic pain has been associated with the worse quality of life (Schopflocher, Jovey et al. 2010).

Inadequate management of pain from surgery such as hip replacement can lead to increased confusion, slower recovery and poorer function (Morrison et al., 2003). Uncontrolled pain can significantly decrease the rate of healing, increase the rate of complications and compromise immune function (MacLellan, 2009; Elcigil et al., 2011). If pain is left untreated it can lead to huge financial costs including longer hospital stays, increased rates of re-hospitalization, increased outpatient visits, and may severely complicate a patient’s recovery (Huang, 2001).
2.4 Attitudes and Misconceptions Toward Pain and Aging

Older adults are undertreated for pain, which is often due to misconceptions from both health care providers and older adults themselves that pain is a normal part of aging (Coker et al., 2008). The reasons for the under treatment of pain are multifaceted and often related to the attitudes and beliefs toward pain and aging (Kaasalainen et al., 2007). First, older patients may underreport pain due to their perceptions of pain and pain medications. Significant life events such as a death of a spouse, retirement from their job, or their loss of independence, may alter their views on pain (Helme & Gibson, 2001). The psychosocial issues may play a factor in the influence and expression of an older adult’s pain. Older adults may view themselves as stoic and describe themselves growing up in a generation that endures pain (Kumar & Allcock, 2008) and thus may hesitate to reveal their pain level, when in fact it could be a warning sign of injury or disease (Stoller, Forster, & Portugal, 1993). Patients may also have concerns about the potential side effects of opioids such as constipation or may feel that pain is humiliating and a burden to their family and friends (Kumar & Allcock, 2008; Chapman, 2010). Coker et al., (2010) found that older patients did not want to bother their nurses with pain requests due to their perception and attitudes of nurses. Older patients who perceived their nurse as busy, inconsiderate or inpatient were reluctant to speak to them regarding their pain (Yates, Dewar & Fentiman, 1995). Researchers also found that patients were reluctant to report pain and feared that opioids were addictive or too dangerous (Kaasalainen et al., 2007; Eligcil et al., 2011).
Second, older adults are more likely to suffer from illness such as delirium or dementia. Almost half of hospitalized adults are older than 65 years old and up to 56% of these will experience delirium, either at admission or at some point during their hospital stay (Inouye, 2006). Pain in a cognitively impaired older adult may decrease their ability to communicate pain or they may express themselves differently (Taverner, 2005). Coker et al., (2010) conducted an exploratory mixed methods design to evaluate the nurse’s barriers to optimal pain management in older adults on an acute medical unit in Canada. Nurses described language barriers, cognitive impairment and sensory problems as common patient related barriers to pain management in older adults. Older patients, especially those with cognitive impairment may have difficulty with completing the zero-to-ten numeric pain rating scale (Herr, Bjoro, Steffensmeier, et al., 2006; Coker et al., 2010).

Health care professionals are often reluctant to use opioids in older adults for fear of precipitating confusion and delirium (Jovey, 1998). A study of older patients who had undergone surgery for hip fractures, revealed that postoperative delirium was correlated with high pain scores regardless of whether or not they were cognitively intact or impaired (Lynch et al., 1998). Another common fear is opioids will precipitate falls in older adults. A study of 1000 disabled older women revealed that falls risks increased with pain and risk for falls were lower for women who used all types of analgesic’s daily (Leveille, Bean, Bandeen-Roche et al., 2002). Cognitive impairment and poor attitudes about older adults can be challenges to achieving optimal pain management.
2.5 Prevalence of Pain in Patients in the Medical unit

Older adults make up a significant portion of hospitalized patients, and an even higher percentage of the population of medical units (Dix et al., 2004; Whelan et al., 2004; Gregory & Haigh, 2008; Sawyer, Haslam, Daines, & Stilos, 2010). Dix et al., (2004) captured the prevalence and severity of pain of patients \( n = 1594 \) in a United Kingdom hospital of four major specialties (medicine, surgery, orthopedics, elderly care). General medicine made up one third of the sample \( n = 503 \) and had the second highest number of patients who rated their pain on the numerical scale as 6 or more out of a 0-10 point scale. The older care unit had the highest percentage of patients with intermediate or severe pain, while surgery was rated third on the list. On the medical unit, 43% of patients were experiencing pain and 12% reported unbearable pain. Only 16% of the medical patients indicated that pain relief was a top priority, 39% wanted more information about pain relieving measures, and 29% wanted fewer side effects from the pain medication. Patients on all the units reported unbearable pain, however medical patients experienced the highest percentage of unbearable pain (12.5%) compared to surgical (10.5%) and orthopedic (5%) patients. This research illustrated that, not only can pain occur in any unit in the hospital, it is occurring in medical patients and they are suffering from even greater amounts of pain than surgical or orthopedic patients, where pain is typically prevalent (Dix et al., 2004). A similar prospective cohort study of hospitalized patients \( n = 5584 \) in US found a considerable percentage (59%) of medical patients were experiencing pain, with 28% experiencing severe pain.
(Whelan et al., 2004). Interestingly, 6.7% of patients thought their physician did not do anything to relieve the pain, while almost 18% of patients thought that their physician did less than everything they could. It is clear that pain continues to be a common occurrence in medical patients and they are suffering from unnecessary discomfort. All patients, regardless of ward specialty, should be considered as high risk for pain (Whelan et al., 2004).

Prior studies have included medical patients with other areas of specialty to study the prevalence of pain (Melotti, Samolsky-Dekel, Ricchi, & Chiari, 2004; Sawyer et al., 2010). A large Canadian teaching hospital (Sawyer, et al., 2010) conducted a cross sectional survey of patients from surgery ($n = 74$), medicine ($n = 20$), and long term care ($n = 4$) in the year 2006 and again in 2007. Disturbingly, after the study was repeated, the study found the percentage of those in pain to be much greater in 2007 than in 2006 (84% vs. 71%). Also in the 2007 study, a higher percentage of patients had experienced severe pain in the past 24 hours that significantly interfered with their general activity, walking, mood, relationships, sleep, and enjoyment of life (26% vs. 14%). However in the 2007 study, patients were quite satisfied in their overall pain treatment as the longest time to receive pain medication ranged from 11 to 30 minutes on average. Although 41% of patients reported there was a time when the pain medication did not relieve the pain and they requested something different or more to relieve the pain, the mean time to change the dose was between 1 to 2 hours. Of the 15 patients who were not satisfied with their pain management, these patients commented about staff
knowledge deficits and indicated that they wished to know more about the pain medication they received and its side effects.

Melotti et al., (2004) conducted a similar study in a large urban Italian hospital. Of the 516 medical patients, 49% experienced pain, and 24% experienced severe pain. This is comparable to a 45% prevalence rate of pain in the surgical wards in this hospital. These cross sectional hospital wide surveys (Melotti et al., 2004; Sawyer et al., 2010) indicate attention must be given to the medical ward.

2.6 Nurses’ Knowledge and Attitudes Regarding Pain

Coker et al., (2008) reported the pain management practices for older adults ($n=78$) in six Canadian acute medical care units. The mean age of the patients participating was 78 years old and 34% were identified as cognitively impaired by nurses. They were admitted for various medical conditions (myocardial infraction, congestive heart failure, cellulitis, falls, chronic obstructive pulmonary disease, pneumonia), which are not necessarily associated with high levels of pain. The findings discovered nurses were unaware of the patients’ pain, even though 70% of the patients’ were in pain. Kaasalainen and Crook (2004) conducted a study of 130 long term residents with varying levels of cognitive impairment and found that the reliability of verbal reports decreases with cognitive impairment and was only reliable in people with mild to moderate impairment. Older patients also tend to underreport their pain due to their perception and attitudes of pain (Kaasalainen et al. 2007; Coker et al. 2010). Findings revealed that 70% of patients were experiencing pain, and only 57% reported pain to their nurse. A chart audit
discovered that although more than one half the patients reported pain, almost one half of the patients did not receive an analgesic even though pharmacological medication was ordered as needed (Coker et al., 2008). Furthermore, only a third of the documentation related to pain assessment was completed in the past 24 hours and only two reports were related to non-pharmacological interventions (repositioning and warm blankets). According to the panel of pain experts, only 41% of patients had appropriate pain management documented (Coker et al., 2008). Pain is a persistent problem in these medical units as a gap of knowledge, skill, and attitudes of the staff were evident.

Despite clinical guidelines on pain management, assessment of acute pain in older adults was found to be inadequate (Herr, Titler, Schilling et al., 2004; Chapman, 2010). Medical records of older adults from acute care settings ($n = 709$) found nurses ($n = 179$) did not routinely assess patients for pain or pain location every 4 hours (Herr et al., 2004). Five percent of patients during the most acute stage of pain following admission were not assessed. Although the majority (97.7%) of nurses agreed patients should be routinely assessed every 4 hours, 30.8% of nurses reported that they sometimes routinely assess cognitively impaired adults while almost 70% of nurses reported they always routinely assess pain in cognitively impaired adults. Interestingly most of the nurses (93.6%) believed that using pain assessment scales was the preferred method to assessing older adults. However only 41.9% of nurses reported they always used a pain rating scale and the remaining 58.1% reported only using the pain scale sometimes. During the first 24 hours, 37% of all patients were assessed every four hours, and in the following 24
hours, only 30% of patients were assessed adequately for pain. This study demonstrated that, pain was not being assessed and reassessed according to current evidenced based practice guidelines (JCAHO, 2000). An interview of nursing home residents, found only 25% (19 out of 77) were asked to participate in their pain management by their health care provider (Picker Institute Europe, 2007). Nurses reported that the greatest challenge was difficulty communicating with patients and poor assessment of pain behaviours (Herr et al., 2004). Nurses need to regularly assess older adults’ pain, especially those with cognitive impairments and include them in their pain management (Chapman, 2010).

Today, the lack of knowledge and attitudes towards pain has not improved. Liu et al., (2008) investigated nurses’ knowledge levels and attitudes (n = 143) in a medical setting in Hong Kong and the factors that may influence their knowledge and attitudes. The study revealed poor knowledge and attitudes regarding pain management, as the nurses’ average score on the Knowledge and Attitudes Survey Regarding Pain (KASRP) was 48%. When analyzing specific questions, there were discrepancies between the participants’ attitudes and practices. For example, while 71% believed self-report was the most accurate indication of pain, only 1.4% believed that patients never over-reported the amount of pain they had. The questionnaire contained two similar case studies with patients reporting the same level of pain, but expressed discomfort differently. Nurses believed the patient who expressed more grimacing was suffering more. Furthermore, 71% of participants believed that the patient should endure the least amount of pain possible, however 64% would advise patients to use non-pharmacology techniques alone instead of
concurrently with pain medications (Liu et al., 2008). The nurses in this study showed a deficit in pain knowledge and misconceptions about pain management.

A study of 514 nurses from a large Canadian tertiary hospital that specialized in medical, surgery, oncology, emergency room, and outpatient units, found more than 94% of nurses accepted the patient’s self-report of pain (Brunier et al., 1995). Self-report is the most accurate and reliable indicator for pain, making it crucial for patients to communicate their pain and even more essential for nurses to ask and respond appropriately to the patient’s pain (RNAO, 2002a). Nurses and physicians may distrust their patient’s subjective experience, or doubt marginalized or less powerful groups (Peter & Watt-Watson, 2002). Interestingly, in 1995 McCaffrey and Ferrell found 25% of nurses thought patients’ overrated their pain.

Pain management has traditionally been a role of the anesthetists, however acute care pain teams have been established as the multi-disciplinary approach has been found to be more effective for optimal pain management (Brown et al., 1999). Gregory and Haigh (2007) captured the range of knowledge and attitudes on pain management on a multi-disciplinary health care team, consisting of registered nurses (n = 192), non-registered health care assistants (n = 101), physicians (n = 36), pharmacists (n = 20), and physiotherapists (n = 58) caring for medical patients in an acute care UK hospital. Overall the multi-disciplinary medical staff had greater pain knowledge with an overall mean score of 82.5%. However when analyzing non-registered nurses, 80% of non-registered health care assistants relied on vital signs and behavior to verify patient’s statement of severe pain and 40% have never used a pain scale. In addition, only 20% of health care assistants found regular medication
to be more effective than “as needed” medication and all non-registered nurses thought patients couldn’t sleep in pain. RNs fared much better, with an average score of 72.6 % on their pain knowledge and attitudes, which may be because 36% attended pain management education. RNs results were comparable to physiotherapist and pharmacist (75-80%), while physicians scored the highest (82.5%) (Gregory & Haigh, 2007).

### 2.7 Misconceptions Over Opioid Use

There continues to be concerns about opioid use as Gregory and Haigh, (2007) found that over a third of RNs were reluctant to administer opioids and 80% of non-registered nurses discouraged it and thought opioids should be avoided in the older adults. This is consistent with other research, as nurses lacked knowledge in pharmacology and answered poorly on pharmacology question on the KASRP by McCaffrey and Ferrell, (2008). (Brunier et al., 1995; Liu et al., 2008; Elicigil et al., 2011; Lewthwaite et al., 2011). In another large study of 400 nurses by McCaffrey et al., (2000) there was a large tendency for nurses’ personal opinion of opioids to influence their choice of analgesia.

In a study undertaken by Elcigil et al., (2011) about 15% (n = 17) of the nurses were reluctant to give opioids for fear of addiction and respiratory depression. Most patients taking opioids do not become addicted to them, which is characterized by loss of control, using drugs despite the consequences, and obsession with obtaining and using the drugs. However patients can develop
dependence to the drug if stopped abruptly (Schneider, 2011). Nurses were found to misunderstand the difference between dependence and addiction (McCaffrey & Ferrell, 1995).

2.8 Pain Analgesia Practice

Sawyer et al. (2010) found that physician’s prescribing practices for medical and surgical patients appeared to differ in a large Canadian hospital. While the surgical patients were given round the clock medication and 80% (58 out of 73) received PRN analgesics, only 50% (12 out of 24) medical and long term patients were prescribed as required (PRN) analgesics, and only 14% of the possible PRN orders were administered in the previous 12-24 hours. Furthermore, different classes of analgesics (opioids, non-opioids, NSAID, gabapentin) were prescribed much less frequently in medical patients than in surgical patients.

A study of nursing home patients (n = 4003) with cancer reported daily pain (Bernabei, Gambassi, Lapane, et al., 1998). This study found that of those with pain, 16% received a non-opioid, 32% received a weak opioid, and only 26% received a strong opioid such as morphine. Patients 85 years and older were least likely to receive morphine and or any other analgesics. Despite the frequency of pain, more than a quarter of patients did not receive any analgesic agent (Bernabei, et al., 1998).

Evidence for hesitation of giving opioids was found in a study of postoperative coronary artery bypass grafting (CABG) surgery in an academic
teaching hospital in Toronto. Although a top rated Canadian hospital, only 33% (67 out of 202) of the ordered dose of pain medication was given, with approximately 50% of patients continuing to report moderate to severe pain on post-operative day five, just prior to discharge (Watt-Watson et al., 2004). In this study, analgesics given by nurses were inadequate, despite patient’s high pain intensity ratings. Sawyer et al., (2010), found 50% of medical patients were prescribed PRN orders for analgesia, yet only 14% of the possible PRN orders were administered.

2.9 Factors Influencing Knowledge and Attitudes in Pain Management

2.9.1 Education

Using the KASRP, as an instrument, Brunier et al., (1995) and Lewthwaite et al., (2011) conducted studies in large, urban tertiary hospitals in Canada, to explore registered nurse’s knowledge and attitudes they found a positive correlation between higher position, education and knowledge of pain. Clinical educators, clinical nurse specialists, and nursing unit directors scored significantly higher than RNs, and nurses with masters or bachelor degrees scored significantly higher than diploma prepared nurses (Brunier et al., 1995). Lewthwaite et al., (2011) conducted a descriptive study in a Midwestern Canadian hospital with nurses on a variety of units including medicine and found 49% (n = 324) achieved a score of 80% or more on the KASRP, which was significantly positive in younger nurses, with less work experience and a bachelor’s education. Liu et al., 2008 (n = 143) found education level was insignificantly associated with increased knowledge and good attitudes.
about pain management. Furthermore, nurses with more professional clinical experience ($p = 0.006$), were able to apply their knowledge to daily practice ($p = 0.032$) had a higher percentage score on the KASRP than those with less clinical experience (Liu et al., 2008). Liu et al., (2008) attributed low scores on the KASRP to lack of formal pain education in nursing school, and suggested that pain knowledge is developed in the clinical setting.

Research found nursing knowledge and attitudes regarding pain seems to be improving in Canada. Brunier et al., (1995) found a KASRP mean passing score of 41%, while Lewthwaite et al., (2011) had a mean passing score of 79%.

Interestingly, a survey of Canadian university professional programs of medicine, nursing, dentistry, pharmacy, and veterinary, found two-thirds of these facilities could not identify specific teaching on pain in the undergraduate curriculum, with veterinarian students having two to five times more education about pain management than students of nursing and medicine (Watt-Watson, McGillion, & Hunter, 2007).

### 2.9.2 Area of Specialty

Nurses working in specialty areas, such as oncology, have been found to have greater knowledge of pain management compared to nurses on the general units (Brunier et al., 1995; Al-Shear et al., 2011). The results are not usual as there is a greater emphasis on pain management in the oncology and surgical populations (Brunier et al., 1995). In contrast, Brown et al., (1999) found nurses ($n = 246$) working in various units in a hospital in USA revealed no statistically significant
difference in the KASRP scores based on clinical specialty or practice setting. However, the response rate was poor (26 out of 1000) and the mean KASRP score was 65%, significantly limiting the data. Yet, the data recognized that inadequate knowledge in pain management continues to exist, even though most of the nurses' rated their pain knowledge as good (Brown et al., 1999). Prevalence of pain in medical units continues to be high, which identifies problems related to inadequate knowledge and misguided attitudes towards pain management (Dix et al., 2004; Whelan et al., 2004; Gregory & Haigh, 2008; Sawyer, Haslam, Daines, & Stilos, 2010).

2.9.3 Organizational Barriers

Despite the common occurrence of acute pain and the huge impact pain has on the individual and the economy, the resources dedicated to pain resources and treatment in Canada are insufficient. Aside from major teaching hospitals, few hospitals have Acute Pain Services (APS) or Advanced Practice Nurses (APN) specializing in pain, and the wait times for admission to interdisciplinary pain management programs can be years in some provinces (Jovey, 2008).

The shortfalls and resources are even more prominent in the medical units, where for decades the assumption has been that in-patients medical units have their pain well managed compared to surgical in-patients (Sawyer et al, 2010). The establishment of the APS has clearly made postsurgical pain and trauma a priority, while seemingly abandoning medical patients. In 1990, UK multidisciplinary acute pain teams were established primarily for “pain after surgery” strengthening the link between surgery and pain, while passing over all other areas of the hospital.
(Royal College of Anesthetists, 2010). Although the college has proposed liaison with other units and health care teams, they have mandated that all PACU staff be trained in basic pain management and be able to use protocols, while only an individual staff member in the non-surgical clinical areas are designated as competent to provide safe and effective pain management (Royal College of Anesthetists, 2010). In Canada, similar APS and education have focused on post-operative care and with anesthesia staff working primarily with PACU staff (McMaster University, 2011). Educational efforts to bring change not in the immediate care of the APS have been slow and it would be unusual to find a member of the APS working in the medical setting, unless requested for a consultation.

In a large USA study involving twenty-five hospitals, it was found that patient’s had significantly lower pain levels in hospitals with an APS than in hospitals without an APS (Miaskowski, Crews, Ready, et al., 1999). One of the largest studies conducted in Canada involving fifty-six university-teaching hospitals, found multidisciplinary team approaches and on-going staff rounds have been vital for communication and patient outcomes (Zimmerman & Stewart, 1993). Seventy five percent of nurses indicated that lack of access to professionals who practice specialized pain treatment methods and difficulty in contacting or communicating with the physician were significant barriers to pain management (Elicigil et al., 2011). Many nurses had a strong knowledge base, however they were challenged by organizations that did not support their knowledge (Wilson, 2007). For example, nurses often recognize a patient is in pain, but may lack decision-making skills related to pain management specifically in medications (Wilson, 2007). Although
health care providers expressed the importance of pain management to their patients, only 50% of medical units and 80% of surgical unit had a PRN order of opioid analgesic (Sawyer et al., 2010).

Research has indicated that not having pain management policies, procedures, or guidelines are a barrier to the nurses’ abilities to carry out optimal pain assessment and management (Coker et al., 2010; Elicigil et al., 2011). The APS has led to important changes in procedures and policies, including special categories of nurses such as clinical nurse specialist (CNS) and nurse practitioners (NP) who have prescribing abilities. These nurses positively influence pain management practice within the institutions by providing supports for medical and nursing staff, through education, and assistance implementing standardized clinical pain guidelines (Musclow, Sawhney, & Watt-Watson, 2002). As well, APN’s specializing in pain described their role as positively contributing to continuity of care, committing to quality improvements, providing nursing consults for difficult pain management issues, and acting as a patient advocate (Musclow et al., 2002). Evidence-based approaches, standardized orders and protocols are essential to ensuring consistent standards of care, upholding the criteria of professional practice, and to improving patient care outcomes (Canadian Nurses Association, 2011).

Physicians may act as a barrier to the nurses’ ability to better manage a patient’ pain. In a study undertaken by Van Niekerk and Martin (2003), more than one-third of the nurses indicated that insufficient cooperation by physicians and inadequate prescriptions of analgesic medications added to their difficulty to optimal pain management. Numerous studies have reported high patient to nurse
ratios, which added to the difficulty in finding sufficient time for health teaching patients (Puls-McColl, Holden, Buschmann, 2001; Van Niekerk & Martin, 2003; Elcigil et al., 2011). Initiation and reinforcement of pain education can occur at many times during a patient’s hospital stay. Nurses provide pain education during a patient’s hospital stay to prevent and recognize the side effects of analgesic and enforce good pain management techniques. Without organizational and colleague support of nurse’s knowledge to make decisions and affect change, nurses can lead to feelings of tension, learned helplessness and low self-efficacy (Wilson, 2007).

2.10 Summary

There has been extensive investigation of knowledge and assessment practices of pain management in nursing, specifically in the surgical area. Despite the number of older adults suffering from cognitive impairment and chronic conditions, resources to support their pain management, such as clinicians, research and education have been poor (Sawyer et al., 2010). Acute pain services are mainly reserved for postsurgical patients and rarely do they assess medical patients, unless requested (Dix et al., 2004; Jovey, 2008). Pain is a significant component of patient care and nurses have a responsibility for ensuring patient comfort, especially for older adults who have comorbid conditions, fewer supports, and at a higher risk for delirium (Miller, 1996; Inouye, 2006; IASP, 2011). As stated in the Code of Ethics (CNA, 2008), nurses need to relieve pain and suffering that includes appropriate and effective pain management to allow the patients to live with dignity. Nurses have a critical responsibility of treating acute pain; to not only decrease suffering and
maximize healing, but to minimize the chance of acute pain developing into chronic pain. Therefore, nurses need to carefully examine their knowledge, attitudes, and barriers that influence everyday decision-making in pain management to improve the quality of care of older adults on the medical units.
Chapter 3

Methodology

The purpose of this section is to describe the research design, setting, sampling, data collection, and participant recruitment used in this research study. The data analysis plans and testing of normality, including reliability and validity of the instrumentation are presented in this chapter. Furthermore, the ethical considerations for this study will be discussed.

3.1 Design

A quantitative, descriptive, cross-sectional design guided this research. This study invited all registered nurses (RNs) and licensed practical nurses (LPNs) working on five medical units in a metro Vancouver tertiary care teaching hospital to complete a questionnaire on their knowledge and attitudes regarding pain. The “Pain Questionnaire” (Appendix A, B, C, D, E) was distributed to nurses working on the medical units.

3.2 Setting

A large tertiary teaching hospital in Vancouver was selected as the study site because it is representative of the population of Vancouver. In 2010, B.C. Statistics estimated there were 642,843 people living in Vancouver and 2,328,000 people living in the greater Vancouver area. Vancouver is a very diverse multicultural city, with fifty one percent of residents considered as a visible minority group (Hamilton,
The hospital primarily serves the local community and patients from across British Columbia and Yukon. The diverse and large volume of patients the hospital serves is thought to expose nurses to the complexity of pain that the patients may experience and for which nurses provide care.

The medical units care for patients with various illnesses and conditions such as: gastrointestinal bleeds, anemia, chronic obstructive pulmonary disease (COPD), acute renal failure, hematology, cellulitis, congestive heart failure, Crohn’s disease, ulcerative colitis, diabetes, malnutrition, osteomyelitis, cerebrovascular accident, hypokalemia, and failure to thrive (J. Santucci, personal communication, November 17, 2011) were selected. There are 115 beds for patients, with patient occupancy rate usually of 90% or more at any given time (J. Santucci, personal communication, September 21, 2012). The medical units have one operations leader (manager), five clinical nurse leaders, and two clinical nurse educators.

3.3 Sampling

The hospital was selected to obtain an adequate sample size and be representative of a nursing staff mix of RNs and LPNs, which provide direct nursing care to adults on the medical units. The target sample for this study was approximately 150 regular full time and 40 casual nurses’ employed as medical RNs or LPNs (S. Chutskoff, personal communication, May 14, 2012). In these units, RNs typically worked 12-hour shifts, while LPNs worked 8-hour shifts. The average nurse-to-patient ratio was 1:4 or 1:5 and there were four RNs and two LPNs on each unit, which is consistent across the 24-hour time (J. Santucci, personal
communication, November 17, 2011). One of these medical units had reserved beds for four chronic pain in-patients.

To ensure eligibility the participants were required to meet the following inclusion criteria: i) RNs and LPNs employed and working full time, part-time, or casual at the study site; ii) caring for medical patients and iii) may or may not have had education regarding pain management. Exclusion criteria: nursing students and care aids.

3.4 Instrumentation

The Pain Questionnaire was comprised of three parts: i) Demographic Profile (DP); ii) Knowledge and Attitudes Survey Regarding Pain (KASRP) (Ferrell & McCaffrey, 2008); iii) Clinical Decision-Making in Pain Questionnaire (CDMPQ) (Brockopp, Ryan, & Warden, 2003).

3.4.1 Demographic Profile (DP)

The demographic profile (Appendix B) contained seven questions and was designed by the co-investigator (MW). It requested information regarding the participants: (i) Age; (ii) Gender (iii) Professional qualification (RN or LPN) (iv) Level of education; (v) Years of professional experience; (vi) Attendance at pain management education; (vii) Frequency of caring for patients with pain. The demographic profile was designed to understand the background of the participants when analyzing the variables that may affect their knowledge and attitudes towards pain management.
3.4.2 Knowledge and Attitudes Survey Regarding Pain (KASRP)

The KASRP (McCaffrey & Ferrell, 2008), a 38-item survey tool was modified for this study. The questionnaire contains 20 questions that require true or false answers, 14 multiple-choice questions, and two case studies that measure the variables of knowledge and attitudes in pain management (Appendix C). Two questions regarding pain in children were removed because the participants only cared for adult patients. A pharmacological medication question on Vicodin®, an American trade name was removed to include only the medication dosage and equivalency such as hydrocodone, which is used in the Canadian health care system. The tool was further divided into pharmacologic, non-pharmacologic, assessment, and five items related to cancer pain.

The KASRP also consists of two case studies. They illustrate two patients who describe the same level of pain, however one patient is described as smiling and the other patient is described as grimacing. The participants are asked to then record the patient's pain using a verbal analogue scale with 0 representing no pain and 10 representing the worst pain. The case study evaluated the nurses’ assessments of the patient’s pain intensity and the resulting pharmacologic intervention. The questionnaire consisted of all closed-ended items.
3.4.3 Clinical Decision-Making Questionnaire in Pain (CDMPQ)

The CDMPQ (Appendix D) designed by Brockopp et al., (2003) was based on the assumption that nurses have preconceived notions about certain individuals and how biases may influence their decision-making regarding pain management. Given that all the patients have the same degree of pain, but with different causes such as; cancer, substance abuse, AIDS, multiple trauma, suicide attempt, renal disease, diabetes, general surgery, chronic pain, laparoscopic surgery or an older adult, the participants had to rate the time and energy they would spend to manage the pain on a scale (1 = little time and energy to 5 = maximum time and energy). Since the medical patient population had various diagnoses, diseases and ages, the CDMPQ survey was thought to be appropriate to capture the degree of bias towards certain patient groups.

Studies have shown that health care providers make treatment decisions based on their pre-conceived notions regarding a patient's socioeconomic status, background, culture (Macpherson, 2009), ethnicity (Mayberry, Mili, Ofili, 2000), and gender (Hoffman & Tarzian, 2001). Studies of HIV/AIDS positive patients (Rintamaki, Scott, Kosenko, et al., 2007; Zukoski & Thorburn, 2009) found health care providers displayed behaviour indicative of the patient's disease from lack of eye contact to refusing to provide treatment. Also as Taylor, Skleton & Butcher (1984) found nurses have been shown to attribute less pain to patients suffering from chronic conditions than to those suffering from acute conditions. Patients' diseases and diagnoses limit pain relief. Brockopp et al., (2003) found nurses would devote the greatest amount of time and energy to patients with pain associated with
cancer, and the lowest amount of energy and time on older patients, or on patients with pain associated with substance abuse.

### 3.5 Ethical Considerations

Ethical approval was obtained from the University of British Columbia Behavioural Research Ethics Board (BREB) and Providence Health Care Hospital Review Board (Appendix H). Research ethics committee and research governance procedures were adhered to.

The study invitation letter (Appendix A) indicated that participation was entirely voluntary and confidentiality and anonymity would be guaranteed. Participants were aware the information from the study was part of a requirement for a master of nursing degree and the research results may be used in nursing publications or presentations.

A separate signed consent form was not needed, as the returned questionnaire was taken as evidence of implied consent (UBC BREB, Section 9.6, 2005). The participants were aware that there would be minimal risk and harm associated with this study. There was no compensation for the study, however a chocolate was included in each pain questionnaire package as a token of appreciation of the participant's time and consideration in the study. Participants were made aware they were not obliged to complete the questionnaire and could stop at any time. The participants were given the contact information of the investigators, UBC Research Information Line, and St. Paul’s Ethics board in case they had further questions or concerns about the study.
No names were collected and participants were asked to put the completed questionnaires into a sealed envelope to maintain anonymity. Questionnaires were numbered for identification and data coding purposes only.

The data from this study were kept in a locked cabinet at the co-investigators (MW) home and data were inputted into the password protected computer for data analysis and only those on the research committee had access to the data. Data was kept in a password protected hard drive kept by the co-investigator and original data stored will be stored in the UBC School of Nursing with the principal investigator for up to five years for accurate and retrievable results required by UBC’s REB policy #85 (UBC REB, 2008). No identifying factors were stored as data.

As a researcher and nurse working at the study site, the co-investigator (MW) made sure that results of the study were anonymous and confidential. The ethical procedure was upheld to help protect the research study, participants, and institutions involved.

### 3.6 Recruitment and Data Collection

Data were collected through paper questionnaires. Questionnaires continue to be used as an effective method of obtaining information from large population participation, particularly from health professionals (Edwards et al., 2002). The manager of the medical unit reported that the nurses do not regularly access their email accounts; therefore paper over email delivery of the questionnaire was seen as the best option to obtaining the highest response rate (S. Chutskoff, personal communications, February 13, 2012).
The questionnaire consisted of a set of documents: An invitation letter (Appendix A), the questionnaire survey (Appendix B, C, D) and additional resources about pain management (Appendix E). The invitation letter, a strategy to increase recruitment (Walonick, 2004), invited participation and described the nature of the study. An “Additional resources” document was provided to encourage on-going learning, as nurses are required to continue professional development to meet the College of Registered Nurses of British Columbia (CRNBC) competency requirements. The “Additional resources” document contained information on nursing associations and interest groups such as Pain B.C., Canadian Pain Coalition, and Canadian Pain Society, these are useful websites that nurses could go to for more knowledge and information on the evolving field of pain. Participants were also able to contact people on the research committee for further information regarding pain.

The data collection period was one month from June 2012 to July 2012. First, the co-investigator obtained support from the manager of the medical unit (Appendix F) and the clinical nurse leader (CNL) of each unit. Advertisements (Appendix G) regarding the research study were posted in the medical wards in places visible to nursing staff.

In each medical unit, two baskets were set up in the nursing boardroom, one basket labeled “Pain Questionnaires” contained the envelopes of blank questionnaires, and the basket next to it was labeled “Completed Questionnaire.” In addition, the pain questionnaire packages were also given, in person, to medical
nurses at their place of work to improve response rates. Completed questionnaires were returned in a provided sealed envelope to ensure confidentiality.

Questionnaires with non-monetary incentive ($OR = 1.19$) were more likely to be returned (Edwards et al., 2002). Therefore, a strategy to increase recruitment was to have chocolate and donuts provided along with the pain questionnaire package.

The co-investigator introduced the study to groups of nurses during nursing report meetings and personally approached medical nurses every one to two days. The co-investigator was able to explain the purpose of the study and clarify any questions. Face-to-face contact was found to be the best approach to achieving the highest rate of return (Badger & Werrett, 2004), and personal contact was found to have a positive effect on response rates for the self-completed questionnaire (Polit & Beck, 2008). Many of the nurses work in different medical nursing units and their shifts vary, so displaying the questionnaire packages in the nursing boardroom had the advantage of maximizing the number of completed questionnaires and allowed the staff to participate on their own time. Returned questionnaires were collected every one to two days.

Consent was assumed if the nurses completed and returned the questionnaire. There was no deadline date listed on the questionnaire as it has been shown to reduce response rate (McColl, Jacoby, & Thomas, et al. 2001). The pain questionnaires were removed when the response rate dropped to zero after a five-day period. Answers to the questionnaire were posted in the nursing conference room after data collection was complete.
3.7 Data Analysis

The quantitative data from the questionnaire were analyzed using Statistical Package for the Social Sciences Version 20 (SPSS Inc., Chicago, IL). Participants’ responses were coded and inputted into the SPSS spreadsheet. A census survey was conducted on the medical nurses; therefore a power analysis was not conducted. Descriptive statistics were used to determine normality of the data. Statistical significance was set at $p \leq 0.05$. The following describes the analytical process used to investigate the research questions.

3.8 Test to Determine Normality

Before the data were analyzed, the data set was verified and corrected for errors and missing data. Descriptive statistics provided information concerning the normality of the total data ($n = 75$). The skewness was -0.277, slightly negative, which indicated a clustering of scores at the higher end. The kurtosis was 0.071, slightly positive, which indicated more peaked data that was clustered in the centre and longer thinner tails. Distributions are considered perfectly normal if both skewness and kurtosis have a value of zero, which is uncommon in social sciences (Pallant, 2007). Since the kurtosis and skewness in this study were close to zero it was interpreted as reasonably acceptable distributed data.

By comparing the trimmed mean ($M = 26.11$) with the original mean ($M = 26.01$), it showed both numbers were very similar and therefore the extreme scores did not have a strong influence on the mean. Additionally, the mean and median had
almost the same value, a mesokurtic finding, and further indicated a normal distribution.

The test to assess the normality of the distribution of scores for the total KASRP sample was determined by the Kolmogorov-Smirnov statistic, where a non-significant \((p \leq .05)\) result indicates normality (Pallant, 2007). The Kolmogorov-Smirnov value for the KASRP score was 0.097. In the Q-Q plot, a reasonable straight line was seen and the de-trended normal Q-Q plot found no real clustering of points, with most points collecting near the zero line, both suggested a normal distribution.

The histogram appeared normal with a slightly positive skew, while the boxplot found no outliers from the scores on the KASRP. Overall, from examining the histogram, boxplot, and descriptive statistic, the data met the assumption to use parametric tests for scoring on the KASRP.

The CDMPQ final scores also met the assumptions to use parametric tests, as the Kolmogorov-Smirnov value was 0.237; there were no outliers; the Q-Q plots demonstrated a straight line; and the de-trended normal Q-Q plot found no real clustering of points.

### 3.9 Reliability

#### 3.9.1 KASRP (Ferrell & McCaffrey, 2008)

In the study by Ferrell & McCaffrey (2008), stability of the instrument was established by re-testing the KASRP in a group of staff nurses \((n = 60)\). Test re-test reliability found the correlation coefficient to be acceptable \((r > 0.80)\). Internal
consistency reliability was established with a Cronbach alpha coefficient of 0.70 (Ferrell & McCaffrey, 2008).

### 3.9.2 CDMPQ (Brockopp et al., 2003)

A sample of 29 nurses that completed the CDMPQ, found a good re-test reliability, resulting in a correlation coefficient value of 0.84 (Brockopp et al., 2003). The Cronbach’s alpha coefficient in this study was 0.92, suggesting excellent internal consistency.

### 3.10 Validity

#### 3.10.1 KASRP (Ferrell & McCaffrey, 2008)

Since its development in 1987, researchers have extensively tested the KASRP on nurses and other health professionals, such as physiotherapists and physicians (McCaffrey & Ferrell, 1994; Brunier et al., 1995; Wilson, 2007; Ferrell & McCaffrey, 2008, Wang & Tsai, 2010; Lewthwaite, et al., 2011; Al-Shear et al., 2011). The instrument has been used as a pre-test and post-test evaluation for educational programs and pain education courses, and has undergone psychometric testing.

The contents in the KASRP included current standards of pain management from the American Pain Society, World Health Organization, and the Agency for Health Care Policy and Research. The construct validity of the KASRP was confirmed by comparing the scores of nurses with various levels of expertise, student nurses, new graduate nurse, oncology nurses, specialty nurses, and senior pain experts. A higher score was found with greater nursing expertise (Ferrell & McCaffrey, 2008).
3.10.2 CDMPQ (Brockopp et al., 2003)

Based on literature and quality improvement data it has been consistently shown that preconceived notions exist towards patients in nine diagnosis categories and towards older adults (Brockopp et al., 2003). Five nursing pain management experts established content validity. The questionnaire was tested on 157 new graduates and experienced nurses working in medical-surgical, critical care; as well 265 nursing students from all four years of a university bachelor's nursing program were included (Brockopp et al., 2003).

Patients with the following diagnoses: cancer, substance abuse, attempted suicide and older adults were selected for the CDMPQ because they were patients generally seen on the units and evoked preconceived notions (Brockopp, Downey, Powers et al., 2004).

3.11 Analysis of Research Questions

The following section describes the process and data analysis used to address each research question. The demographics of the nurses were also analyzed to determine frequency, percentage, mean, and standard deviation (Table 1).
3.11.1 Research Question 1: What is the pain knowledge level and attitudes of nurses within select medical units in an acute care tertiary hospital in Vancouver?

This research question required descriptive analysis and the investigators determined it would be best addressed using scores on the KASRP. The mean, standard deviation (SD), range on the KASRP were analyzed. The frequency and percentage were used to analyze the distribution of the data among the nursing characteristics. The distributions of scores and frequency for the KASRP are displayed in Table 2.

Questions on the KASRP were evaluated individually to determine areas of strengths or gaps in knowledge. This has been presented in table form (Table 3) in order of the least correct responses to the most correct responses. The questions related to the older patients were examined to determine areas for improvement.

3.11.2 Research Question 2: After reading a written description of patients in pain, what are the nurses’ assessment, documentation, and intervention surrounding a patient in pain?

This question was analyzed by assessing the KASRP case studies (McCaffrey & Ferrell, 2008). This case study was able to evaluate the nurse’s assessment, documentation and intervention surrounding two very similar patients. The case studies portrayed two patients who described their pain level as 8 out of 10 on the numerical pain scale, however one patient was smiling and the other patient was grimacing. The physician ordered analgesia, “morphine IV 1-3mg q1hr PRN pain
relief” for both patients. The nurses were asked to assess the patient’s pain based on their assessment, document the patients’ pain on numerical pain scale from 0 to 10, and determine the appropriate pain medication intervention. Overall, the data analyzed the frequency and percentage of each response, displayed in table format (Table 5 and Table 6). RNs and LPNs were analyzed separately due to different scope of practices regarding administering IV medications.

3.11.3 Research Question 3: What are the factors influencing knowledge level and attitudes regarding pain?

This question explored the impact demographics played on the scores on the KASRP. Age and education of nurses were analyzed using one-way between-groups analysis of variance (ANOVA). The independent sample t-test was used to analyze gender, professional qualification of the nurse, and attendance at various types of pain education. Pearson’s correlation was used to describe the strength and direction of the relationship between years of clinical experience and scores on the KASRP.

3.11.4 Research Question 4: What are the preconceived notions regarding a patient’s diagnosis or age that influence nurse’s decision making regarding the management of pain?

This question was descriptive in nature and was analyzed by obtaining the mean, range, standard deviation, and percentage each participant chose to spend the most time and energy managing the pain of a certain patient’s
condition/disease. The information is displayed in Table 6 for each patient’s condition, and the amount of time and energy a nurse would choose to spend managing their pain. The percentage of participants who would expend the maximum time and energy on a patient’s pain (5, on a 1-5 scale) are displayed in Chart 1.

3.12 Summary

The methodology section described the design and procedure used to capture the medical nurses’ knowledge and attitudes regarding pain. The purpose of this section was to describe the study site, description of the medical nurses, and how recruitment was achieved. The data procedure and protection of human subjects were also described. The following chapter will describe the results and data analysis of the study.
Chapter 4

Results

This chapter describes the demographics of the participants, response rate, and the results of the knowledge and attitudes regarding pain questionnaire. Results will be presented using charts, tables, and figures. Analysis to determine statistical significance of knowledge and attitudes scores by demographic variables will also be presented.

4.1 Response Rate

A total of 145 pain questionnaire packages were delivered across the five medical units, and 83 questionnaires were returned, a response rate of 57%. Of the returned questionnaires, eight participants failed to complete the questionnaire or had left pages unanswered (question 18 to 22 from the KASRP and the CDMPQ) and therefore were withdrawn from the study, resulting in 75 participants, a final response rate of 52%. Of the remaining data that fit the criteria, there was a 96% ($n = 72$) completion rate for the KASRP section and a 93% ($n = 70$) completion rate for the CDMPQ section. Figure 1 outlines the recruitment process for the data collection and the response rate.
Figure 1

Flow Diagram of Participant Recruitment

Recruitment
Targeted Sample
Medical Nurses
(N=190)

Contacted
manager of
medical unit

Contacted
CNL of 8A

8A Completed
Questionnaires
(n=12)

8A Completed
Questionnaires
(n=12)

Contacted
CNL of 7A

7A Completed
Questionnaires
(n=21)

7A Completed
Questionnaires
(n=21)

Contacted
CNL of 7B

7B Completed
Questionnaires
(n=19)

7B Completed
Questionnaires
(n=19)

Contacted
CNL 7C

7C Completed
Questionnaires
(n=16)

7C Completed
Questionnaires
(n=16)

Contacted
CNL of 7D

7D Completed
Questionnaires
(n=15)

7D Completed
Questionnaires
(n=15)

Total Response
Rate
57% (n=83)

Incompleted
Questionnaires
(n=8)

Total Completed
Questionnaires
(n=75)

Note: CNL = clinical nurse leader
It is generally recognized that obtaining a high response rate with nurses is challenging due to their limited time and busy shift work patterns. In a review of postal surveys for nurses, Ford and Bammer (2009) found the primary reasons nurses did not respond were lack of time or losing the questionnaire, despite the intention to complete it. Other reasons for non-response by health care professionals were perceived lack of relevance to their practice (Edwards et al., 2002), the time required to complete the questionnaire, and concern about question bias (Murphy, 1993). Similar questionnaires using the Knowledge and Attitudes Survey Regarding Pain had response rates of 24.9% (Hornbury et al., 2005), 43% (Lewthwaite et al., 2011) and 51% (Brunier et al., 1995). A review of nursing research over the past decade found a response rate of 60% to be desirable across all methodologies (Badger & Werrett, 2005) and response rates lower than 65% were found to be the norm (Polit & Beck, 2008), therefore in this research study, a response rate of 57% can be considered adequate.

### 4.2 Demographic Profile of Nurses (see Table 1)

Out of the 75 participants, 54 (72%) were RNs and 21 (28%) were LPNs, this accurately reflected the population of the medical wards, as the ratio of RNs to LPNs is 4:1. Among the respondents, there were 62 females (82.7%) and 13 (17.3%) males. There were 45.3% \( (n = 34) \) of nurses between the ages of 20 to 29, 32% \( (n = 24) \) between the ages of 30-39, 18.7% \( (n = 14) \) between the ages of 40 to 49 years, and 4% \( (n = 3) \) between the ages of 50-59 years old. The mean number of years of professional experience as a nurse was 5.15 years \( (M = 3; SD = 5.7) \). The
years of experience ranged from new graduate to 23 years. About one-third (32.4%) of the nurses had a year or less of clinical experience and more than half (54.1%) of the sample had three or less of years experience.

Fifty-two nurses (69.3%) had a bachelor’s degree, 21 had a diploma (28%), and two (2.7%) had a doctorate. There were 48 (88.9%) RNs with a bachelor’s degree, 5 (9.3%) had a diploma, and 1 (1.9%) had a doctorate. There were 16 (76.2%) of LPNs with diplomas, 4 (19%) had a bachelor’s degree, and 1 (4.8%) had a doctorate.

About 66.7% (n = 50) of nurses had attended a conference, in-hospital training or workshop in pain management since completing their nursing programs. During a typical work week about half (50.7%) of nurses “always” worked with patients in pain, while 40% (n = 30) of nurses “often” (more than 2 patients) worked with patients in pain. Only one person (1.3%) did not work with patients in pain, and four (6.7%) stated they “occasionally” worked with patients in pain. Table 1 illustrates the characteristics of the sample, attendance of various educational courses in pain, and frequency of caring for patients in pain.
Table 1

Demographic Profile of Nurses

<table>
<thead>
<tr>
<th>Characteristics (n = 75)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of professional experience as a nurse</td>
<td>5.15 (5.71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29 years old</td>
<td>34</td>
<td>45.3</td>
<td></td>
</tr>
<tr>
<td>30-39 years old</td>
<td>24</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>40-49 years old</td>
<td>14</td>
<td>18.7</td>
<td></td>
</tr>
<tr>
<td>50-59 years old</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
<td>82.7</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
<td>17.3</td>
<td></td>
</tr>
<tr>
<td>Professional qualification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>54</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Licensed Practical Nurse</td>
<td>21</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>21</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>52</td>
<td>69.3</td>
<td></td>
</tr>
<tr>
<td>Master’s degree</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td>2</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Attendance at any course in pain management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>25</td>
<td>33.3</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50</td>
<td>66.7</td>
<td></td>
</tr>
<tr>
<td>Frequency of caring for patients in pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Occasionally (1-2 patients)</td>
<td>5</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>Often (3 patients)</td>
<td>30</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Always (&gt; 3 patients)</td>
<td>38</td>
<td>50.7</td>
<td></td>
</tr>
</tbody>
</table>
4.3 Research Question 1: What are the medical nurses’ knowledge levels and attitudes regarding pain management in older adults?

The tool used to address this question was the Knowledge and Attitudes Survey Regarding Pain (McCaffrey & Ferrell, 2008). On average, nurses scored 69.04%, the median was 69.73% and the standard deviation was 11.61. The scores ranged from 34.21% to 94.74%. The distribution of scores for the KASRP is illustrated in Table 2. The largest frequency of participants ($n = 26$, 36%) scored between 70-79%.

Table 2

Distributions of Scores for the Knowledge and Attitudes Questionnaire Regarding Pain

<table>
<thead>
<tr>
<th>Percent Correct</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-100</td>
<td>10 (14)</td>
</tr>
<tr>
<td>70-79</td>
<td>26 (36)</td>
</tr>
<tr>
<td>60-69</td>
<td>19 (26)</td>
</tr>
<tr>
<td>50-59</td>
<td>15 (21)</td>
</tr>
<tr>
<td>Below 50</td>
<td>2 (3)</td>
</tr>
</tbody>
</table>

Note: $N = 72$
The ranking of the least-correctly to most-correctly answered questions of the Knowledge and Attitudes Survey Regarding Pain are presented in Table 3. The questions were examined individually and those related to older adults were further evaluated; these include pharmacology; cancer related pain; and addiction, withdrawal, and substance abuse.

Table 3

<table>
<thead>
<tr>
<th>Rank</th>
<th>N</th>
<th>Question Number</th>
<th>Question</th>
<th>N Correct (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68</td>
<td>28</td>
<td>The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity</td>
<td>11.8</td>
</tr>
<tr>
<td>2</td>
<td>71</td>
<td>23</td>
<td>The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain</td>
<td>23.9</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>18</td>
<td>Oxycodone 5 mg + acetaminophen 325 mg PO is approximately equal to 10 mg of morphine PO</td>
<td>34.3</td>
</tr>
<tr>
<td>4</td>
<td>72</td>
<td>36</td>
<td>The manifestation of the abrupt discontinuation of an opioid, physical dependence</td>
<td>34.7</td>
</tr>
<tr>
<td>5</td>
<td>72</td>
<td>5</td>
<td>Aspirin and other NSAIDS are not effective analgesics for painful bone metastases</td>
<td>38.9</td>
</tr>
<tr>
<td>6</td>
<td>71</td>
<td>33</td>
<td>How likely is it that patients who develop pain already have an alcohol and or drug abuse problem</td>
<td>39.4</td>
</tr>
<tr>
<td>7</td>
<td>71</td>
<td>37A</td>
<td>The action a nurse would take for patient in relaxed manner and reports pain of 8.</td>
<td>42.3</td>
</tr>
<tr>
<td>8</td>
<td>63</td>
<td>9</td>
<td>Promethazine (Phenergan) and hydroxyzine (Atarax) are reliable potentiators of opioid analgesics.</td>
<td>44.4</td>
</tr>
<tr>
<td>9</td>
<td>72</td>
<td>35</td>
<td>The time to peak effect for morphine given orally</td>
<td>52.3</td>
</tr>
<tr>
<td>10</td>
<td>71</td>
<td>21</td>
<td>Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasms</td>
<td>53.5</td>
</tr>
<tr>
<td>11</td>
<td>69</td>
<td>38B</td>
<td>The action a nurse would take for patient in distress and reports pain of 8</td>
<td>53.6</td>
</tr>
<tr>
<td>12</td>
<td>72</td>
<td>6</td>
<td>Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months</td>
<td>54.2</td>
</tr>
<tr>
<td>Rank</td>
<td>N</td>
<td>Question Number</td>
<td>Question</td>
<td>N Correct (%)</td>
</tr>
<tr>
<td>------</td>
<td>----</td>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>13</td>
<td>66</td>
<td>26</td>
<td>Equivalence of 30mg oral morphine given every q 4 hours</td>
<td>57.6</td>
</tr>
<tr>
<td>14</td>
<td>69</td>
<td>11</td>
<td>Morphine has a dose ceiling</td>
<td>59.4</td>
</tr>
<tr>
<td>15</td>
<td>72</td>
<td>19</td>
<td>If the source of the patient’s pain is unknown, opioids should not be used during the pain evaluation period as this could mask the correct diagnosis of the patient’s pain</td>
<td>62.5</td>
</tr>
<tr>
<td>16</td>
<td>70</td>
<td>30</td>
<td>Which medication is useful in the treatment of cancer pain</td>
<td>62.3</td>
</tr>
<tr>
<td>17</td>
<td>71</td>
<td>8</td>
<td>The usual duration of analgesia of 1-2mg of morphine IV is 4-5 hours.</td>
<td>64.8</td>
</tr>
<tr>
<td>18</td>
<td>71</td>
<td>4</td>
<td>Patient’s may sleep in spite of severe pain</td>
<td>71.8</td>
</tr>
<tr>
<td>19</td>
<td>72</td>
<td>24</td>
<td>The recommended route administration of opioids analgesic for patient’s with brief, severe, pain of sudden onset such as trauma or postoperative pain</td>
<td>72.2</td>
</tr>
<tr>
<td>20</td>
<td>74</td>
<td>34</td>
<td>The time to peak effect for morphine given IV</td>
<td>74.7</td>
</tr>
<tr>
<td>21</td>
<td>72</td>
<td>1</td>
<td>Vital signs are always reliable indicators of the intensity of the patient’s pain</td>
<td>76.4</td>
</tr>
<tr>
<td>22</td>
<td>70</td>
<td>25</td>
<td>The drug of choice for the treatment of prolonged moderate to severe pain for cancer patients</td>
<td>75.1</td>
</tr>
<tr>
<td>23</td>
<td>72</td>
<td>2</td>
<td>Patient’s who can be distracted from pain usually do not have severe pain</td>
<td>86.1</td>
</tr>
<tr>
<td>24</td>
<td>71</td>
<td>37</td>
<td>Rate patient’s pain with relaxed state on pain scale</td>
<td>87.3</td>
</tr>
<tr>
<td>25</td>
<td>72</td>
<td>20</td>
<td>Anticonvulsants such as gabapentin produce optimal pain relief after a single dose</td>
<td>88.9</td>
</tr>
<tr>
<td>26</td>
<td>72</td>
<td>32</td>
<td>The best approach for cultural consideration in caring for patient’s in pain</td>
<td>88.9</td>
</tr>
<tr>
<td>27</td>
<td>72</td>
<td>17</td>
<td>Giving a patient sterile water by injection (placebo) is useful to determine if pain is real</td>
<td>90.3</td>
</tr>
<tr>
<td>28</td>
<td>71</td>
<td>38</td>
<td>The action a nurse would take for patient in lying in bed quietly, grimacing and rates pain as 8</td>
<td>91.6</td>
</tr>
<tr>
<td>29</td>
<td>72</td>
<td>7</td>
<td>Combining analgesia that work by different mechanism may results in pain better control with fewer side effects</td>
<td>93.1</td>
</tr>
<tr>
<td>30</td>
<td>72</td>
<td>16</td>
<td>After initial dose of opioid, subsequent doses should be adjusted</td>
<td>94.4</td>
</tr>
<tr>
<td>31</td>
<td>71</td>
<td>22</td>
<td>Narcotic/opioids addiction characteristics</td>
<td>94.4</td>
</tr>
<tr>
<td>32</td>
<td>72</td>
<td>27</td>
<td>When should analgesic for post-operative pain by initially given</td>
<td>94.4</td>
</tr>
<tr>
<td>33</td>
<td>70</td>
<td>31</td>
<td>The most accurate judge of the intensity of a patients pain</td>
<td>97.1</td>
</tr>
<tr>
<td>34</td>
<td>72</td>
<td>29</td>
<td>The most likely reason a patient with pain would request increased doses of pain medication</td>
<td>97.2</td>
</tr>
<tr>
<td>35</td>
<td>72</td>
<td>12</td>
<td>Elderly patients cannot tolerate opioids for pain relief</td>
<td>97.2</td>
</tr>
<tr>
<td>36</td>
<td>72</td>
<td>15</td>
<td>A patient’s spiritual belief on pain</td>
<td>97.2</td>
</tr>
<tr>
<td>Rank</td>
<td>N</td>
<td>Question Number</td>
<td>Question</td>
<td>N Correct (%)</td>
</tr>
<tr>
<td>------</td>
<td>----</td>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>37</td>
<td>71</td>
<td>13</td>
<td>Patients should be encouraged to endure as much pain as possible</td>
<td>98.6</td>
</tr>
<tr>
<td>38</td>
<td>72</td>
<td>10</td>
<td>Opioids should not be used in patients with a history of substance abuse</td>
<td>98.6</td>
</tr>
</tbody>
</table>

*Note: KASRP = Nurses’ knowledge and attitudes survey regarding pain; N = number and percentage of correct answers. Items 1-22, true or false; item 23-36, multiple choice; item 37-38, case scenario.*

### 4.3.1 Older Adults on the Medical Unit

A majority of nurses (97.2%) recognized that older patients were able to tolerate opioids for pain relief. Other questions related to older adults found 97.1% of nurses recognized that patients are the most accurate judge of their own pain intensity (Q 31), and 97.2% of nurses recognized a patient with pain would request increased doses of pain medication because they are experiencing increased pain, and not because of requesting increased attention, anxiety, or depression (Q 29). There were 71.8% of nurses who acknowledged that patients may sleep in spite of severe pain (Q 4) and 76.4% of nurses were aware that vital signs are not always reliable indicators of the intensity of a patient’s pain (Q 1).

### 4.3.2 Pharmacology

The least correctly answered questions were related to pharmacology and their side effects. For example, the question regarding the likelihood of a patient developing respiratory depression in the absence of new comorbidity was the worst
answered question (Q 28), at only 11.8% (n = 8). Just under half of the nurses sampled (45.6%) thought the rate of respiratory depression was 1-10%, however the correct answer was that the chance of developing respiratory depression is less than 1%. Over half (54.2%) of nurses felt respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months (Q 6). There were 40.7% of nurses who were unaware that morphine does not have a ceiling dose (Q 11) and 65.7% of nurses did not know the equal analgesia conversion of oxycodone and acetaminophen to morphine (Q 18). There were 62.5% of nurses who would use opioids for pain, if the source of the patients’ pain were unknown (Q 19). The remaining nurses thought using opioids would mask the ability to correctly diagnosis the cause of pain.

### 4.3.3 Cancer Related Pain

There were five questions (Q 5, Q 23, Q25, Q28, Q30) related to cancer-associated pain that were poorly answered. Although these questions were specific to cancer pain, older adults are more likely to have co-morbidities, such as cancer, than younger patients (Moulin, 2008). There were 43.7% of nurses who thought that the subcutaneous route was the recommended route of administering opioids for patients with persistent cancer related pain (Q 23). The correct answer is the oral route; only 23.9% of nurses answered this question correctly. There were 38.9% of participants who thought Aspirin and other NSAIDs were effective for painful bone metastases (Q 5) and 62.3% were aware of medications that were useful in the treatment of cancer pain (Q 30).
4.3.4 Addiction, Withdrawal, and Substance Abuse

There were inconsistencies found in the area of addiction, withdrawal, and substance abuse gathered from the study. For example, just 34.7% of nurses were aware sweating, yawning, diarrhea, and agitation from abrupt discontinuation of opioids were side effects, whereas a larger percentage (54.2%) incorrectly thought impaired control over drug use; compulsive use; and craving were also characteristics of abrupt discontinuation of an opioid (Q 36). However, some of the top correctly answered questions were also related to opioid addition. There were 94.4% of nurses who knew the signs and symptoms of opioid addiction (Q22) and 98.6% realized opioids could be safely used in patients with a history with substance abuse (Q10). There were 39.4% of nurses’ who recognized that 5-15% of patients who develop pain already have an alcohol or drug abuse problem (Q 33). There were 23% of nurses who thought the rate was higher at 25-50%, which may be explained by the population at the hospital, which is further discussed in Chapter Five.

4.4 Research Question 2: After reading a written description of patients in pain, what are the nurses’ assessment, documentation, and intervention surrounding a patient in pain?

The case studies on the KASRP explored the participant's assessment, documentation, and intervention. Patient A and B are both males who underwent abdominal surgery. On their first day following surgery, both patients rate their pain
as 8 out of 10 and vital signs are identical for both patients. However, Patient A is joking with a visitor and Patient B is lying in bed grimacing.

Overall, there were 87.3% \((n = 62)\) of nurses who would document Patient A's pain as 8, while 11.3% \((n = 8)\) of nurses documented his pain less than 8 (Table 3 - Q 37). There were 91.5% \((n = 65)\) of nurses who documented Patient B's pain as an 8, and 5.6% \((n = 4)\) rated it less than 8 (Table 3 - Q 38).

Table 4

*Nursing Assessment of Pain for Patient A and Patient B*

<table>
<thead>
<tr>
<th>Professional Qualification of Nurse</th>
<th>Documentation</th>
<th>Patient A N (%)</th>
<th>Patient B N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN</td>
<td>8</td>
<td>47 (92.2)</td>
<td>48 (94.1)</td>
</tr>
<tr>
<td>LPN</td>
<td>8</td>
<td>15 (71.4)</td>
<td>17 (85)</td>
</tr>
</tbody>
</table>

Although the majority of nurses would document both patients' pain as 8, nurses still had a tendency to rank their pain lower than 8. However, Patient B, the grimacing patient, received a pain assessment of 8 more frequently than patient A, the smiling patient. In addition, LPNs under documented the pain of patients more frequently than RNs.

The nurse’s assessment is made two hours after both patients received 2mg of morphine. Both patients are still complaining of pain ranging from 6 to 8 out of 10, and identified a level of 2 out of 10 as an acceptable level of pain. Both patients
have no clinically significant respiratory depression, sedation, or other untoward side effects. The physician's order for analgesia is “morphine IV 1-3mg q1h PRN pain relief.” Below, table 5 illustrates the nursing intervention for patients A and B.

**Table 5**

*Nursing Intervention for Patient A and Patient B*

<table>
<thead>
<tr>
<th>Professional Qualification of Nurse</th>
<th>Action Taken</th>
<th>Patient A N (%)</th>
<th>Patient B N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN</td>
<td>No morphine</td>
<td>7 (13.7)</td>
<td>4 (7.8)</td>
</tr>
<tr>
<td></td>
<td>1mg IV morphine</td>
<td>11 (21.6)</td>
<td>7 (13.7)</td>
</tr>
<tr>
<td></td>
<td>2mg IV morphine</td>
<td>9 (17.6)</td>
<td>7 (13.7)</td>
</tr>
<tr>
<td></td>
<td>3mg IV morphine</td>
<td>24 (47.1)</td>
<td>33 (64.7)</td>
</tr>
<tr>
<td>LPN</td>
<td>No morphine</td>
<td>7 (33.3)</td>
<td>4 (22.2)</td>
</tr>
<tr>
<td></td>
<td>1mg IV morphine</td>
<td>7 (33.3)</td>
<td>5 (27.8)</td>
</tr>
<tr>
<td></td>
<td>2mg IV morphine</td>
<td>0 (0)</td>
<td>5 (27.8)</td>
</tr>
<tr>
<td></td>
<td>3mg IV morphine</td>
<td>6 (28.6)</td>
<td>4 (22.2)</td>
</tr>
</tbody>
</table>

Table 5 indicates that for patient B, 47.1% of RNs would administer the maximum 3mg IV morphine, and 64.7% of RNs would administer 3mg IV morphine for patient B.

A third of LPNs would not provide medication and another third would administer 1mg IV morphine for patient A. For patient B, 27.8% of LPNs would give 1mg IV morphine, and another 27.8% of LPNs would administer 2mg IV of
morphine. The different scope of practice between RNs and LPNs will be further discussed in the next chapter.

4.5 Research Question 3: What are the factors influencing nurses’ knowledge level and attitudes regarding pain?

This research question used the demographic profile and the scores on the KASRP to address the factors that may influence the knowledge level and attitudes that affect pain management.

4.5.1 Gender

There were far fewer males (17.3%) than females (82.7%) in the sample study. An independent sample t-test was conducted to compare the KASRP scores for males and females. There was no significant difference in scores for males ($M = 73.48; SD = 9.87$) and females, ($M = 68.06; SD = 11.80$); $t (73) = -1.54, p = .129$ (two-tailed). The magnitude of the differences in the means (mean difference = -5.41, 95% CI: -12.44 to 1.61) was moderate ($\eta^2 = 0.03$).

4.5.2 Age Distribution

The findings revealed nurses aged 50-59 years ($n = 3$) scored the highest with 71.92%, followed by the 40-49 year age group ($n = 14$) at 69.36%. The 30-39 year age group ($n= 24$) scored 68.19%, and finally, the 20-29 year age group ($n= 34$) scored 67.26%.
A one-way between groups analysis of variance (ANOVA) was conducted to explore the impact of age on knowledge and attitude level regarding pain management, as measured by the KASRP. Participants were divided into four groups according to their age (Group 1: 20-29 years; Group 2: 30-39 years; Group 3: 40-49 years; Group 4: 50-59 years). There was no statistically significant difference at the $p < 0.05$ level in the KASRP score for the four age groups: $F(3, 68) = 0.143, p = 0.943$. The effect size was small ($\eta^2 = 0.01$) and was calculated using eta squared.

4.5.3 Professional Qualification

An independent sample $t$-test was conducted to compare the KASRP scores for RNs and LPNs. The knowledge levels and attitudes of RNs were higher than LPNs. There was a statistically significant difference in scores for RNs ($M = 72.50$, $SD = 10.33$) and LPNs, ($M = 60.65$, $SD = 10.34$); $t(37.29) = 4.42$, $p = .00$ (two-tailed). The magnitude of the differences in the means (mean difference = 11.85, 95% CI: 6.42 to 17.28) was very large ($\eta^2 = 0.23$).

4.5.4 Educational Level

An ANOVA was conducted to explore the impact of education on knowledge and attitude scores regarding pain management, as measured by the KASRP. Nurses were asked to record their highest level of education (diploma, bachelor's degree, master's degree, and doctorate). There was a statistically significant difference at the $p < 0.05$ level in KASRP scores for the four educational levels: $F(2, 69) = 7.71, p = 0.001$. The actual differences in mean scores between the groups were quite large.
The effect size, calculated using eta squared, was 0.18. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for diploma prepared nurses ($M = 61.40$, $SD = 11.08$) was significantly different for the bachelors prepared nurses ($M = 72.07$, $SD = 10.56$). Nurses with doctorates did not differ significantly from either the diploma or bachelor prepared nurses. No masters’ degree prepared nurses participated in the study. This will be further discussed in the next chapter.

4.5.5 Years of Professional Nursing Experience

The relationship between years of professional experience and scores on the KASRP was investigated using Pearson correlation coefficient. There was a very weak positive correlation between the two variables, $r = 0.08$, $n = 71$, $p < 0.50$, suggesting a weak relationship between years of professional experience and scores on the KASRP. More than half (54.1%) of all the participants had less than 3 years of experience.

4.5.6 Pain Education

Of all the nurses, the group that did not attend a pain course ($n = 24; M = 68.31$) scored similar averages on the KASRP questionnaire to the group that did attend a pain course ($n = 48; M = 69.41$). About half of the nurses ($n = 38$) “always” worked with patients in pain, and this group had an average KASRP score of 69.67%. Nurses who worked with patients in pain “often” ($n = 30$) had an average score of 67.28%, five nurses who stated they “occasionally” worked with patients in
pain had an average score of 62.63%. One nurse who “never” worked with patients in pain scored 84.2%.

An independent sample t-test was conducted to compare the KASRP score for attendance at any pain education. There was no significant difference for nurses’ who attended pain education ($M = 69.41$, $SD = 11.86$) and nurses’ who did not attended pain education ($M = 68.31$, $SD = 11.28$); $t(70) = -0.376$, $p = 0.71$ (two-tailed). The magnitude of the differences in the means (mean difference = -1.09, 95% CI: -6.92 to 4.33) was very small ($\eta^2 = 0.002$).

4.5.7 Frequency of Caring for Patients in Pain

This factor explored whether nurses caring for patients in pain frequently would make an impact on their knowledge level and attitudes regarding pain. An ANOVA test was conducted on all the nurses to explore the impact that the frequency of treating patients in pain, during a typical workweek, would have on the KASRP score. There was no statistically significant difference at the $p < 0.05$ level in the KASRP scores for the group (never, occasional, often, and always): $F(3, 67) = .914$, $p = 0.44$. The effect size was moderate ($\eta^2 = 0.04$).

4.6 Research Question 4: What are the preconceived notions regarding a patient’s conditions/diagnosis and age that influence the nurses’ decision making regarding the management of pain?
This question was best addressed using the CDMPQ tool (Brockopp et al., 2003). Table 6 presents the percentage of nurses scoring from 1 - 5 on the CDMPQ on 11 various patients diagnosis and conditions.

**Table 6**

*Clinical Decision Making Pain Questionnaire - Nurses Distribution of Their Time and Energy*

*Managing a Patient’s Pain*

<table>
<thead>
<tr>
<th>Participants</th>
<th>1(%)</th>
<th>2(%)</th>
<th>3(%)</th>
<th>4(%)</th>
<th>5(%)</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>2.9</td>
<td>8.6</td>
<td>17.1</td>
<td>18.8</td>
<td>52.9</td>
<td>4.09</td>
<td>1.15</td>
<td>1-5</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>4.3</td>
<td>7.1</td>
<td>17.1</td>
<td>12.9</td>
<td>58.6</td>
<td>4.14</td>
<td>1.19</td>
<td>1-5</td>
</tr>
<tr>
<td>Renal patients</td>
<td>0</td>
<td>5.7</td>
<td>20</td>
<td>21.4</td>
<td>52.9</td>
<td>4.21</td>
<td>0.96</td>
<td>2-5</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>0</td>
<td>5.7</td>
<td>18.6</td>
<td>54.3</td>
<td>5.4</td>
<td>0.95</td>
<td>2-5</td>
<td></td>
</tr>
<tr>
<td>Older adults</td>
<td>2.9</td>
<td>2.9</td>
<td>12.9</td>
<td>24.3</td>
<td>57.1</td>
<td>4.30</td>
<td>0.99</td>
<td>1-5</td>
</tr>
<tr>
<td>Laparoscopic surgery</td>
<td>0</td>
<td>2.9</td>
<td>18.6</td>
<td>18.6</td>
<td>60</td>
<td>4.36</td>
<td>0.89</td>
<td>2-5</td>
</tr>
<tr>
<td>AIDS</td>
<td>0</td>
<td>7.1</td>
<td>14.3</td>
<td>10</td>
<td>68.6</td>
<td>4.40</td>
<td>0.98</td>
<td>2-5</td>
</tr>
<tr>
<td>Chronic pain</td>
<td>0</td>
<td>4.3</td>
<td>11.4</td>
<td>17.1</td>
<td>67.1</td>
<td>4.47</td>
<td>0.86</td>
<td>2-5</td>
</tr>
<tr>
<td>General surgery</td>
<td>2.9</td>
<td>2.9</td>
<td>1.4</td>
<td>12.9</td>
<td>80</td>
<td>4.64</td>
<td>0.89</td>
<td>1-5</td>
</tr>
<tr>
<td>Cancer</td>
<td>2.9</td>
<td>0</td>
<td>4.3</td>
<td>7.1</td>
<td>85.7</td>
<td>4.73</td>
<td>0.80</td>
<td>1-5</td>
</tr>
<tr>
<td>Multiple trauma</td>
<td>4.4</td>
<td>0</td>
<td>1.3</td>
<td>5.7</td>
<td>88.6</td>
<td>4.74</td>
<td>0.80</td>
<td>1-5</td>
</tr>
</tbody>
</table>

*Note: 1 = minimal time and energy expended on pain management; 5 = maximum time and energy expended on pain management  
SD = standard deviation  
N = 70, except Diabetes N = 69*
and energy were patients who had laparoscopic surgery \((M = 4.36)\) and AIDS \((M = 4.40)\). The patient’s who received the greatest amount of time and energy were patients with multiple trauma \((M = 4.74)\); cancer \((M = 4.73)\); general surgery \((M = 4.64)\), and chronic pain \((M = 4.47)\).

Chart 1 illustrates the percentage of patients who would expend the maximum of time and energy on a patient’s pain.

\textbf{Chart 1}

\textit{Maximum Time and Energy Expended on Patient’s Pain (5 on a 1-5 scale).}

Patients with multiple trauma were viewed mostly positively, as 88.8\% of nurses would spend the maximum amount of their time and energy managing the patients’ pain, followed closely by cancer patients (85.7\%), and general surgery patients (80.0\%). However, patients typically seen on the medical unit, diabetic (52.2\%), renal (52.9\%), substance abuse (54.9\%), older adults (57.1\%), and attempted suicides (58.6\%) were viewed less positively.
4.7 Conclusion

The data analysis presented in the results chapter found the participants with bachelor’s degrees and RNs presented a greater knowledge level and a positive attitude about pain. However, there were no statistically significant differences in age, gender, and years of professional experience. Additionally, nurses’ participation in pain education and the frequency with which they cared for pain patients did not have a significant impact on the study’s results.

The case studies revealed that nurses underestimated patients’ pain and nurses have insufficient knowledge surrounding pharmacology, cancer related pain, addictions, withdrawal, and substance abuse.

Data analysis from the CDMPQ revealed that medical nurses would spend the most time and energy on patients’ experiencing multiple trauma, pain associated with cancer, and patients who have had general surgery. Nurses would spend the least amount of time and energy on patients with pain associated with diabetes, attempted suicide, renal, and older patients.

4.8 Summary

The results section provided the statistical analysis used to compare the mean difference between scores on the KASRP and the factors of the nurses that impacted their knowledge and attitude level. The study also presented a demographic of the nurses and the response rate of the study. Finally, the data analysis demonstrated that nurses have preconceived notions that result in their
spending less time and energy on patients’ with chronic medical conditions and older adults; and this will be discussed in the next chapter.
Chapter 5

Discussion

The purpose of this study was to explore nurses’ knowledge and attitudes surrounding pain, with a focus on older adults on the medical unit. The results of the study will be discussed within the context of the relevant literature. The limitations, strengths of the study, and implications for nursing practice will also be considered. This chapter will enhance our understanding of strategies to improve medical nurses’ knowledge and attitudes towards better pain management practices and make recommendation for future research.

5.1 Demographics of Participants

In 2009, the average age of RNs in Canada was 45.2 (CIHI, 2009) and the average age of LPNs was 44.4 years (CIHI, 2005). The largest cohort of nurses (15.4%) was between 50-54 years of age. Specific to the medical/surgical units in Canada, the average age was slightly younger at 41.1 years of age (CIHI, 2009). In this sample population, 77.3% of the nurses were 39 years old or younger, reflecting a relatively young group of nurses, compared to the national average. Generally new nursing graduates start on the medical or surgical wards, often because patients are less acute, whereas high acuity units, such as intensive care units (ICU) and cardiac care units, have traditionally been designated for more experienced and seasoned nurses.
In 2009, men represented 6.2% of the population of RNs in Canada (CNA, 2009). Men made up a greater percentage (17.2%) of the medical nurses sampled, possibly due to many new graduates starting on the medical/surgical unit.

The highest level of education reported by RNs in Canada employed in nursing was a diploma (60.3%), followed by a bachelor (36.7%), a master’s degree (3%), and then a doctorate degree (0.2%) (CNA, 2009). The RNs from this study presented higher educational preparation than the national average, as 88.9% (n = 48) had a bachelor’s degree, while 9.3% (n = 5) had a diploma, and one had a doctorate. The increase in bachelors prepared RNs may be due to the educational requirement for entry to practice as a RN in British Columbia (BC). Since 2006, B.C. required all RNs to have a bachelor’s degree for nursing entry to practice (CNA, 2012). In this study, 76.2% (n = 16) of LPNs had diplomas, 19% (n = 4) had a bachelor’s degree, and one person had a doctorate. The minimum requirement to be a LPN continues to be a certificate in practical nursing (CLPNBC, 2012).

5.2 Registered Nurses and Bachelor’s Education

Research has demonstrated that bachelors educated RNs have been associated with positive patient outcomes and improved patient safety (CNA, 2012). In this study, RNs and bachelors prepared nurses were found to have statistically significant higher knowledge level and attitudes on the KASRP than LPNs and diploma prepared nurses. One study (Aiken, Clarke, Cheung et al., 2002) found staffing in hospitals with a 10% increase in the proportion of bachelors prepared RNs were associated with a 5% decrease in patients dying. Other findings (Brunier
et al., 1995; Buckner, 2008; Lewthwaite et al., 2011) also support that bachelors prepared nurses have higher knowledge regarding pain management. The bachelors prepared nurse is important for nursing because the competence and skill to critically assess and manage complex diseases are taught in their programs (CNA, 2012).

The participants in this study were younger than the general nursing population and the greater knowledge and attitudes score may be a reflection of the different educational content. In previous studies (Wilson et al., 2007; Lewthwaite et al., 2011), younger nurses with fewer years of experience had positive pain scores. Nurses who attended educational sessions did not have an impact on pain knowledge and attitudes as found in Liu et al., (2008). In contrast, Brunier et al., (1995) found attendance at pain in-service training resulted in improvements in knowledge and attitudes towards pain management. Educational efforts have been beneficial and should continue, however more analysis is needed on what and how the educational content is delivered. Solely attending an educational session on pain management may not be enough to impact the knowledge and attitudes.

5.2.1 LPN Scope of Practice

There are distinct differences in the role and responsibilities of LPNs across Canada that is dependent upon their scope of practice (as defined by the provincial authority), foundational education (as defined by their licensing body), organizational policies (as defined by their employer), and individual competencies. The administration of IV medications does not fall within the core competency of
LPNs in B.C. (CLPNBC, 2009), and LPNs cannot administer medication via the IV route at this hospital site (Providence Health Care, 2011). Furthermore at the study site, more acute patients with IV medications are usually under the care of RNs. This may explain why many LPNs scored worse on the questionnaire, were hesitant to give the higher range of pain medication, and lacked the experience to administer the appropriate pain medication.

5.3 Medical Nurses’ Knowledge and Attitudes Regarding Pain Management in Older Adults

The mean score (69.04%) of the study revealed moderate knowledge and attitudes regarding pain management. Previous studies using the KASRP used to measure knowledge and attitudes found scores ranging from 41% to 79% (Brunier et al., 1995; Innis, Bikaunieks, Petryshen et al., 2004; Tapp & Kropp, 2005; Wilson, 2007; Liu et al., 2008; Lewthwaite et al., 2011). As advised by McCaffrey and Ferrell (1997), there is no true passing score, rather is it better to look at the questions individually or as categories. The areas of concern gathered from the questionnaire were related to:

I. Underestimation of pain

II. Pharmacology

III. Cancer related pain

IV. Addiction, withdrawal, and substance abuse
5.3.1 Underestimation of Pain

In this study, it was very encouraging to find the assessment of a patient’s self-report of pain intensity was accurately documented by approximately 93% of RNs and 78% of LPNs. Evidence to support the finding is found in Shaer et al., (2011), where the nurses recognized the basic principal of pain assessment and also recognized that the patient is the most accurate judge of pain intensity. In contrast, previous researchers (Solomon, 2001, Puntillo, Neighbour, O’Neil, et al., 2003; Idvall, Berg, Unosson, Brudin, 2005; Prkachin, Solomon, & Ross, 2007) have found nurses and other health care professionals continue not to accept patient’s self-pain reports.

At the study site, a 24-hour patient care flow sheet was used for nursing documentation and required the nurses to record the patient’s pain intensity score from 0-10 and also the patient’s comfort level from 0-10. The flow sheets had been discussed at length during nursing orientation and nurses were made to utilize them correctly, which may be a reflection of the reasonably accurate documentation.

As we have seen, while the nurses’ pain ratings were accurate, the intervention and re-assessment of pain was problematic, as has been found by other researchers (Bucknall, Manias, & Botti, 2007). In this study, despite the high pain intensity, less than half of the nurses would give the higher range of prescribed opioids to treat the pain. Many nurses gave opioids in dosages that would cause the pain to continue or worsen. This reflects research carried out by Hornbury et al., (2005); Askay, Bombardier & Patterson, (2009) and Sawyer et al., (2010). Also, in a study by Watt-Watson et al., (2004) analyzing analgesic given post-operatively
following coronary artery bypass surgery (CABG) surgery, the researchers found only 33% of the prescribed pain medication was given to patients. As Pasero and McCaffrey (2003) concluded, an increase in pain documentation does not necessarily guarantee pain relief.

Findings from this study learned nurses would give more analgesia for the patient who displayed overt signs of pain. Results are consistent with those of McCaffrey et al., (1991) and Coker et al., (2010). According to Horbury et al., (2005), nursing decisions on pain control were likely to be influenced by patients’ behaviors, rather than on the self-report of pain. Nurses may be aware the patient is in pain, however they may lack the knowledge and communication to manage their pain. This may be explained by a study from Bostrom et al., (2004) of the patients’ perception of pain management. Those patients believed, due to the lack of communication with their health care provider, that the underestimation of their pain came from not being believed rather than other factors. Furthermore, nurses are influenced by behavioural displays of pain more so than verbal reports.

5.3.2 **Poor Knowledge and Attitudes Regarding Pharmacology**

Poor pharmacology knowledge among nurses has existed for decades (McCaffery & Ferrell, 1999; Watt-Watson et al., 2004; Jones, Fink, Pepper, Hutt, et al., 2004; Tapp & Kropp, 2005; Liu et al., 2008; Sawyer et al., 2010; Elcigil et al., 2011; Lewthwaite, 2011). In this study, the questions that were most often incorrectly answered were related to pharmacology, specifically questions related to opioids. An opioid commonly prescribed to medical patients is morphine, however many
nurses were unaware of the duration, peak effect, ceiling effect, and the amount that can be safely given. Erkes et al., (2001) found that medical nurses had knowledge deficits about morphine compared to ICU nurses, where opioids are used more regularly. Nurses were uncomfortable with administering opioids, and avoided it in older adults (Bernabei et al., 1998; Gregory & Haigh, 2007) because nurses’ formed negative opinions about opioids, such as addiction, or risk of overdose (McCaffrey et al., 2000). Along with poor knowledge, the attitudes of nurses seem to determine the use of pharmacology interventions, resulting in inconsistent and unreliable pain management.

In particular, LPNs were less likely to believe the patients’ pain reports, under-document pain, and were more hesitant to administer opioids than RNs. LPNs were found to score significantly lower in knowledge of pharmacology pain management scores than RNs as found in this study and also by Coyne, Reinert, Cater, et al., (1999). Once again, this may be attributed to lack of experience and their scope of practice.

Nurses continue to have the misconception that respiratory depression from opioids makes it too dangerous to use in patients (Hornbury, Henderson, & Bromley, 2005; Elcigil et al., 2011). Only 11.8% of nurses correctly answered the chance of getting respiratory depression from opioids was less than 1%. Nurses are taught early in their education the respiratory depressant effects of opioids and feel it is inappropriate to give opioids to older patients (Kaasalainen et al., 2007; Coker et al., 2008). As the medical unit consistently has a greater portion of older adults, the nurses may be more reluctant to use opioids in older adults for fear of confusion,
delirium (Jovey, 1998), or risk of falls (Leveille, et al., 2002). There is less nursing knowledge about appropriate opioid use for older adults (Coker et al., 2008; Elcigil et al., 2011), which may contribute to the fear of respiratory depression in older adults.

5.3.3 Cancer Associated Pain

Although cancer can occur at any age, the occurrence of cancer tends to increase as we grow older. The results revealed that a lack of knowledge surrounding cancer related pain still persists among nurses as has been found by other researchers (McCaffrey, 1995; Bernadri, Catania, Tridello, 2007; Yildirim, Cicek, & Uyar, 2008). It was discouraging to find that many nurses were unaware that the oral route can be used for severe pain and this has not changed since McCaffrey's research in 1995 even though best practice guidelines recommend the oral route for chronic and acute pain (RNAO, 2002). However, similar to Brockopp et al., (2003), it was promising to find that nurses would spend a significant amount of time and energy managing cancer related pain. Cancer has generated tremendous awareness and support globally from research, cancer care organizations, and dedicated palliative care units. These may be the reasons nurses expend the maximum time and energy when managing cancer related pain.
5.3.4 Addiction, Withdrawal, and Substance Abuse

In this study, nurses assumed a higher percentage of patients with pain would also have an alcohol or substance abuse problem. Previous research found that nurses were reluctant to give opioids for fear of addiction (Elcigil et al., 2011) and were confused between the definition of dependence, addiction, and withdrawal (Ferrell, McCaffrey; Rhiner, 1992; McCaffrey & Ferrell, 1995; Jones et al., 2004). These findings may be a reflection of the population of patients at the study site that serves nearby Vancouver Downtown Eastside, which is the most impoverished urban location in Canada, and has been the focus of heavy illicit drug use since the 1970s (Wood, Tyndall, Spittal et al., 2001). Among injection drug users, HIV/AIDS and drug overdose have been common (Wood et al., 2001). In the study site, 15% of admissions were related to injection drug use (Wood, Kerr, Spittal et al., 2003) and many patients are admitted for drug and addictions treatment.

Staff knowledge deficit, attitudes, and bias can influence the assessment and management of care. Substance abuse patients would receive only 54.3% of the nurses’ maximum time and energy managing their pain. These patients may be under medicated for pain due to health care providers’ fear of addiction, fear of drug overdose, misbelieving their pain, and lack of knowledge about how to manage pain in this population (Ferrell et al., 1992; Askay et al., 2009). The inadequate attention substance abuse patients received may be a reflection of the inconsistent knowledge and pre-conceived notions held by nurses (Askay et al., 2009). Furthermore, substance abuse among older adults may be deemed difficult to treat by health care professionals, and has been referred to an “invisible” epidemic (Widlitz & Marin
2002). It may not be recognized as we commonly think of drug abuse as an issue with younger individuals. Managing their pain may be more complex, but overlooking older adults has implications for their health and their trust in the health care system. More knowledge surrounding the interaction between addiction, tolerance, and pain management is needed to effectively treat this patient population, especially given the high admission rate of substance users.

5.4 Perceived Notions Regarding Pain

5.4.1 Older Adults

It was disappointing to find nurses had poor understanding of older adults’ pain and they were not seen as high a priority as other patients. This concurs with other research (Whealan et al., 2004; Stevens, Katz et al., 2004; Jovey, 2008; Wang & Tsai, 2010), and is concerning as older adults are likely to have multiple medical conditions associated with pain (Miller, 1996; Brockopp et al., 2003; Watt-Watson, et al., 2004; Horgas & Yoon, 2008; Moulin, 2008). Medical patients account for a large portion of hospitalized older patients (Dix et al., 2004; Sawyer et al., 2010), however health care professionals are too focused on the diagnosis and disease process (Liu et al., 2008).

Misconceptions and attitudes towards pain and aging have contributed to how nurses and physicians assess and manage pain (Herr et al., 2004; Kaasalainen et al., 2007; Coker, et al., 2008; Chapman, 2010). Older adults were only given 57.1% of the nurses’ maximum time and energy managing their pain. Furthermore, there
are factors that may complicate the assessment of pain in the older adult that include: cognitive impairment, language barriers, and sensory problems (Coker et al., 2010). Health care providers may view pain as a normal part of aging and believe that older patients experience less pain because they have decreased pain sensitivity (Helme & Gibson, 2011; IASP, 2011). Other myths about pain include the belief that patients with dementia may not feel pain, and if they do not report pain then they do not feel pain (Kaasalainen et al., 2007).

5.4.2 Chronic Conditions versus Acute Conditions

Nurses have been shown to attribute less pain to patients suffering from chronic conditions than to those suffering from acute conditions (Taylor, et al., 1984). More than 80% of older adults have pre-existing chronic medical conditions such as arthritis and diabetes that contribute to their different sources and types of pain (Horgas & Yoon, 2008). In this study, pain associated with diabetes and renal disease, conditions often found in aging adults, was viewed the most negatively. HIV/AIDS patients were given moderate attention, while those whose pain was caused by multiple trauma or surgery was viewed the most positively.

Chronic pain has been associated with a lower quality of life, compared to other diseases (Schopflocher, Jovey et al. 2010). There is no reason that one can assume that chronic pain is less severe than acute pain, however nursing attitudes on psychological symptoms related to chronic conditions exist (Taylor et al., 1984). Unfortunately, the negativity surrounding chronic conditions has prevented patients from receiving the appropriate pain treatment.
Similar to this study, Davidson (2003) found the pain felt by hemodialysis patients were not being effectively managed and they were more prone to pain than the general population. Their pain was mostly musculoskeletal in nature, but also psychological, involving end of life issues that can cause anxiety (Davidson, 2003). As Kumar & Allcock (2008) found, the psychosocial issues may play a factor in the influence and expression of an older adult's pain. Renal disease is a major medical issue and takes a toll on relationships, work, family and friends, and the ability to engage in social activities. A literature review by Williams & Manias (2007) found little information to guide health care professionals on renal disease, and no study examined pain control from the health care professionals’ perspective, which may explain the lack of time and energy given to renal patients in this study.

In another example, diabetic neuropathy is a common complication of diabetes and can be difficult to treat, which may discourage health care providers (Huizinga & Peltier, 2007). As patients with neuropathic pain rarely get complete pain relief, both health care providers and patients feel frustration (Larme & Pugh, 1998). The pain is often chronic and leaves patients and providers with the inability to achieve a sense of control over the disease (Larme & Pugh, 1998).

Another chronic condition growing rapidly is older adults living with HIV/AIDS. Advanced medicine and treatment has kept people affected with HIV/AIDS living longer, with 50% of all HIV/AIDS people aged 50 or older (Effros, Fletcher, Gebo, et al., 2008) and older adults comprising of 15% of all new infections in the USA (CDC, 2010). Pain is common in HIV/AIDS patients and it is severely undertreated, which is attributed to health care providers underestimation of
patient’s pain and lack of knowledge on proper analgesia (Larue, Fontain, Colleau, 1997). As discussed previously, nurses in this study had tremendous exposure to patients with HIV/AIDS given the population of patients. Compared to other studies (Rintamaki, Scott, Kosenko, et al., 2007; Zukoski & Thorburn, 2009), HIV/AIDS positive patients were viewed negatively, however the nurses in this study seemed to give better attention and energy caring for this population. The hospital site has been dedicated to caring for the HIV/AIDS population through research, education, and treatment; this was reflected in the time and energy nurses would spend managing their pain.

5.4.3 Psychological Symptoms Associated with Chronic Pain Conditions

Pain associated with psychological symptoms is viewed as less intense or real than pain having a known origin (Burgess, 1980; Taylor et al., 1984). This is damaging for chronic pain sufferers, as a considerable measure of patients presenting with chronic pain have a history of psychiatric co-morbidities, such as depression, anxiety, and thoughts of suicide (Smith, Aronson, & Sokol, 2011). In this study, patients who were seen as exacerbating their condition, for example, through substance abuse or attempted suicide; were less likely to be treated for pain versus patients who were not contributing to their pain. The presence of depression in a patient had a significant effect on the pain intervention (Taylor et al., 1984). Nurses viewed suicide attempts negatively, as it would appear that the responsibility of the patients for their condition affected the nurses’ treatment of their pain (Brockopp et al., 2003). A study by Botega, Reginato, Volk da Silva et al., (2005) discovered
nurses’ difficulty in providing care for patients who wanted to die. The study by Brockopp et al., (2003) revealed many nurses thought a patient’s pain through attempted suicide would prevent suicide re-attempt. Taylor et al., (1984) found that depressed headache patients would receive less pain intervention than non-depressed patients. It was thought that nurses perceived the pain intervention to be less effective and inappropriate in patients with psychological symptoms than pathological symptoms (Taylor et al., 1984).

As Cohen-Mansfield & Marx (1993) found, the prevalence of depression may be enhanced in the older adults due to their multiple chronic pain comorbidities and sometimes the symptoms of depression and chronic pain may overlap or co-exist. A self-rated report of older adults revealed that those with chronic pain consider their health poorer than patients without chronic pain (Reyes-Gibby, Aday & Cleeland, 2002).

5.5 Implications for Nursing

5.5.1 Nursing Practice

Nurses play an important role in the prevention and treatment of pain. Nursing assessments on patient pain intensity were mostly accurately documented; however concerns were discovered on the nurses’ interventions. As part of the re-assessment, nurses can ensure pain level is not greater than the patient’s comfort level.

The 24-hour patient care flow sheet is a form of documentation used for pain assessment by nurses at the hospital however, emphasis should be made on
utilizing the comfort ratings. The comfort-function goal is a way to establish accountability for the nurse (Pasero & McCaffrey, 2004) and was found to be positive through the regular assessment of pain intensity ratings and comfort goals (Shugarman, Goebel, Lanto, et al., 2010). When routinely asked of the patient’s comfort-functional goals, the patient and nurse can work on a common goal to decrease the pain to a level that is acceptable to the patient. Nurses documenting both the pain intensity and the comfort level can establish the evaluation of pain treatments. Thus nurses’ can provide pain medication that is appropriate, consistent, and prevent bias against chronic conditions. Establishing accountability for pain management and creating regular functional comfort goals, will decrease personal attitudes regarding pain from health care providers (Pasero & McCaffrey, 2004).

5.5.2 Nursing Education

Education is one central aspect to strengthening pain knowledge, however education may need to be tailored and appropriate to meet the nurses educational needs. Nurses have expressed an interest in learning more about pain management, however limited time and busy days shifts remained an issue as most in-services are offered during the day (J. Santucci, personal communications). Educators could provide educational courses during night, evening, or weekend shifts, when it tends to be less busy. Brief focused educational sessions might be helpful when there are time pressures. Other approaches could include using clinical pain champions (Idell, Grant & Kirk, 2007). As suggested by Russell et al., (2010) elected pain champions
responsibility would include discussing the interventions and outcomes that happened in the past shift. Nursing educators need to provide education specifically on pharmacology. As the sample unit was based on the medicine unit, more emphasis must be given to older adults and the management of pain related to their chronic conditions. Another educational strategy may be a discussion regarding older adults and the pain requirements needed in older adults and the persistent underlying concerns about opioids.

Many hospitals have utilized the mix staffing of RNs and LPNs in the medical unit, however a review of the roles and current scope of practice of LPNs has to evolve with the changing population. Stronger results were found in bachelors educated nurses, which as suggested by Lewthwaite et al., (2011), may be a result of the course content and more emphasis on evidence based research compared to the LPN curriculum. Education may need to be tailored more appropriately to LPNs. A key area is supporting LPNs, and perhaps more case studies and clinical discussions should be used as an alternative teaching method.

Many large hospitals have been providing education on IV maintenance and IV administration, and believe it is important to add the IV initiation in the basic LPN education (CLPNA, 2008). A collaborative practice model involving RNs and LPNs will help to utilize and support LPNs' full scope of practice.

Finally, the culture change also needs to occur from within the educational institutions. Educators, nurses, and interdisciplinary colleagues such as pharmacist and physicians can work to emphasize the importance of pain relief and pain management.
5.5.3 Administration

Finally, support is needed from hospitals to create a culture change that treats pain as a priority. By viewing pain as the fifth vital sign and monitoring it as frequently as the other vital signs, relieving pain will be a fundamental part of the health care professional’s dedication to treating pain. Nursing and key interdisciplinary team players are needed to help reform and advocate effective pain management. Nurses have the responsibility to support and work with other health care professionals for organizational change in effective pain management (RNAO, 2007).

5.6 Limitations of the Study

There were several limitations to the study that may have influenced the results. First, this was an exploratory, non-experimental, descriptive study. Data were gathered through convenience sample at one hospital in Vancouver, limiting the findings to a similar population. Second, LPNs were included in the study, however administering medications is a relatively new role for LPNs, and they may not be as comfortable administering medications or have the same level of clinical judgment as RNs. Third, even though the questionnaires were given with envelopes for participants to put their completed questionnaires in to maintain privacy, they could have completed the questions together, discussed the questions, or found other sources for the answers. Fourth, the questions in the survey were all closed-ended, limiting the amount of information that could be obtained. There were other factors such as culture or individual experiences that may have influenced the
nurses’ knowledge and attitudes on pain management that were not explored. Finally, the study was limited to theoretical questions, the case study focused on younger patients, and not on older adults the actual clinical practice of the nurses was not examined.

5.7 **Strengths of the Study**

One of the strengths of the study was the sample, which was representative of the medical nurses in Vancouver, thus making the study generalizable to similar populations of nurses working in comparable acute care hospitals. Furthermore, by participating in the questionnaire, nurses may have increased their knowledge of pain and enhanced their awareness of their attitudes towards pain. Most importantly, this study adds to the body of literature surrounding medical nurses’ knowledge and attitudes surrounding pain management in older adults.

5.8 **Recommendation for Future Research**

An area of future study could explore the cultural or personal experiences that impact nurses’ decisions on pain management. As this study found, documentation does not necessarily guarantee pain treatment. The nursing documentation can be audited to determine if pain intensity ratings and comfort goals are completed. These can be compared to the nurses’ knowledge and attitude of the management of pain and also the patients’ satisfaction with their pain management. Furthermore, educational approaches should target attitudes and beliefs regarding pain. Lastly, a qualitative study can concentrate on the factors that
contribute to nurses’ pre-conceived notions for certain groups of people and how that affects their knowledge and personal attitudes.

5.9 Summary

Challenges continue to remain evident in the area of pain management and persist to be the most common complaints of older adults. The major findings from this study found insufficient knowledge levels and attitudes towards pain management. Nurses are major contributors to the quality of care and health outcomes of patients; their knowledge, attitudes and bias are important in shaping their view of pain to create the optimal pain management care for older patients. Development in the areas of pharmacology, pain intervention, and misconceptions towards pain are needed to increase knowledge and create more positive attitudes towards pain management. A focus on changing the culture of care, and towards evolving the nursing practice to one of more accountability for pain management, will enhance nurses’ knowledge and attitudes regarding pain, and most importantly will reduce patient pain and improve quality of care.
References


*Pain, 80*, 23-29.


APPENDICES
Appendix A

Invitation Letter To Participants
Invitation Letter

Nurses’ Knowledge and Attitudes Regarding Pain Management in the Medical Unit

Dear Participant,

Why is this research being done?
This research focuses on Nurses’ Knowledge and Attitudes Regarding Pain Management in the Medical Unit. This research is part of a requirement for a Masters of Science in Nursing at the University of British Columbia and is being conducted by Michelle Wong, a practicing registered nurse.

Why have you been asked?
You are invited to participate in this study because you are a nurse who is able to assess and effectively manage patients’ pain in the medical unit. Your experience and opinions are very important and are needed to give an accurate picture of the current knowledge and attitudes of pain management in the medical unit.

What happens if you decide to take part in this study?
• You will be asked to complete an anonymous questionnaire about your knowledge and attitudes regarding pain management, as well as a brief demographic questionnaire.
• The questionnaire will take you approximately 15 minutes to complete.

What happens if you do not want to take part in the study?
• There will be no impact on you if you do not want to take part in this study.
• The study is entirely voluntary and it is your choice whether or not you would like to participate.

What are the benefits of participating?
• There may or may not be direct benefits to you for participating in this study. It is hoped that the study will be valuable to you by increasing your awareness of your knowledge level and attitudes regarding pain management.
• You will be able to view answers to the questionnaire by going to a website provided at the end of the questionnaire document.
• You will be provided with resources to Pain BC, Canadian Pain Coalition, and the contacts of the people on the research committee for further information regarding pain management.
What will happen to the information gained?

• All information will be stored securely, on a computer with password protection, by the researcher; only the research team will have access to the data.
• A report will be produced at the end of this research and a summary of this will be made available to you, if you wish.

What will the study cost me?

• There are no direct costs to you for participating in this study. You will not be paid for your participation. We have included chocolate as a token of our appreciation for your time and consideration in participating in our study, however, you are not obliged to do so.

What if I have complaints or concerns about the study?

• If you have any concerns about your rights as a research subject and/or your experiences while participating in this study, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598, or if long distance e-mail RSIL@ors.ubc.ca, or call toll free 1-877-822-8598.
• You may also contact St. Paul’s Hospital Ethics Board by calling 604-806-8851.

Consent:

• Taking part in this study is entirely up to you. You have the right to refuse to participate in this study.
• If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on your employment.
• The results of this study will be reported in a graduate thesis and may also be published in journal articles.
• **If the questionnaire is completed it will be assumed that consent has been given.**

If you have any further questions please contact Michelle or anyone on the research team.

Thank you! Your participation is greatly appreciated in improving pain management.
Appendix B

Demographic Profile (DP)
Demographic Profile

Please check one response

1. Age

☐ 20 – 29 years old     ☐ 30 – 39 years old     ☐ 40 – 49 years old

☐ 50 – 59 years old     ☐ 60 years old or greater

2. Gender

☐ Female     ☐ Male

3. Type of Nurse

☐ Registered nurse (RN)     ☐ Licensed practical nurse (LPN)

4. Highest level of education

☐ Diploma     ☐ Bachelor’s degree     ☐ Master’s degree     ☐ Doctorate

5. Year(s) of professional experience as a nurse:

______Year(s)

6. Have you attended any conferences, in-hospital training, workshops, or courses in pain management since graduating as a nurse?

☐ No

☐ Yes

7. During a typical week at work, how often do you care for patients in pain?

☐ Never     ☐ Occasionally (1-2 patients)

☐ Often (greater than 2 patients)     ☐ Always (greater than 3 patients)
Appendix C

Nurses Knowledge and Attitudes Survey Regarding Pain Management (KASRP)
### Knowledge and Attitudes Survey Regarding Pain

**True or False – Circle the correct answer**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1. Vital signs are always reliable indicators of the intensity of a patient's pain.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>F</td>
<td>2. Patients who can be distracted from pain usually do not have severe pain.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>4.Patients may sleep in spite of severe pain.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>5. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>7. Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>9. Research shows that promethazine (Phenergan) and hydroxyzine (Atarax) are reliable potentiators of opioid analgesics.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>10. Opioids should not be used in patients with a history of substance abuse.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>11. Morphine has a dose ceiling (i.e., a dose above which no greater pain relief can be obtained).</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>12. Elderly patients cannot tolerate opioids for pain relief.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>13. Patients should be encouraged to endure as much pain as possible before using an opioid.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>15. A patient’s spiritual beliefs may lead them to think pain and suffering are necessary.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>16. After an initial dose of opioid analgesics is given, subsequent doses should be adjusted in accordance with the individual patient's response.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>17. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>18. Oxycodone 5 mg + acetaminophen 325 mg PO is approximately equal to 10 mg of morphine PO.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>19. If the source of the patient’s pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>20. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>21. Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasms.</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>22. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.</td>
</tr>
</tbody>
</table>
Knowledge and Attitudes Survey Regarding Pain

Multiple Choice – Circle the correct answer

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is ____:
   a. intravenous.
   b. intramuscular.
   c. subcutaneous.
   d. oral.
   e. rectal.

24. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is ____:
   a. intravenous.
   b. intramuscular.
   c. subcutaneous.
   d. oral.
   e. rectal.

25. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?
   a. codeine.
   b. morphine.
   c. meperidine.
   d. tramadol.

26. Which of the following IV doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours?
   a. Morphine 5 mg IV.
   b. Morphine 10 mg IV.
   c. Morphine 30 mg IV.
   d. Morphine 60 mg IV.

27. Analgesics for post-operative pain should initially be given ____:
   a. around the clock on a fixed schedule.
   b. only when the patient asks for the medication.
   c. only when the nurse determines that the patient has moderate or greater discomfort.

28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is ____:
   a. less than 1%.
   b. 1-10%.
   c. 11-20%.
   d. 21-40%.
   e. > 41%.
29. The most likely reason a patient with pain would request increased doses of pain medication is ______:
   a. The patient is experiencing increased pain.
   b. The patient is experiencing increased anxiety or depression.
   c. The patient is requesting more staff attention.
   d. The patient’s requests are related to addiction.

30. Which of the following is useful for treatment of cancer pain?
   a. Ibuprofen (Motrin).
   b. Hydromorphone (Dilaudid).
   c. Gabapentin (Neurontin).
   d. All of the above.

31. The most accurate judge of the intensity of the patient’s pain is:
   a. the treating physician.
   b. the patient’s primary nurse.
   c. the patient.
   d. the pharmacist.
   e. the patient’s spouse or family.

32. Which of the following describes the best approach for cultural considerations in caring for patients in pain:
   a. There are no longer cultural influences in the U.S. due to the diversity of the population.
   b. Cultural influences can be determined by an individual’s ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
   c. Patients should be individually assessed to determine cultural influences.
   d. Cultural influences can be determined by an individual’s socioeconomic status (e.g., blue collar workers report more pain than white collar workers).

33. How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem?
   a. < 1%   b. 5 – 15%   c. 25 - 50%   d. 75 - 100%

34. The time to peak effect for morphine given IV is _____:
   a. 15 min.   b. 45 min.   c. 1 hour   d. 2 hours

35. The time to peak effect for morphine given orally is _____:
   a. 5 min.   b. 30 min.   c. 1 – 2 hours   d. 3 hours

36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following _____:
   a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.
   b. Impaired control over drug use, compulsive use, and craving.
   c. The need for higher doses to achieve the same effect.
   d. a and b.
Case Studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication. Directions: Please select one answer for each question.

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

A. On the patient’s record you must mark his pain on the scale below.

Circle the number that represents your assessment of Andrew’s pain.

<table>
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<tr>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
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<tbody>
<tr>
<td>No pain/discomfort</td>
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<td></td>
<td></td>
<td>Worst Pain/discomfort</td>
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</tbody>
</table>

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician’s order for analgesia is “morphine IV 1-3 mg q1h PRN pain relief.”

Check the action you will take at this time.
1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.

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

A. On the patient’s record you must mark his pain on the scale below.

Circle the number that represents your assessment of Andrew’s pain.

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<tr>
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<tr>
<td>No pain/discomfort</td>
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<td>Worst Pain/discomfort</td>
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</table>

Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician’s order for analgesia is “morphine IV 1-3 mg q1h PRN pain relief.”

Check the action you will take at this time.
1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.
Appendix D

The Clinical Decision-Making Questionnaire in Pain Management (CDMPQ)
The Clinical Decision-Making Questionnaire in Pain Management (CDMPQ)

Given that all of the patients have the same degree of pain using the following scale (1–5) rate the time and energy you would choose to spend managing the pain of the following patients (1=little time and energy, 5=maximum time and energy).

<table>
<thead>
<tr>
<th>Patients condition</th>
<th>1</th>
<th>2</th>
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<tr>
<td>Cancer</td>
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<td>Substance abuse</td>
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<td>AIDS</td>
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<td>Multiple trauma</td>
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<tr>
<td>Suicide attempt</td>
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<td>Elderly patients</td>
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<td>Renal patients</td>
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<tr>
<td>Diabetes</td>
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<td>General surgery</td>
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<tr>
<td>Chronic pain</td>
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<td>Laparoscopic surgery</td>
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</table>
Appendix E

Additional Resources About Pain Management
Additional Resources about Pain Management

Answers to this questionnaire will be posted in the nursing conference room in about one month. We would like to thank you for your time and effort in participating in this research study.

Please feel free to contact the study team or visit the websites below for more information.

Pain BC
http://www.painbc.ca

Canadian Pain Society
http://www.canadianpainsociety.ca/en/

Canadian Pain Coalition
http://prc.canadianpaincoalition.ca/en/
Appendix F

Letter of Initial Contact
Letter of Introduction to the Nursing Operations Leader

Medicine Operations Leader
St. Paul’s Hospital
Vancouver, BC

Dear Shannon,

My name is Michelle Wong. I am a registered nurse working in the area of Chronic Pain. I am currently completing my Masters of Science in Nursing at the University of British Columbia. As part of my graduate thesis, I am interested in conducting a study on Nurses’ Knowledge and Attitudes Regarding Pain Management in the Medical Unit.

Why this study is important?

One in five adults suffer from chronic pain (Moulin, Clark, Speechley, et al., 2002) and fifty percent of older adults have reported experiencing chronic pain (Helme & Gibson, 2001). Pain is one of the most distressing symptoms for both patients and caregivers (Gloth, 2001) however patients continue to suffer from poorly managed pain (Herr, Titler, Schilling et al., 2004; Horgas & Yoon, 2008).

Nurses spend the most time with patients than any other member of the health care team and can be a major contributor to adequate pain control. With increased knowledge and education towards pain management, nurses can be an advocate and the cornerstone for pain management. Given their important role, it is central to understand RNs and LPNs knowledge and attitudes regarding pain management on the medical unit. The medical unit is a desirable site for this research because of the high percentage of older adults who are admitted in this unit.

What this study involves?

The research will include a census of all RNs and LPNs who work in the medical unit at St. Paul’s. Each nurse will complete a paper questionnaire that will take about 15 minutes to complete.
The questionnaire includes:

i) **Demographic profile** (age, professional experience, pain background, level of education);

ii) **Knowledge and Attitudes Survey Regarding Pain** (KASRP), to assess the nurses knowledge and attitudes regarding pain management and lastly;

iii) **Clinical Decision-Making Questionnaire in Pain** (CDMPQ), to capture a clinicians time and energy they would spend managing pain depending on the patients conditions.

If feasible, I would like to extend an invitation to all medical nurses to participate in this study. I would like to display posters on the nursing unit bulletin boards that remind nurses about this study. I would also like to make visits to the medical units during morning rounds to describe the study briefly and encourage participation in this research study.

No names or identifying information will be asked of nurses on the questionnaire. All data will be kept secured in a locked filing cabinet and information put into the computer will be password protected, encrypted and only those on the research committee will have access to. Results of the study may be published in a nursing research journal and the study findings will provide you with a more complete picture of nurses’ knowledge and attitudes in the medical unit and possible areas where pain education is appropriate.

Sincerely,

Michelle Wong, RN, MSN student
Appendix G

Advertisement
Medical RNs and LPNs, we need your help!

What do you know about PAIN?

Nurses’ Knowledge and Attitudes Regarding Pain Management in the Medical Unit

Please pick up your questionnaire at the nursing station!

Will take less than 15 minutes

Chocolate is included for your time and consideration in this study

Contact Information

Primary Investigator:
Tarnia Taverner, RN, PhD,
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Co-Investigator:
Michelle Wong, RN

This is a UBC study

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THE UNIVERSITY OF BRITISH COLUMBIA

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