Barriers to Effective Pain Management

in Adult Patients in Bhutan

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Abstract

This analytical descriptive study aimed to explore the patient-related barriers to effective pain management and to find out the knowledge and attitudes of the nurses regarding pain management. The subjects included 180 patients and 82 nurses from eleven district hospitals and the national referral hospital. The subjects were selected by using non-probability quota sampling. Data were obtained by face-to-face interview lasting for 20-30 minutes in case of patients and by a written questionnaire in case of the nurses. Modified Brief Pain Inventory, Barrier Questionnaire and Information Questionnaire were used for the patients and Nurses Knowledge and Attitude Regarding Pain Questionnaire and Information Questionnaire for the nurses. Collected data were analyzed using descriptive statistics, ANOVA and independent t-test.

Findings indicated that for adult patients in Bhutan, the three barriers with the highest mean scores were; pain indicates disease progression, fear of tolerance and pain medications given only at specific times. In addition it was found that patients with higher levels of education and the Lhostham and Ngalong ethnic groups had more barriers related to the fear of side effects. Although 99.4% of the patients had pain at the time of interview, only 81.7% received analgesics and the most commonly prescribed analgesic was paracetamol. In about 50% of the patients pain was not relieved completely by the prescribed analgesic.

Similar to other studies findings in this study indicated that nurses had inadequate knowledge in pain management especially in drug and non-drug interventions, addiction and pain assessment. Very few nurses (14.6%) had the opportunity to attend courses on pain management. This study also showed that nurses with higher levels of education had better knowledge in pain management.

This study recommends the use of numeric pain rating scales and the institution of a systematic pain assessment protocol by making pain the fifth vital sign. Brochures and pamphlets on barriers to pain management must be developed both in English and in Dzongkha and made available to the patients and relatives. Workshops and seminars on current developments in pain management must be organized for the nurses and other health care providers. Active communication between the service providers and the receivers must be encouraged. There must be separate number of hours allocated to pain management in the nursing curriculum.

It is hoped that the findings of this study would motivate the Bhutanese nurses to explore and learn more about pain and pain management and improve the quality of lives of those who are griped by this menace. For the patients it is hoped that these findings can encourage them to seek more information and clarify their doubts.

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CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

Pain is increasingly being recognized as a priority by both national and international agencies. For example, the American Pain Society, the National Institutes of Health and the World Health Organization have all contributed publications, guidelines and consensus conferences focused on pain (McCaffery & Pasero, 2001). Nevertheless, pain is still shrouded with mystery, a phenomenon that is yet to be fully explored and understood.

Pain and suffering are universal, a multidimensional phenomena that varies within each individual and with each painful experience. Studies suggested that up to 75% of patients experienced moderate to severe pain, which was not relieved adequately in many cases (Donovan, Dillon & McGuire 1987; Melzack et al., 1987). A study in Finland (Mantyselka et al., 2001) showed that two out of every five visits to a primary care physician (40%) were due to pain and that pain was a major health care problem. According to a recent study by Fischman (2000), 50 million Americans (15-20%) live with some form of chronic pain and that an estimated 9% of the adult population suffers from moderate to severe non-cancer related chronic pain (American Pain Society, 1999). Out of these just over half of them report having their pain under control.

The presence of pain has adverse effects on the patient's quality of life as well as the family's ability to provide appropriate support. Seeing the effect of pain on their loved ones, makes families suffer as well. Sometimes they are perplexed as to what

they can do to relieve the pain. It has been demonstrated that the severe multidimensional impact of chronic pain, relating to the quality of life of patients with chronic non-malignant pain, is among the lowest observed for any medical condition (Beckera, Thomsena, Olsena, Sjgrena, & Eriksena, 1997). Patients with chronic pain had used the health care system five times more than a pain-free population (Beckera et al., 1997). Incidences of unrelieved pain continue to remain high despite years of attention from both clinicians and researchers (Cleeland, 1994). One reason for this involves patient's beliefs about reporting pain and using analgesics (Ward et al., 1993; Ward & Hernandez, 1994).

Although there are many studies and much literature on pain, pain assessment and management seems to be one of the weakest areas in patient care. Many studies and articles stress upon the inadequacy of pain management (McCaffery & Ferrell, 1996; Coyne et al., 1999; Dahl, 2000). Clearly awareness of the problem of inadequate pain management is growing, but lack of knowledge is only one reason why patients are undermedicated. Other reasons include the misconceptions and myths (barriers) surrounding this phenomenon.

Previous studies (Ward et al., 1993; Ward & Hernandez, 1994; McCaffery & Ferrell, 1996) have identified nine patient-related barriers; fear of addiction, fear of tolerance, good patients do not complain of pain, complaint of pain may distract the physician, fear of injection, fear of side effects, pain medications given only at specific time, accepting pain because of fatalism, and pain indicates disease progression. Most of these barriers have been found to be present in western (Ward et al., 1993; Ward & Gatwood, 1994; McCaffery & Ferrell, 1996; Breitbart et al., 1998; Ward Carlson-Dakes, Hughes, Kwekkeboom, & Donovan, 1998; Gunnarsdottir, 2002; Yates et al., 2002) as well as eastern countries (Chung, French & Chan, 1999; Wills &

Wootton, 1999; Lin, 2000). It was also found that people who felt strongly about these barriers had higher incidence of unrelieved pain (Ward et al., 1998). Thus in spite of the availability of a wide range of safe and potent analgesics, patients still continue to suffer from pain. This need not be if the misconceptions and myths are clearly understood and acted upon. It is sad to see that even hospitalized patients are enduring pain. It is also intriguing to note that in spite of living in an era of knowledge explosion, such misconceptions still exist. Exploring the barriers that lead to ineffective pain management would help not only the patients and nurses but also all human kind in understanding and devising ways to deal with this universal phenomenon. Effective management of pain should be a universal response by health professionals as persistent and unresolved pain can result in exhaustion, suffering, and debilitation.

In Bhutan, the health of the population has improved significantly in all aspects (A Report: National Health Survey, 2000). Inspite of all this not much progress has been made in the area of research, especially in nursing. While so many studies have been conducted on patient-related barriers to pain management in most of the countries, there is no known study on this in Bhutan, as evidenced by library search, internet search, word of mouth and information unit search. Discussions and personal interviews with the Director of Public Health, the Joint Director of Medical Education, the medical and nursing superintendents and nurse educators of the Royal Institute of Health Sciences (the only institute which trains nurses, health workers and other paramedical personnel in the country), have revealed that effective pain management is an issue that needs to be looked into if we are to give quality care to the patients. Inadequate research articles on pain, lack of pain assessment tools and inadequate coverage on pain in the nursing curriculum (GNM Curriculum, 1998) all

point to the fact that pain management is a problem. Although it is difficult to find out how many people come to the hospital or are admitted to the hospital because of pain, headache has been recorded as one of the reasons why people visit the health centers. In Bhutan, in the year 2000, headache was the third most common cases (10.2%) treated at the Basic Health Units and also the third most common cases (4.64%) treated at the hospitals (Statistical Yearbook of Bhutan, 2001). This indicates that pain is one of the most common reasons why people visit the health centers. Moreover, in the nursing curricula, there are no separate hours allocated to pain and pain management (GNM curriculum, 1998). Furthermore, at present pain is not assessed regularly and the use of pain assessment scales are yet to be instituted.

However, the Health Department has realized the importance and seriousness of pain and is seriously considering instituting pain management protocols within the next few years. These facts point to the importance of understanding the patient-related and nurse-related barriers first before designing educational activities. Studies continue to highlight the inadequate knowledge of nurses in pain management, especially in the areas of addictive properties of narcotics, pain assessment, characteristics of chronic pain and occurrences of respiratory depression (Brockopp et al., 1998; Erniyati, 2002). In a study by McCaffery and Ferrell (1995), regarding nurses' knowledge about cancer pain, it was found that in all five countries under study, Australia, Canada, Japan, Spain and United States, nurses had inadequate knowledge about the WHO's regimen for cancer pain relief and pain management. For example 11%-16% of nurses in Canada, Australia and USA, 18.7% in Japan and 51. 1% in Spain believed that placebo could be used to determine if the pain was real. As is evident, many nurses lack the knowledge and skills to manage pain effectively. However Field, (1996b) found that although nurses had adequate knowledge of pain

assessment tools, only few used them to assess patients' pain. This fact touches the issue of attitude of nurses towards pain management. Camp and O'Sullivan (1987) reported that nurses documented less than 50% of the patients' complaints regarding pain on medical, surgical and oncology units. Nurses were also found to undermine patients' report of pain (Wakefield, 1995; Field, 1996a; Caar et al., 1997) and carry out inappropriate assessment of patients' need of pain relief (Burokas, 1985).

Although lack of importance attached to pain management, lack of knowledge and attitude towards pain management, nurse-patient ratio, lack of physician support (Brockopp et al., 1998) and lack of resources (Niekert & Martin, 2003) have been identified as important nurse-related barriers to pain management, lack of knowledge and attitude especially in pain assessment and administration of opioid analgesics have been found to be the most significant barrier (McCaffery & Ferrell, 1997). Some "nurses' knowledge surveys" about pain management reflected improved changes in nursing practice; results of other surveys remained the same (McCaffery & Ferrell, 1997). For example, findings of surveys on addiction conducted in 1988 were similar to the ones conducted in 1995 and surveys about assessment and use of analgesics conducted in 1990 were similar to the ones conducted in 1995. These findings indicate that lack of knowledge and inappropriate attitude regarding pain management still exist among the nurses.

Understanding the patient-related and nurse-related barriers may not in itself be enough to guarantee improvement in patient care, nevertheless it will be the first step in the right direction. Patient-related and nurse-related barriers may be some of the many factors that can lead to the problem of undertreatment of pain despite the availability of drugs and other therapies to manage pain, with the result that patients still suffer needlessly (Dahl, 2000).

Huang, Cunningham, Laurito, and Chen (2001) carried out a literature search from 1996 to 2000 on Medline and CINAHL nursing database and found that the incidence of moderate to severe pain with cardiac, abdominal and orthopedic inpatient procedures were as high as 25% to 50% and the incidence of moderate pain after ambulatory procedures was 25% or higher. They concluded that despite the advances in pain assessment and management the incidence of pain remained high. This fact clearly calls for a re-look at the present pain management approach. Therefore in order to avoid falls due to walking before learning how to crawl, a careful exploration of the barriers to pain management is essential. Although many studies have been conducted to identify the barriers to pain management, the findings may not hold true for Bhutan because of the differences in culture, tradition, and ethnicity. Therefore this study focused on the patient-related and nurse-related barriers in Bhutan, the effect of certain demographic variables on the patient-related and nurse-related barriers and sources of information regarding the barriers to effective pain management. Identifying the sources of information can help the nurse educators and policy makers to design appropriate educational activities and pain management protocols to target these sources first and thus, help in the rational use of resources.

Objectives

The objectives of the study were:

1. To explore patient-related barriers to effective pain management in adult patients in Bhutan.

2. To explore the knowledge and attitudes of nurses regarding effective pain management.

3. To examine the mean difference of the patient-related and nurse-related barriers to pain management determined by the selected demographic variables.

4. To determine the sources of information related to the patient-related and nurse-related barriers to effective pain management.

Research Questions

The following were the research questions:

1. To what extent do adult patients in Bhutan report barriers to effective pain management?

2. What is the level of knowledge and attitudes of nurses regarding effective pain management?

3. What is the mean difference of the patient-related and nurse-related barriers to pain management scores determined by the selected demographic variables?

4. What are the sources of information related to the patient-related and nurse-related barriers to effective pain management?

Conceptual Framework

Previous studies indicate that certain demographic factors can affect the patient-related barriers to pain management. Factors such as age (Ward, et al., 1993; Ward et al., 1998) has been found to have a positive relationship with the barriers while other factors such as education (Ward, et al., 1993; Roth, Punchb & Bachmanc, 2001) has shown a negative relationship. In terms of gender, women were found to be more concerned about side effects than men (Ward, et al., 1993). In describing the theoretical model of cancer pain experience, Petpichetchian (2001) stated that the cognitive pain appraisals, perceived meaning of pain, and perceived control over pain

could be influenced by situational factors, such as stage of the disease and personal characteristics such as age and gender. As susceptibility to disease and pain generally vary in relation to the demographic factors (Campbell, 2002), it is imperative to find out the impact these demographic factors have on the patient-related and nurse-related barriers to pain management before devising ways to manage pain better. Allock, (1996) found that one of the main factors affecting assessment of postoperative pain was the characteristic of the nurse such as age, ethnicity, experience, personal experience with pain and educational experiences. Even the most current article on barriers to effective pain management (Niekerk & Martin, 2003) emphasizes the need to include barriers to pain management in the education of nurses. These facts have been used to guide the conceptualization of this study. The framework presented below (Fig. 1-1) was used to explore the concepts in the following way:

Barriers to Effective Pain Management

Studies have highlighted three major types of barriers to effective pain management, namely, patient-related barriers, health professional-related barriers and health care system barriers. This study focused on patient-related and nurse-related barriers only.

Patient-related barriers

The patient-related barriers included, fear of addiction, fear of tolerance, good patients do not complain, complaints of pain may distract the physician, fear of injection, fear of side effects, accepting pain because of fatalism, pain indicates disease progression and pain medication given only at specific times. This study tried to explore whether these barriers were present in the adult patients in Bhutan, as well as determine what other barriers patients in Bhutan have to effective pain management
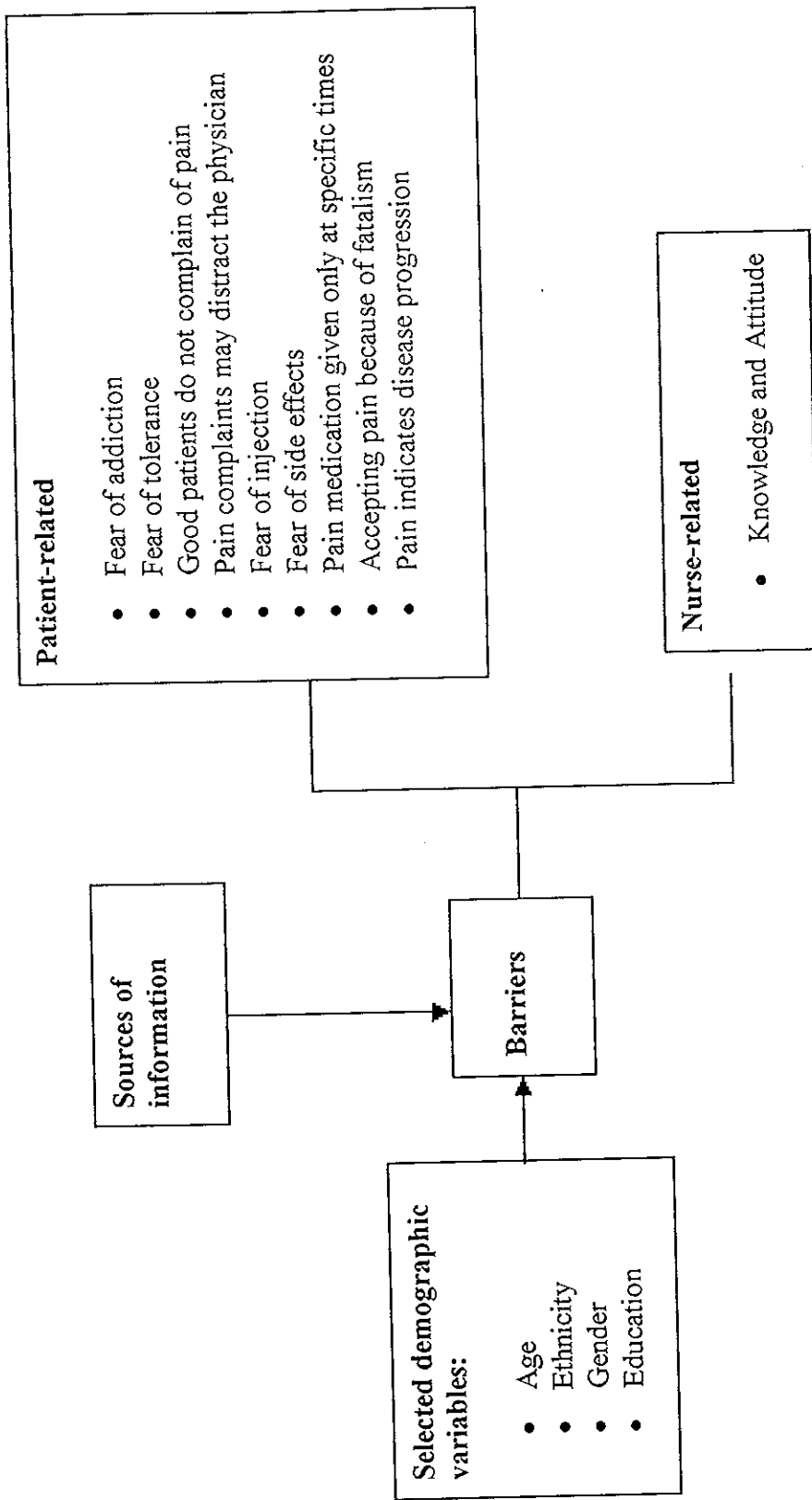
Figure 1-1 Conceptual framework

Nurse-related barriers

Nurse related barriers included knowledge and attitudes of the nurse, especially in the area of pain assessment, pain medication and pain management. Nurses are the largest group of health care professionals to provide direct care to the patients. In most cases nurses are the first health care professional to assess and identify patient problems, to liaise with other health care teams and to assess and provide interventions for pain relief. They are therefore one of the key care providers. Thus it is imperative that nurses posses sound knowledge and positive attitude towards pain management, hence this study focused on nurse-related barriers and patient-related barriers to effective pain management.

Selected Demographic Factors

Selected demographic factors included age, gender, ethnicity and level of education. Attempts were made to determine the effect of these four factors on the patient-related and nurse-related barriers.

Sources of Information

This included information related to the barriers that patients and nurses elicited. How they came to know about this information was explored. Possible sources such as family, friends, nurses, physicians, internet, books, and articles were included.

People today focus on what is black and white. They believe that either you are sick or you are well. They do not realize that pain is such a condition that can exist in a very grey area of medicine. "There may be no evidence of disease or injury but the pain can still be there. The surgery may have been successful but the person can still have pain. The injury may be completely healed but the pain may still be there. So it is important to drop any preconceived ideas about pain but look at what it can do to the

lives of those who must live with it and their families" (Cowan, 2000, p. 21). In order to do this, one must understand how demographic factors including age, ethnicity, gender, educational level, and information received from various sources can affect the patient related barriers to pain management.

Hypotheses

1. Selected demographic variables have an effect on the patient-related barriers to pain management.

2. Selected demographic variables have an effect on the nurse-related barriers to pain management.

Operational Definitions

Patient-related barriers to effective pain management is a self-report of misconceptions by the patient, which prevent adequate pain management. The presence of the following nine misconceptions were assessed by using the Barrier Questionnaire, a modified version of the barrier questionnaire Taiwan by Chung et al., 1999. It was originally developed by Ward et al. in 1993. The nine misconceptions included: (1) fear of addiction, (2) fear of tolerance, (3) good patients do not complain, (4) complaints of pain may distract the physician, (5) fear of injection, (6) fear of side effects, (7) pain medication given only at specific times, (8) accepting pain because of fatalism, and (9) pain indicates disease progression

Sources of information are the misconceptions regarding the patient-related and nurse-related barriers, which directly or indirectly reach the patients and nurses via the physicians, nurses, family, friends, books, articles, and internet. This source of information was assessed by using the information questionnaire developed by the researcher.

Nurse-related barriers to pain management is a self report of the knowledge and attitude of the nurses regarding effective pain management. This knowledge and attitude was assessed by the Nurses' Knowledge and Attitudes Survey Regarding Pain Questionnaire which was developed by McCaffery and Ferrell in 1987.

Significance of the Study

Considering the emphasis placed on the health services by the Royal Government of Bhutan and the limitation of basic research information on health issues, especially in the area of pain, the findings of this study will have direct relevance to Bhutan. The following are the significance of the study:

For nursing practice:

(a) It can create awareness about the multidimensional aspects of pain and pain management and enhance the effectiveness of clinical services.

(b) It can help in rendering quality care to the patients.

For nursing education:

(a) It can help to justify why pain deserves to be allocated separate number of hours in the nursing curricula.

(b) It can help to justify the need to organize educational activities on pain and pain management.

For nursing research:

(a) It can provide baseline data for future research on pain.

(b) It can act as a basis for the development of appropriate pain management strategy by supplementing data to create tools to measure pain in the future.

(c) It can help in the efficient use of resources.

Summary

Pain is still shrouded with mystery, a phenomenon that is yet to be fully explored and understood and many studies and articles continue to stress upon the inadequacy of pain management. Although there are many studies and much literature on pain, yet pain assessment and management seems to be one of the weakest areas in patient care. However pain is increasingly being recognized as a priority by both national and international agencies as persistent and unresolved pain can result in exhaustion, suffering and debilitation not only to the concerned individual but also to the family members.

In Bhutan there are no studies on pain and health care providers have inadequate knowledge and skills regarding effective pain management. Certain demographic factors such as age, ethnicity, gender and education have been found to affect the patient-related and nurse-related barriers to pain management.

CHAPTER 2

LITERATURE REVIEW

This chapter will explore the definition and meaning of pain. It will highlight the problems that can arise as a result of unrelieved and untreated pain. Furthermore, this chapter will explore selected demographic factors such as age, ethnicity, gender and education, which can greatly affect the patient-related and the nurse-related barriers to pain management. Sources of information will be explored and their relationship to the patient-related and nurse-related barriers discussed. The three categories of barriers to pain management, healthcare system barriers, health professional-related barriers and patient-related barriers, will be discussed focusing more on the patient-related and the nurse-related barriers. The instruments used in this study will also be discussed. Finally a brief background on Bhutan and pain in the Bhutanese context will be presented.

Definition of Pain

Pain has been defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" (Merskey & Bogduk, 1994, pp. 210). According to McCaffery (1972, pp. 8) "pain is whatever the experiencing person says it is and exists whenever he or she says it does". From these definitions it is clear that pain is something, which can affect ones whole being and its full effect can be understood only by the individual who has the pain. Pain can cause physical, mental, social, psychological and spiritual damage.

Meaning of Pain

Lipowski (as cited in Petpichetchian, 2001, p. 24) defined meaning as, the subjective significance of all disease related information that influence the patient's reflections of experiences, knowledge, cultural background and beliefs about being sick. According to a grounded theory study (Johansson, 1999) conducted in Sweden to explore the meanings of pain, the following words and phrases emerged. Pain meant; something that is threatening, unpredictable, deconstructed, bizarre and an invader. Pain was thought to be related with; work, external elements, tension and worries. It was thought to be, predisposed, having physical origin and as a punishment.

Problems of Unrelieved and Undertreated Pain

Unrelieved pain has enormous physiological and psychological effect on the patients. Physiologically pain can, impair breathing, coughing and predispose the patients to respiratory complications (Justins & Richardson, 1991). Hypertension and bradycardia produced in response to pain may be harmful to a patient with cardiac disease and the increase in cerebral blood flow as a result of pain may be dangerous for a head injury patient. Pain can restrict mobility and increase the development of pressure sores and thromboembolism (Dahl, 2000). It can also impair gastrointestinal motility (Justins & Richardson, 1991; Dahl, 2000).

Psychologically pain can cause, distress, suffering and sleep deprivation, which can lead to anxiety, frustration and decreased quality of life (Justins & Richardson, 1991; McCaffery & Pasero, 2001). Pain can slow convalescence and increase the length of hospital stay resulting in lengthening the need for increased nursing attention and increased spending on medicare thereby affecting socioeconomically (Justins & Richardson, 1991). Thus consumer satisfaction is reduced and patients face future

medical interventions with concern (Justins & Richardson, 1991; Cushieri, Hennessy, Greenhalgh, Rowley, & Grace, 1996). From the patients' perspective the most important consequences of unrelieved pain are, discomfort and suffering (Duncan & Pozehl, 2000).

Brown (1989) describes pain as one of the biggest postoperative problems, which can have detrimental effects. Pain has been found, to slow down the recovery from surgery, contribute to post surgery morbidity, impede return of normal pulmonary function, cause inability to cough and bronchospasm. Pain induced accelerated catecholamine response, can increase systemic vascular resistance. Pain can also cause nausea, vomiting, further post operative ileus, promote immobility and increase cardiac work and myocardial oxygen consumption. Pain can increase patient's irritability and agitation and lead to inadvertent extubation, disconnection of arterial and intravenous lines and disruption of continuous post operative monitoring (Brown, 1989). A study by Oden (1989) showed that pain can interfere with sleep and in another study by Gaston-Johansson and Fall-Dickson (1995) pain has been found to cause unnecessary suffering and psychological morbidity such as anxiety, depression, fatigue, insomnia and feelings of helplessness.

Yates et al. (2002) studied a group of cancer patients who had experienced pain in the past 24 hours and found that most of the patients reported that their pain had affected their well-being. Nearly half the patients (n=55) reported that, pain had an extreme effect on their ability to sleep (49.1%) and move (49.0%) and it made them feel exhausted (56.4%), depressed (41.8%), worried (38.2%), frightened (30.9%), alone (29.1%) and angry (18.2%). Similar findings on sleep were reported by Pilowsky, Crettenden and Townley (1985) where they studied the sleeping habits in one hundred outpatients in a multidisciplinary pain clinic. Their findings suggest that reported sleep disturbance might

provide an index of impairment and act as an indicator of psychological disturbance in chronic pain patients. In another study by Moffitt, Kalucy, Kalucy, Baun, and Cooke (1991) a multiple regression analysis was used with variables relevant to sleeping problems from a large community health survey in South Australia. The variables that were found to be most strongly correlated with sleep problems were, in order of importance, pain, anxiety, age, somatic health and annual household income, all of which accounted for 22% of the variance.

Barriers to Effective Pain Management

The Agency for Healthcare Research and Quality divides the barriers to effective pain management into three categories, the healthcare system, the healthcare professionals and the patients (McCaffery & Pasero, 2001). However this study has mainly focused on the patient-related and nurse-related barriers.

1. Healthcare system barriers

Historically pain has never been a priority within the healthcare system. Even today most hospitals do not have specific policies and procedures to guide the assessment and management of pain (McCaffery & Pasero, 2001). There is lack of information regarding pain in the medical and nursing curricula. The disease oriented health care model and fragmentation of care due to involvement of multiple specialists have further added to this barrier (Cowan, 2000). Niekerk and Martin (2003) found that one of the most frequently cited healthcare system barrier was patient to nurse ratio.

2. Health professional-related barriers

The general public assumes and the patients hope that nurses and physicians, by virtue of their education and experience, posses a comprehensive knowledge of pain management that is readily translated into clinical practice. However in majority of the

cases certain barriers prevent this from happening. The following are some of the health professional-related barriers that have been identified by various researchers (McCaffery & Ferrell, 1996; Coyne et al., 1999; Watt-Watson, Garfinkel, Gallop, Stevens, & Streine 2000): inadequate knowledge, inconsistency in the use of assessment tool, reassessment of pain rarely done, misjudging severity of pain, incorrect selection of analgesia, inadequate administration of analgesia and lack of communication. This study has provided data that suggest that deficiencies in communication between patients and health care professionals and family members may be an important factor that contribute to inadequate management of pain. More than one-half of the patients in this study who had experienced pain in the past 24 hours had not spoken to any one about their pain. Responses to attitudinal items highlighting the reluctance of many patients to report pain, and their willingness to wait until the pain was bad before reporting it, further emphasize the importance of effective communication regarding pain. As this study has also found that 60% of the sample wanted to know more about pain relieving medication, some fundamental issues relating to communication between health care professionals and patients require urgent attention, if more effective pain management is to be achieved, Yates et al. (2002).

2.1. Nurse-related barriers

This study specifically focused on nurse-related barriers to effective pain management. Although pain management is best achieved through an interdisciplinary approach, nurses are the cornerstones of this care. Nurses spend more time with patients who have pain than any other members of the health care team (Dalton, 1989). It is therefore imperative that nurses possess accurate and current knowledge about pain assessment and management, about patient-related barriers and about their own

deficiencies and limitations. Studies (McCaffery & Ferrell, 1996; Coyne et al., 1999) suggest that nurses possessed less than adequate knowledge of pain assessment and management strategies. Nurses did not use a uniform standard tool for pain assessment and pain assessment was not carried out and recorded regularly. Most nurses did not record and consider patient's self report of pain if they found that the patient's behavior was smiling or joking (McCaffery & Ferrell, 1996). Another study by the same authors (1997) revealed that less than one-half of the nurses surveyed understood that self-report of pain is the single-most reliable indicator of pain. This study also revealed that the longer the patient's received opioid the more concerned the nurses became regarding causing addiction. From these facts it is evident that nurses still have inadequate knowledge in pain management and those who do have adequate knowledge do not seem to apply it consistently.

Several findings (McCaffery & Ferrell, 1996; Coyne et al., 1999) indicate that current knowledge and recommendations concerning pain assessment and management are inadequately covered in nursing curricula. In a study by Watt-Watson, et al., (2000), it was found that although patients reported moderate to severe pain, they received only 47% of their prescribed analgesia and nurses have been found to administer less than half of the average maximum dose prescribed. In a similar study with 47 patients, Barnason et al., (1998), found that a majority of the patients (84%) had not received the maximum amount of analgesia ordered by the physician.

3. Patient-related barriers

Large numbers of patients have misconceptions and concerns about using analgesics for pain. As a result patients' first report of pain may be delayed. Sometimes patients themselves are reluctant to report pain. Studies (Ward et al., 1993; Ward &

Hernandez, 1994; McCaffery & Ferrell, 1996) have identified the following factors as the

patient-related barriers to effective pain management as shown in Fig. 2-1.
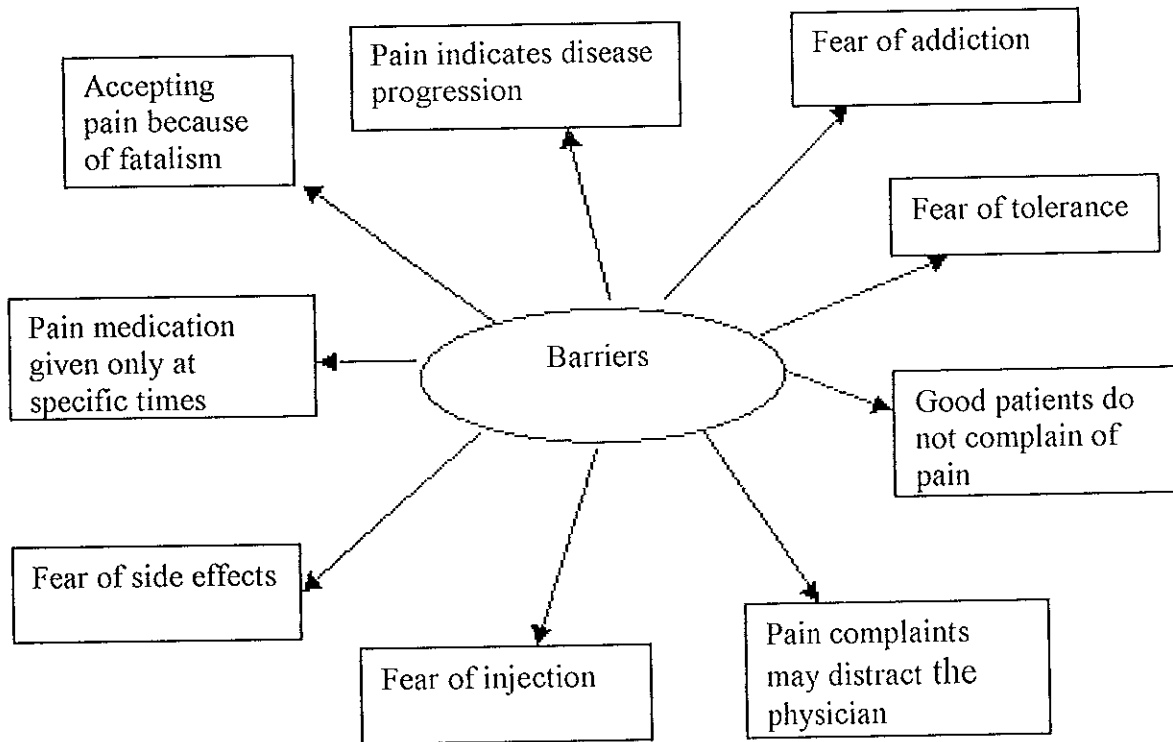
Figure 2-1 Patient-related barriers.

3.1. Fear of addiction

Misconceptions about addiction continue to be the most problematic aspect

of analgesic treatment (Ward et al., 1993; Chung et al., 1999). Addiction is a psycho

behavioral phenomenon with possible genetic influences characterized by excessive drug

use, non-medical drug use and continued drug use despite the presence or threat of

physiologic or psychological harm. It is the psychologic dependence on drugs (Patt,

2000), a pattern of compulsive drug use characterized by continued craving for an

analgesic and the need to use the analgesic for effects other than pain relief (McCaffery &

Pasero, 2001). Despite the fact that studies continuously show that true addiction is

extremely rare, less than 1% (Paice, 1991; Patt, 2000), fear of addiction continues to be one of the most difficult barriers to overcome. The American Geriatrics Society states that as many as 80% of nursing home residents may have substantial pain that is under treated. When using high doses of potent medication, including morphine and other narcotics to relieve pain, physicians worried about the possibility of addiction (National Institutes of Health, 1998).

3.2. Fear of tolerance

Saving the "strong stuff for later" when the pain really gets severe is another misconception that patients have (Chung et al., 1999). Tolerance is a physical dependence, where a larger dose of analgesic is required to maintain the original effect. It is revealed in patients taking opioid for a long time, when the abrupt discontinuation of it produces withdrawal symptoms (Paice, 1991; Patt, 2000). However an increase in medication is often an indication of disease progression instead of tolerance development (Chung et al., 1999).

3.3. Good patients do not complain of pain, and complaints of pain may distract the physician

In a study by Ward et al., (1993), it was found that patients believed that "good patients" did not complain about pain and that complain of pain may in fact distract the physician from curing ones illness. This belief was mostly evident among the older, lower income and lower level of education group. In another study by Wills and Wootton (1999), out of 48 patients, 12 (25%) reported that they would avoid talking about pain while they were hospitalized, 10 (21%) said that they would be distracting the physicians by reporting their pain and 26 (54%) said that they would not disturb the nurses, thinking that nurses were busy with other patients.

3.4. Fear of injection

Patients also feared injections and therefore did not report pain. They perceived that this was the only route for pain medication and did not realize that the most common route of administering analgesics is through the oral route and not injection (Chung et al., 1999). Intraspinal and intravenous routes have been found to be effective and safer than the intramuscular route as is the current practice in most of the cases (McCaffery & Pasero, 2001). These ignorance and fears can prevent the patients from asking pain medication (Wills & Wootton, 1999).

3.5. Fear of side effects

The most common side effects of narcotic analgesics include constipation, nausea, and emesis (Sheehan & Forman, 2000; Chan, 2001; Yates et al., 2002; Bick, 2003). Drowsiness and confusion often occur when narcotic analgesics are first taken. With time, these side effects tend to diminish. A study by Wills and Wootton (1999) showed that 33% of the patients (n = 48) said that they would rather put up with the pain than with the side effects of the analgesics. This indicates that side effects of the analgesics are a concern to the patients. Therefore proper management of these side effects must be carried out and "the hand that writes the opiate should also write the aperient order" (Kenner, 1994, p. 1285). Nurses and physicians rarely discussed side effects of pain medication with their patients (DeRond et al., 2000a).

3.6. Pain medications given only at specific times

Findings from Chung et al., (1999) state that some patients believe pain medications are only given at specified intervals and even if one is in severe pain one should not take an extra dose. Although many patients have pain continuously, analgesics

continue to be given prn rather than as scheduled doses at intervals to keep pain under control (McCaffery & Pasero, 2001).

3.7. Accepting pain because of fatalism

Fatalistic patients believed that pain is an inevitable consequence of disease and therefore one must simply accept it (Chung et al., 1999). In a study by Wills & Wootton, (1999), out of a sample of 48 patients, 38 (79%) believed that pain is unavoidable and part of every admission to hospital and felt that analgesics cannot control pain. Patients from non-industrialized countries believed that pain is an unavoidable part of life and must be endured in silence (Klein in Wills & Wootton, 1999).

3.8. Pain indicates disease progression

Although the perception that pain signifies disease progression may not be wrong, if patients have a certain degree of denial to avoid facing the fact that disease is progressing, they may deny the pain as well (Swenson, 1994). Such patients experience increased level of depression and anxiety. This can exacerbate the pain by various physiologic changes such as muscle spasm, vasoconstriction, visceral disturbances and release of pain producing substances (Ahles, Blanchard & Ruckdeschel, 1983).

Instruments

The barrier questionnaire has been used in several previous studies (Ward et al., 1993; Ward & Gatwood, 1994; Wills & Wootton, 1999; Lin, 2000; Gunnarsdottir et al., 2002). It has been found to be very reliable and valid. It was originally developed by Ward et al. in 1993. Two experts in pain management developed items to assess each of the eight items. Five items were generated for each of the seven barriers and eight items for the side effect barrier. Three other pain experts and four investigators who were not pain experts examined the items for clarity and categorized them into subscales. Only

thirty-one items correctly categorized by all the seven people were retained for the instrument. The instrument was then pilot tested with a sample of men and women diagnosed with various forms of cancer (n=106). Based on this pilot data items with lowered alpha were dropped and new items were written. Finally it resulted in twenty-seven items, three items each for the seven barriers and six items for the side effect barrier. The barrier questionnaire has excellent internal consistency ranging from 0.78 to 0.92 and good test-retest reliability with a split-half coefficient of 0.73 (Gunnarsdottir et al., 2002).

Later the above barrier questionnaire was modified by Lin and Ward (1995). They added another barrier about interval of taking analgesia, making a total of nine barriers. A modified version of the Taiwan version barrier questionnaire (Chung et al., 1999) was used for this study.

The brief pain inventory was first described by Cleeland and Ryan. It is a self-report instrument designed to assess the multidimensional nature of pain. It has been found to be very reliable and valid and easy to use across cultures and languages (Chapman & Syrjala, 2001). The goal of the brief pain inventory is to reduce the subjective intensity of pain and the disability that pain causes.

Nurses' knowledge and attitudes survey regarding pain questionnaire was developed by McCaffery and Ferrell in 1987. Since then it has been used extensively. It was recently revised and tested on 800 subjects (McCaffery & Ferrell, 2002). Content validity was established by review by pain experts. The content was derived from current standards of pain management such as the American Pain Society, the World Health Organization and the Agency for Health Care Policy and Research. Construct validity was established by comparing scores of nurses at various levels of expertise such as

students, new graduates, oncology nurses, graduate students and senior pain experts. Test

retest reliability was established (r = >.80) by repeat testing in a continuing class of staff

nurses (N = 60). Internal consistency reliability was established (alpha = > .70) with items

reflecting both knowledge and attitude domains (McCaffery & Ferrell, 2002).

Factors Affecting Patient Related Barriers to Pain Management

1. Age

The older one gets the more one tends to go along with the saying "no gain

without pain" and accept many things as part of the aging process. Most people are under

the impression that pain perception and sensitivity decreased with age and that pain is a

natural outcome of growing old. However results of studies on pain perception in the

elderly do not show age related difference in pain perception (McManus, 2000). Studies

by Ward, Golberg et al., (1993) and Ward, Carlson-Dakes et al., (1998) found that age

was positively related to the nine patient-related barriers and those who held strongly to

these barriers used less analgesics given their level of pain. This greatly affected their

level of pain.

Yates et al. (2002) reported significant age differences in reported pain severity,

with patients over 60 years reporting pain of significantly higher severity than those 60

years or less. Younger patients (60 years and under) were significantly more concerned

about side effects than older patients, $t_{(112)} = 2.89$, $P = 0.005$). In particular, they were

more concerned about nausea, vomiting, and constipation. More than 40 percent of

younger patients indicated they were very concerned about nausea compared to 24

percent of older patients. Younger patients were also more concerned about vomiting

(54.0% vs. 32.0%) and constipation (58.7% vs 34.0%) than older patients. Although not

significant, there was a trend for older patients to more strongly believe that pain has an

organic or physical basis, and for them to be more willing to tolerate pain. Moreover, older patients were significantly less knowledgeable about pain relieving medication than younger patients. About half the older patients (52.0%) identified that they knew nothing at all about pain relieving medication, compared with sixteen percent (15.9%) of younger patients (Yates et al., 2002). Similarly, age has been found to be predictors of pain knowledge in nurses (McCaffery et al., 1990; Brunier, Carson & Harrison, 1995; Allock, 1996; DeRond, De Wit, Van Dam, & Muller, 2000).

2. Ethnicity

Race is widely recognized as a key factor that influences health status. Race and ethnicity are important instruments for identifying social, psychological, biological and historical variations in humans (Riley et al., 2002). Therefore it is important to study about factors such as ethnicity, which is closely connected to race, to study the morbidity, mortality, health beliefs and behaviors (Drevdahl, Taylor & Phillips, 2001). A study by Drevdahl et al. (2001) revealed that out of 337 articles reviewed, 167 had race or ethnicity as variables and only five articles had attempted to define the variables. Moreover the methods used to determine a participant's race or ethnicity were unclear.

Ethnicity describes groups of people with distinguishing behaviors, culture, history, experience, ancestry and beliefs. It focuses on the distinction between groups of people based on behavior and culture as well as biological and physical characteristics. It also refers to those people who are not fully integrated or assimilated into the dominant culture. Ethnicity can influence the appraisal of pain and this can affect how one responds to pain emotionally and behaviorally (Edwards et al., 2001). Several studies (Melzack & Wall, 1994; Bromm & Desmedt, 1995; Moore & Brodsgaard, 1999; Edwards, Fillingim & Keefe, 2001; Riley et al., 2002) found that pain perceptions, beliefs and reactions have

been found to differ according to culture and ethnicity. Some ethnic groups are found to be more stoic about pain than others. For instance most health care providers consider Chinese patients as being more stoic and less vocal with regard to pain expression (Wills & Wootton, 1999). This may put them at risk of being undertreated for pain and thus affect their pain level because of unreported pain. Allock, (1996) found that one of the main factors affecting assessment of postoperative pain was the characteristic of the nurse such as ethnicity.

There are three distinct ethnic groups in Bhutan, Sharchops in the east, Ngalops in the west and the Lhotsams in the south. Within these three main groups there are other ethnic groups, such as Mangdips, kurteops, Khengpas and Bumthaps in the eastern and central valleys and the Layaps and Lunaps in the north (Namgyal, 1998). The researcher's experience is that regardless of their ethnicity, people from the rural communities were more stoic with regard to pain. They were more fatalistic and seldom reported pain unless asked. Their usual way of accepting pain as a part of the disease may put them at a greater risk of having unrelieved and increased level of pain. These beliefs and attitudes can act as a barrier to pain management.

3. Gender

Research consistently indicates that gender differences exist in pain perception. Many studies (National Institute of Health, 1998; Riley, Robinson, Wise, Myers, & Fillingin, 1998; Fillingin, Edwards, & Powel, 1999; Giles & Walker, 2000) have established gender differences on pain and pain management. Speakers at the conference on gender and pain at the National Institute of Health in Bethesda, Maryland (1998) stated that male and female brains process pain differently. The conference speaker, Karen Berkley, stated that women report pain more often and in more body regions.

Women also have more severe and more persistent pain and laboratory studies indicate that women say "ouch" before men to painful stimuli. Many cultures around the world permit girls to be emotional but discourage boys from showing pain. These attitudes can be carried into adulthood and can act as a barrier to pain management (National Institute of Health, 1998). According to Wise, Price, Myers, Helf, and Robinson (2002) males indicated significantly greater pain endurance than females and females showed lower threshold and tolerance to pain and hence were more willing to report pain than males. Morin, Lund, Villarroel, Clokie, and Feine (2000) stated that women found post surgical pain more intense than men but men were more disturbed than women by low levels of pain that lasted several days.

Men and women differed in their response to cognitive coping instructions (Keogh & Herdenfeldt, 2002) and men were found to be more tolerant to cold pressor pain and less sensitive to pain (Keogh, Hatton, & Ellery, 2000). In a comparative study of 40 subjects (20 males, 20 females) by Feine, Bushnell, Miron, and Duncan (1991), males were found to be more susceptible than females to psychological influences on pain perception. A review of 106 epidemiological studies of common recurrent pains for men and women and 13 population studies of menstruation pain through Medline and Psychlit searches revealed that women had more severe, more frequent and longer duration pain, were at greater risk for pain-related disability, stress and depression (Unruh, 1996). Allock, (1996) found that one of the main factors affecting assessment of postoperative pain were the personal characteristics of the nurse.

4. Education

It is expected that those with higher level of education be more aware with current development especially with things that deal with their health and life. This is supported

by Ward et al., (1993), where the researchers found that the misconceptions and barriers to effective pain were found to be more in those subjects with fewer years of education. Roth, Punchb and Bachmanc (2001) found that women with lower level of education had more pain, emotional suffering and functional impairment. Similarly level of education and continuing education sessions have been found to affect the knowledge and attitudes of nurses in pain management (Brunier et al., 1995; Bookbinder et al., 1996; Clarke et al., 1996; DeRond et al., 2000). According to Allock, (1996) one of the main factors affecting assessment of postoperative pain was the characteristic of the nurse, such as personal experience with pain and educational experiences.

5. Information

Most nurses believe that the pain following surgery will occur in the first 48 hours and will gradually subside. However in a study of 88 post-surgical patients, 31% reported that the pain persisted after the fourth postoperative day. Some health care providers mistakenly believe that if the patient showed some relief following a placebo, the pain was not real. A positive placebo response should not be interpreted as proof that pain does or does not exist, as all patients will respond, to some degree, to placebos (McCaffery & Pasero, 2001). These beliefs, views and notions of the health care providers can be directly or indirectly conveyed to the patients and thus act as a source of patient-related barrier. In a study about breast health information (Cornforth, 2002), 70% of the women said that they trusted health care providers as a credible source of information. This fact is clearly illustrated in the study by Yates et al. (2002) where about half (52.7%) of the oncology patients who were in pain in the past 24 hours had not spoken to anyone about pain relieving medication and those who did speak to someone were most likely to speak to nurses (34.5%) and sometimes to doctors (18.2%). Less than 10% of patients with pain

had discussed this pain with family or friends. This clearly shows that what nurses say has a tremendous impact on the patients and that patients were more willing to speak to nurses about their problems than to the other health care providers.

Family member's concerns and fears regarding addiction and tolerance have been found to have a great impact on the patient's pain management (Dalton, 1989; Ward & Gatwood, 1994; Lin, 2000; Patt, 2000). In cultures where there are close family relationship and interaction, such as among the eastern culture, family member's beliefs, views and attitudes can exert tremendous influence on one another. It is suggested (Lin, 2000) that the decision of family caregiver or the perception of patient's barriers to pain management may change depending on the stage of the disease. As the patient's disease approaches the terminal stage and when death becomes imminent, family members may be more concerned with patient comfort rather than the negative effects of analgesics. Cornforth's study (2002) indicates that 40% of the women turn to their family and friends for information. So one can see that family members can be an important source of information as well as misinformation.

Relationship between Perceived Barriers to Pain Management and Pain

Perceived barriers to pain management can greatly affect the level of pain. A study by Ward et al. (1993) involving 270 patients with cancer, found that higher level of barriers were correlated with higher levels of pain and that higher barrier scores were found among those who were not using adequate analgesics. This finding was supported by other studies (Lin, 2000; Gunnarsdottir, Donovan, Serlin, Voge, & Ward, 2002). It was also found that barriers related to reporting pain and using analgesics can lead to delay in the patient's first report of pain. Other barriers such as "trying to be good patients" can prevent patients from communicating about their pain to the physicians. With regard to

pain intensity (Gunnarsdottir et al., 2002), the barriers were positively related to least pain (r=0.19, p=0.01) and inversely related to quality of life (r=0.24, p=0.00). A study in Taiwan (Lin, 2000) indicated that higher barriers to pain management among the caregivers were associated with hesitancy in analgesic administration. Breitbart et al., (1998) surveyed 199 ambulatory patients with AIDS and found that patient-related barriers were significantly associated with under-treatment of pain even after controlling the impact of gender and education. A stepwise logistic regression indicated that a one-point increase in mean barrier questionnaire total score resulted in 2.1 times greater likelihood of under-medication, independent of the effects of other demographic variables. Becker, Sjogren, Bech, Olsen, and Eriksen (2000) confirmed lower physical, psychological, and social well being among patients with chronic non-malignant pain.

Bhutan Worldview and Cultural Beliefs about Pain

Bhutan is a landlocked country comprising a land area of about 46,500 square kilometers. It is bordered by India in the south, east and west and by the Tibetan Region of China in the north. It is one of the most rugged and mountainous countries in the world. It has a population of 657,548. Since the introduction of modern health care services in the country in the early sixties, there has been remarkable progress in the development of health services and systems in Bhutan. Efforts to establish modern medical facilities in the country began in 1962 and the Department of Health Services now has a wide spread of health facilities across the country, covering about 90% of the total population. Health care is delivered in a totally integrated system through an organized structure at the national, regional and district hospitals serving as referral centers followed by basic health units in the community (Statistical Yearbook of Bhutan, 2001). Bhutan has a total of 29 hospitals. The number of doctors to 10,000 population is

1.7 and the number of nurses to 10,000 population is 6.9 (Annual Health Bulletin, 2000). Health care is provided free of cost to all citizens. For those tertiary care services not available within the country, the government bears all the expenses for treatment outside the country.

For generations people in Bhutan have believed that what befalls them in this life like sickness and suffering (both containing strong elements of pain) are the direct result of their fate and past deeds. Pain, therefore is seen as a form of retribution or non-negotiable part of being sick, both by the health care providers and the patients themselves. If you are sick, it is expected that you will suffer pain. Therefore, to sensitize both the patients and the health care providers to the concept that you may be sick but you need not necessarily have to endure pain, would be a path-breaking change for health care in Bhutan in general. It will involve breaking down deeply entrenched personal, religious and cultural beliefs and myths of generations. These barriers need to be taken seriously, understood clearly and appropriate strategies developed before it can lead to behavior change, both among the patients as well as the health care providers.

Summary

Pain is something dreadful, something, which can affect not only the life of the person who is experiencing it but also his/her family and friends as well. Although people have used different ways to express pain, basically it meant something that is threatening and unwanted. Unrelieved and untreated pain can cause physiological, psychological, social and economic problems including postoperative complications, sleep deprivation and reduced quality of life. The nine patient-related barriers and the nurse-related barriers to pain management, identified by earlier studies, have some effect on the four selected demographic factors such as age, ethnicity, gender and education. The sources of

information could come either from the health care providers, family members or friends.

Misinformation can result in barriers to pain management.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of this chapter is to discuss the research methodology that was used in this study and to outline the specific methods and procedures that were used to find out the sample size, the sites that the samples were taken from, the inclusion criteria of the subjects, the instruments used for data collection, the procedure and steps used for data collection and data analysis.

Research Design

An analytical descriptive design was used for this study. This type of survey can be used to explore and collect detailed descriptions of existing variables and use the data to justify and assess current conditions and practices (Polit & Hungler, 1997; Lo Biondo-Wood & Haber, 1998).

Population/Subjects

1. Sample size

Sample size estimations were made based on power analysis. Power analysis was used not only to get the required sample but also to increase the likelihood of significant results. As most nursing studies used medium effect sizes (Cohen, 1988; Polit & Hungler, 1999), a medium effect size of .50 was used. α, the risk of a Type I error, was taken as .05 and the power was taken as .80 (20% risk of committing a Type II error). Hence to test the difference between two means, the sample required was found to be 63 in each

group (Polit & Hungler, pp. 492, Table 19-6). The final sample consisted of 180 subjects in view of attrition.

The number of nurses with diploma level education or above are 146 in the whole country (Annual Health Bulletin, 2000). Dempsey and Dempsey (1992) states that a sample of 10% of the population or 20% for smaller population is considered minimum for descriptive studies. Therefore by taking 20% of the total number of nurses the sample size in this case would be 29 nurses. However to increase the generalizability of the study, the researcher decided to at least increase the sample to 50 % of the total population. The final sample consisted of 82 nurses (56.16 %) to meet the assumptions of parametric statistical analysis.

2. Setting

The study purposively and conveniently took place in nine district hospitals and the national referral hospital for the patients and eleven district hospitals and the national referral hospital for the nurses. The Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) in Thimphu is a 200- bedded teaching hospital as well as the national referral hospital for the country. This hospital represented the referral hospital of the country. As patients are referred to this hospital from all over the country, the subjects from this hospital can actually represent all four corners of the country. The eleven district hospitals represented the district hospitals of the country.

3. Subject characteristics

The inclusion criteria for the patients were:

(a) Age more than 18 years.

(b) Has had pain at least once since admission.

(c) Able to communicate either in English or in Dzongkha (Bhutanese language).

(d) Is a Bhutanese citizen.

The inclusion criteria for the nurses were:

(a) Nurses with diploma level education and above.

(b) Nurses who had experience in caring patients in pain.

(c) Nurses who had at least one year of experience.

(d) Is a Bhutanese citizen.

4. Sampling technique

A non-probability quota sampling was used for this study. Since JDWNRH had 200 beds, 90 (50 %) subjects were taken from this hospital and 10 (5.6 %) from each of the nine hospitals, making a total of 180 subjects for the patients. JDWNRH has 7 main units; medical, surgical, orthopedic, pediatric, eye and ear-nose-throat, obstetric and gynecology, and private cabins. The samples were drawn from all the wards except pediatrics. Most district hospitals have just a general ward and the samples were drawn from this ward. JDWNRH had 50 nurses with diploma level or higher education and the district hospitals had 1-10 nurses. Forty-one nurses were recruited from JDWNRH and the rest 41 from the district hospitals making a total of 82 subjects.

Data Collection

1. Instruments

Data collection tool for the patient consisted of (1) demographic data, (2) Brief Pain Inventory (BPI), (3) Barrier Questionnaire (BQ), and (4) Information Questionnaire (IQ). Data collection tool for the nurses consisted of (1) demographic data, (2) Nurses'

Knowledge and Attitudes Regarding Pain Questionnaire (NKARPQ), and (3) Sources of

Information Questionnaire (IQ).

Demographic Data

Demographic data consisted of basic information, such as age, gender, religion,

educational level, occupation and village (Appendix B).

Brief Pain Inventory (BPI)

A modified section of the BPI that dealt with pain intensity was used in this study

to assess the pain level (Appendix B). Subjects were required to rate their pain on a scale

of 0 to 10 (Appendix A) where 0=no pain and 10=pain as bad as you can imagine. Serlin

et al., (1995). states that when the pain intensity reaches a level of 5, it starts to interfere

significantly with life activities and when it reaches a level of 7, its interference with

function rises again significantly.

Barrier Questionnaire (BQ)

For this study the researcher used a modified version of the Barrier Questionnaire

Taiwan (BQT) by Chung et al., (1999) which consisted of nine patient-related barriers

(Appendix B). It comprised of thirty questions, three questions for each of the eight

barriers and six questions for the barrier regarding side effects. The BQ is a self-report

instrument designed to measure the extent to which patients have the nine concerns

thought to be barriers to pain. Some of the questions were reworded to make them

culturally appropriate. Actually the questionnaires had to be marked on a 0-5-point scale

but when the researcher used the BQ, informally, with some subjects in Bhutan, it was

discovered that the subjects had difficulty in switching over from an 11-point scale (BPI)

to a 6-point scale when both the instruments were administered simultaneously. So the

original 6-point scale was modified to an 11-point scale. Hence the responses were

marked on an 11-point scale where 0 indicated "not at all agree" and 10 "agree very much" (Appendix B). Higher scores indicated more perceived barriers. An English version was used for those patients who could read, write and understand English and a Dzongkha version was used for those patients who could not read, write and understand English.

Sources of Information Questionnaire (IQ)

The IQ was used to find out the sources of the patient-related and nurse-related information to pain management (Appendix C). The researcher developed this questionnaire. It consisted of nine questions. The aim of these questions was to find out the source of information related to the barriers so that future educational activities could be formulated appropriately and effectively.

Nurses' Knowledge and Attitudes Regarding Pain Questionnaire (NKARPQ)

The NKARPQ was developed by McCaffery and Ferrell in 1987 (Appendix D). Since then it has been used extensively. The authors warned not to distinguish between knowledge and attitude questions as most questions that measured knowledge were also found to measure attitudes and therefore difficult to separate. The NKARPQ consisted of thirty-nine questions. The first twenty-two questions were "true" or "false" questions. Question number twenty-three to thirty-three were multiple choice questions and questions thirty-four and thirty-five were rating scale questions. The last four questions (thirty-six to thirty-nine) were related to two case studies. For this study questions 1-39 were used as it is without modification. Higher scores indicated higher level of knowledge and more positive attitudes of the nurses. During the pilot study it was felt that another question, "what is your belief about pain?" should be added. As a result question number 40 was added.

Validity and Reliability

Four experts in pain, one nurse educator (from Thailand), two anesthetists (from Bhutan) and one nurse researcher (from Bhutan) carried out the content validity for this study. The four pain experts reviewed each item and rated it on a scale of 1-4, where 1=not at all relevant and 4=very relevant. As all items had CVI of .80 or higher, there was no need to discard or formulate new items. The translation from English to Dzongkha (the national language of Bhutan) and back translation was carried out by two bilingual persons, and the two English versions were compared by an expert in English. Since the medium of instruction for all training and educational programs in Bhutan is English and all nurses can read and write in English, the Nurses' Knowledge and Attitudes Survey Regarding Pain questionnaire (NKASRPQ) was used as it is without translating it into Dzongkha. Pilot testing on twenty patients and ten nurses ensured the reliability and feasibility of the instruments in this study. For this study internal consistency reliability was carried out by using Cronbach's alpha test from the SPSS. Alpha level for the barrier questionnaire was 0.87 and for the knowledge and attitude questionnaire was 0.74.

2. Ethical considerations

Due consideration was accorded to the protection of human subjects. The researcher requested one of the nurses from the targeted wards to explain the purpose of the study. This was done to decrease the possibility of biases and coercion on the part of the researcher. The whole process of the interview was described including the approximate length of time that the interview would take. The subjects were ensured that strict confidence of their information would be maintained and all identifiable documents would be destroyed after the termination of the study. The subjects were told that they had the right to refuse or participate in the study and the right to withdraw at any point

during the course of the interview. They were assured that their withdrawal would not affect their treatment or their stay in the hospital. If willing to participate, a verbal consent was then taken.

During the interview, if a subject was anxious or experienced severe pain, the researcher stopped the interview and the subject was allowed to rest. The researcher then consulted the nurse on duty and administered analgesics. Interventions such as providing analgesics and comfort were also carried out.

The researcher approached the nurses during the shift exchange and explained the purpose and objectives of the study. Verbal informed consent was taken from those who were willing to participate in the study. The researcher then distributed the questionnaires and requested them to complete the questionnaires.

3. Procedure

Written permission was obtained from the Dean, Faculty of Nursing, Prince of Songkhla University to conduct the study in Bhutan. Clearance for the same was sought from the Director, Department of Health, Bhutan, to persue the research in Bhutan. Permission was granted after about a month. The Director sent written notifications to the medical superintendent of the national referral hospital and to the targeted district hospitals informing them about the study.

A meeting was held with all the head nurses of the wards for about two hours and the aims and objectives of the study discussed. For the hospitals, which could not be accessed by the researcher, the district medical officer and the head nurse were briefed and trained on how to collect the data. These two research assistants underwent discussion and simulation of the questionnaire and data collection techniques till the researcher was

satisfied with the result. Further clarifications were carried out via telephone. After the interview, the completed forms were mailed to the researcher.

The researcher and the research assistants approached the subjects who met the inclusion criteria individually and if willing to participate, a verbal informed consent was obtained. Face to face interview was carried out using the questions from; the demography, BPI, BQ and IQ. The length of the interview was for about 20 to 30 minutes. The interviews were conducted in English and in Dzongkha for the patients but the nurses' questionnaires were answered only in English.

Data Analysis

Data were processed by using the SPSS for Window's software package. Descriptive analysis was done for demographic variables, including sources of information. This information was presented in the form of frequencies, percentages, means, ranges and standard deviations. A One Way Analysis of Variance (ANOVA) and an independent t-test were carried out to answer the research questions. Further analyses were done on those tests, which were statistically significant.

Summary

An analytical descriptive design was used for this study. The sample consisted of 180 patients and 82 nurses drawn from 11 district hospitals and the national referral hospital in Bhutan. A non-probability quota sampling was used. The interview method was the main source of data collection and interview was conducted in English and in Dzongkha. ANOVA and independent t test were used to answer the research questions.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this chapter is to present and discuss the result of the study findings and to answer the research questions giving reasons and justifications.

The results of the study will be presented under the following headings:

1. Subject characteristics

2. Barriers to pain management experienced by adult patients in Bhutan

3. The mean difference of the patient-related and nurse-related barriers to pain management determined by selected demographic variables

4. Sources of information related to barriers to pain management

5. Knowledge and attitude of nurses regarding pain management

The goal is to summarize the findings and to relate them to existing literature and research in order to highlight the contributions this study makes.

Results

1. Patients

1.1 Patient profile

1.1.1. Patients' demographic characteristics

One hundred and eighty subjects who were willing and met the inclusion criteria were recruited for the study. Ninety subjects were taken from nine district hospitals and 90 were taken from the national referral hospital. Initially the district samples were supposed to be taken only from two district hospitals. However to increase the generalizability of the study and in response to the feedback from the research unit in

the health department, the central statistical office, doctors and nurses, the number of district hospitals were increased from two to nine. The final sample consisted of 90 subjects (50 %) from the district hospitals and 90 (50 %) subjects from the national referral hospital. The national referral hospital in itself can be taken to represent the target subjects as patients from all parts of the country are referred here. Subjects were recruited from; the medical, surgical, orthopedic, maternity, eye, ear, nose and throat wards, and private wards. Since most of the district hospitals did not have separate wards, subjects from the general wards were used. Subjects were approached bed wise and whoever was willing and met the inclusion criteria were taken. The interview was conducted in Dzongkha for 112 subjects (62.2%) and in English for 68 subjects (37.8%).

Table 4-1 shows the demographic characteristics of the subjects. The age of the subjects ranged from 18 years to 83 years (mean = 36.83, SD = 16.67). The subjects consisted of males (43.9%, n=79) and females (56.1%, n=101). Respondents' educational levels were as follows; not educated (58.9%, n = 106), primary educated (6 years of school; 17.2%, n =31), secondary educated (7-10 years; 16.7%, n = 30), and tertiary educated (11 years and above; 7.2%, n = 13). Most were farmers (33.3%, n = 60) and housewives (27.8%, n = 50). Among the subjects, 124 (68.9%) were married, and 48 (26.7%) were unmarried. Religious beliefs included Buddhism, (80.6%, n = 145), Hinduism (16.7%, n = 30), and Christianity (2.7%, n = 5). Ethnic groups included Scharchop (48.3%, n = 87), Lhotsham (22.2%, n = 40), Ngalong (18.9%, n = 34), and others, (10.6%, n = 19). "Others" included Kurtep, Bumthap, Khengpa, Layap and Doyap. Their family size ranged from one to fifteen members.

Table 4-1 Frequency and percentage of patients' demographic characteristics (n=180)

Demographic characteristics		n	%
Age			
Minimum	18 years		
Maximum	83 years		
Mean	36.83		
SD	16.67		
Sex			
Male		79	43.9
Female		101	56.1
Education Level			
No education		106	58.9
Primary		31	17.2
Secondary		30	16.7
Tertiary		13	7.2
Occupation			
Farmer		60	33.3
Housewife		50	27.8
Government service		35	19.4
Student		19	10.6
Private worker		13	7.2
Monk/nun		3	1.7
Marital Status			
Married		124	68.9
Unmarried		48	26.7
Divorced/widowed		8	4.4
Religion			
Buddhism		145	80.6
Hinduism		30	16.7
Christianity		5	2.7
Ethnicity			
Scharchop		87	48.3
Lhotsham		40	22.2
Ngalong		34	18.9
Others		19	10.6

1.1. 2. Patients' medical characteristics

All 180 patients had pain at least once since admission and 99.4% of them had pain at the time of interview. On a score of 0-10, where 0 = no pain and 10 = pain as bad as you can imagine, 41 subjects (22.9 %) had a score of 5 or more for pain right now.

Their mean pain score at the time of interview was 3.44 (SD = 1.81). When asked about the intensity of pain during the past 24 hours, it was found that patients reported pain, at its worst, least and average of 7.07 (SD=2.04), 2.65 (SD=1.35) and 4.64 (SD=1.30) respectively (Table 4-2). Relief provided by the pain medication was also assessed on a scale of 0 – 10, where 0 = no relief and 10 = complete relief and 59.4 % (n = 107) had a score of 5 or more (Table 4-3). Their frequency of pain ranged from 1 to 10 times per day.

Table 4-2 Mean, standard deviation, range, skewness and kurtosis of subjects' pain intensity

	Mean	SD	Range*	Skewness	Kurtosis
Worst pain	7.07	2.04	1-10	-3.44	-0.74
Least pain	2.65	1.35	0-9	3.19	4.84
Average pain	4.64	1.30	1-8	-1.19	-0.46
Pain now	3.44	1.81	0-10	4.98	2.18

* 0=no pain, 10=pain as bad as you can imagine.

Table 4-3 Score, frequency and percentage of relief provided by medication

Score*	Frequency	%
0	1	0.6
1	16	8.9
2	27	15.0
3	15	8.3
4	14	7.8
5	12	6.7
6	14	7.8
7	21	11.6
8	27	15.0
9	23	12.7
10	10	5.6

*Range for the scores were 0-10; 0=no relief, 10=complete relief.

There were 27 subjects (15 %) who hesitated to report pain (Table 4-4). The reasons for hesitating to report pain were; staff were busy, did not know that they could report pain, afraid that staff might get angry, afraid that staff might get irritated, no use because nobody did anything about it, scared of injection. There were 14 subjects (7.8 %) who hesitated to take analgesics (Table 4-4). The reasons for hesitating to take analgesics were; fear of addiction, fear that it might harm the body, fear of developing tolerance and fear of side effects. Table 4-5 indicates that their medical diagnosis included falls and motor vehicle injuries, generalized body ache, abdominal pain, post operation, backache, headache, burns, cancer, and others (abscess. sores, gastro intestinal bleeding, tonsillitis, cirrhosis of liver, diabetes mellitus, and peripheral neuropathy). The same table shows that the most commonly prescribed analgesic was paracetamol (82, 45.6 %).

Table 4-4 Frequency and percentage of variables related to hesitancy regarding reporting pain, and using pain medications

Variables	n	%
Hesitated to report pain		
Yes	27	15
No	153	85
Hesitated to report pain: reasons		
Staff were busy	12	44.5
Staff might get angry	6	22.2
Staff might get irritated	4	14.8
No use because nobody did anything about it	3	11.1
Did not know that they could report pain	1	3.7
Scared of injection	1	3.7
Hesitated to take analgesics		
Yes	14	7.8
No	166	92.2
Hesitated to take analgesics: reasons		
Fear of addiction	4	28.6
Fear of harming the body	4	28.6
Fear of side effect	3	21.4
Fear of developing tolerance	3	21.4

Table 4-5 Frequency and percentage of subjects' medical diagnosis and analgesics prescribed (n=180)

Variables	n	%
Medical diagnosis		
Falls and vehicle injuries	37	20.6
Generalized body ache	35	19.4
Abdominal pain	30	16.7
Post operation	22	12.2
Back ache	14	7.8
Head ache	13	7.2
Burns	10	5.6
Cancer	7	3.9
Others	12	6.6
Analgesics prescribed *		
Paracetamol	82	41.8
Nothing	33	16.8
Diclofenac voltaren (voveran)	29	14.8
Pentazocine (fortwin)	26	13.3
Ibuprofen	20	10.2
Pethidine	4	2.1
Aspirin	1	0.5
Vasograin	1	0.5

* More than one analgesics were prescribed to some patients

1.2. Barriers to pain management experienced by adult patients in Bhutan

The scores of each barrier questionnaire and the total barrier questionnaire are presented in Table 4-6. It can be seen that the mean scores of the barriers ranged from 2.70 to 6.56 with the three highest mean scores being "pain indicates disease progression" (6.56, SD = 2.36), "fear of tolerance" (5.62, SD = 2.61) and "pain medications given at specific times only" (4.73, SD = 2.86). The mean of the total barrier score was 4.44. Additionally, two questions, "Do you have any other concerns regarding pain medication, side effects, pain reporting or pain management?" and "What is your belief regarding pain?" were asked. All subjects did not have anything to say to the first question.

Regarding belief about pain, their responses included; pain was present due to disease

57.2 % (n = 103), pain was due to past karma 26.1 % (n = 47), pain always caused

Table 4-6 Mean, standard deviation, skewness and kurtosis for each barrier subscale

(n=180)

Barriers subscale	Means	SD	Skewness	Kurtosis
Pain indicates disease progression.	6.56	2.36	-4.50	0.52
Fear of tolerance.	5.62	2.61	-1.98	-2.65
Medications given at specific times only.	4.73	2.86	0.32	-3.13
Fear of addiction	4.59	2.45	0.14	-2.09
Complaints of pain may distract the physician.	4.40	2.48	1.01	-1.09
Fear of injection.	4.19	2.77	2.72	-2.16
Good Patients do not complain about pain.	3.65	2.33	1.75	-1.44
Fear of side effects.	3.53	1.93	2.72	-0.96
Accepting pain because of fatalism.	2.70	2.05	4.34	1.12
Total	4.44	1.40	-.72	.73

Range for all subscales is 0-10

distress and suffering so must be given importance 11.7 % (n = 21), must be treated in all

cases 2.8 % (n = 5) and pain was all in the mind, if you thought about pain, you felt pain

but if you did not think about pain, it was not there 2.2 % (n = 4), as presented in Table 4-

7.

Table 4-7 Frequency and percentage of patients' belief about pain (n=180)

Belief about pain	n	%
Due to disease	103	57.2
Past karma	47	26.1
Distress and suffering, so pain must be given importance	21	11.7
Must be treated in all cases	5	2.8
All in the mind, if we thought about pain, we felt pain	4	2.2

1.3. The mean difference of the patient-related barrier scores determined by patients' demographic variables.

A one way ANOVA for age, ethnicity and education and an independent t-test for gender revealed that overall there was no significant difference of the patient-related barrier scores among different groups as shown in Table 4-8.

Although the overall result was not significant, there were significant differences between some of the demographic variables and the subscales of the patient-related barriers as shown in Tables 4-9 and 4-10.

A One Way Analysis of Variance (ANOVA) was conducted to evaluate whether the difference in ethnicity, age and educational level would contribute to the difference on each subscale of the patient-related barrier scores including; fear of addiction, fear of tolerance, complaints of pain may distract the physician, good patients do not complain about pain, fear of injection, pain indicates disease progression, pain medications are only given at specific times, accepting pain because of fatalism and fear of side effects. It was

Table 4-8 Mean, standard deviation and F-test and t-test result of the patients'

demographic variables and total patient-related barrier score

Demographic variable	Total patient-related barrier score		
	Mean	SD	F/t
Age			
18-29 years	4.32	1.38	$.803^{NS}$
30-39 years	4.82	1.55	
40-49 years	4.97	1.61	
50-59 years	4.31	.96	
60+ years	4.57	1.40	
Ethnicity			
Scharchop	4.28	1.45	1.452^{NS}
Lhotsham	4.66	1.35	
Ngalong	4.74	1.41	
Others	4.18	1.16	
Education			
No education	4.29	1.42	1.34^{NS}
Primary	4.53	1.51	
Secondary	4.68	1.35	
Tertiary	4.95	.98	
Gender*			
Male	4.30	1.55	-1.149^{NS}
Female	4.55	1.27	

*Independent-sample t test was conducted
NS= not significant

revealed that only education and ethnicity had contributed to the mean score of a barrier,

fear of side effects, (F=5.78, p<.01, and F=4.08, p<.01, respectively) as shown in

Table 4-9. Post-hoc analysis with Bonferroni test revealed that subjects with no education

had significantly lower barrier scores than subjects with secondary education, (mean

difference = 1.41, p<.01) whereas mean difference scores of other pairs were not

significantly different. Similarly Bonferroni test for ethnicity revealed that Scharchop

subjects had lower barrier scores than Lhotsham subjects, (mean difference = 1.11, p<.05)

whereas the mean difference scores of other pairs were not significantly different.

By looking at the means one can see that those with secondary and tertiary levels of education (4.49, SD=2.12; 4.35, SD=1.69), and the Lhotsham and Ngalong group (4.16, SD = 2.07; 4.00, SD = 2.17) had more barriers related to fear of side effects.

Table 4-9 Mean scores for fear of side effects at different levels of education

Variable	Mean	SD	df	F
Education				
No education	3.08	1.79	3, 176	5.78*
Primary	3.77	1.88		
Secondary	4.49	2.12		
Tertiary	4.35	1.69		

* p<.01

Table 4-10 Mean scores for fear of side effects of different ethnic groups

Variable	Mean	SD	df	F
Ethnicity				
Scharchop	3.05	1.73	3, 176	4.08*
Lhotsham	4.16	2.07		
Ngalong	4.00	2.17		
Others	3.52	1.51		

* p<.01

An independent-samples t test was used to find out the effect of gender on the barriers. Although the test was not significant for all the groups, differences were noted between the means of the groups in relation to the barriers (Appendix H, Table 1). Females reported more concerns than males in all the subscales of patient-related barriers except in barriers related to distracting the physician, (males, 4.42, SD = 2.53; females, 4.39, SD = 2.45), accepting pain because of fatalism, (males, 2.87, SD = 2.15; females, 2.57, SD = 1.97), and fear of side effects (males, 3.60, SD = 2.01; females, 3.46, SD = 1.87).

1.4. Source of information to the patients

Patients reported that for all the listed information regarding barriers to pain management, most of the information came from the nurses (57.9%, n=104), friends, (38.64%, n=70) and doctors, (38.58%, n=69) as shown in Table 4-11. For the subscales it was revealed that nurses were the main sources of information for, fear of addiction, fear of tolerance, fear of injection, fear of side effect, accepting pain because of fatalism, and pain medications given only at specific times. Families were the main source for, good patients do not complain about pain and pain indicates disease progression, and friends were the main source for, complaints of pain may distract the physician.

2. Nurses

2.1.Nurse profile

Eighty-two subjects who were willing and met the inclusion criteria were taken from 11 district hospitals and one national referral hospital. The age of the respondents ranged from 22 years to 52 years (mean = 29.54, SD = 5.32). Table 4-12 shows that there were 64 (78 %) females and 18 (22 %) males. Majority of them were Scharchops (41.5 %, n = 34) and Lhotshams (30.5 %, n = 25). Respondents' educational levels were as follows; General Nurse Midwife (90.2 %, n = 74), and Baccalaureate Nurse (9.8 %, n =8). Among the subjects, 82.9 % (n = 62) were married and 15.9 % (n = 13) were unmarried. Majority of the subjects were Buddhists (73.2 %, n = 60). Their present area of work included; intensive care unit, maternity ward, medical ward, surgical ward, pediatric ward, orthopedic ward, reproductive health unit, operating theatre, emergency unit, administration or supervision unit, and eye ear nose and throat unit. Seventy subjects (85.4 %) had never attended any course on pain management. From Table 4-13 it is clear that of the 12 subjects (14.6 %) who had attended some courses on pain, the duration of

Table 4-11 Frequency and percentage of patients' source of information (more than one source could be chosen)

Barrier source	Dr n(%)	Nu n(%)	Fr n(%)	Fa n(%)	Art n(%)	Bk n(%)	Int n(%)
Fear of addiction.	85 (47.22%)	125 (69.44%)	91 (50.56%)	46 (25.56%)	20 (11.11%)	18 (10.00%)	0
Fear of tolerance.	70 (38.89%)	101 (56.11%)	69 (38.33%)	58 (32.22%)	18 (10.00%)	17 (9.44%)	0
Fear of injection.	77 (42.78%)	136 (75.56%)	54 (30.00%)	27 (15.00%)	13 (7.22%)	13 (7.22%)	0
Fear of side effects.	72 (40.00%)	151 83.89%)	49 (27.22%)	28 (15.56%)	24 (13.33%)	21 (11.67)	0
Good patients do not complain about pain.	38 (21.11%)	76 (42.22%)	84 (46.67%)	98 (54.44%)	26 (14.44%)	16 (8.89%)	0
Accepting pain because of fatalism.	97 (53.89%)	97 53.89%)	73 (40.56%)	66 (36.67%)	19 (10.56%)	14 (7.78%)	2 (1.11%)
Pain medications given only at specific times.	73 (40.56%)	144 80.00%)	55 (30.56%)	47 (26.11%)	11 (6.11%)	12 (6.67%)	0
Pain indicates disease progression.	76 (42.22%)	55 (30.56%)	65 (36.11%)	81 (45.00%)	13 (7.22%)	11 (6.11%)	0
Complaints of pain may distract the physician.	37 (20.56%)	53 (29.44%)	86 (47.78%)	80 (44.44%)	17 (9.44%)	12 (6.67%)	0
Total (n=180)	69 38.58%	104 57.9%	70 38.64%	59 32.78%	18 9.94%	15 8.27%	0.2 0.12%

Dr = doctor, Nu = nurse, Fr = friend, Fa = family, Ar = article, Bk = book, In = internet.

Table 4-12 Frequency and percentage of nurses' demographic characteristics (n=82)

Demographic characteristics		n	%
Age			
Minimum	22 years		
Maximum	52 years		
Mean	29.54		
SD	5.32		
Gender			
Male		18	22
Female		64	78
Ethnicity			
Scharchop		34	41.5
Lhotsham		25	30.5
Ngalong		8	9.8
Others		15	18.2
Educational level			
General Nurse Midwife		74	90.2
Baccalaureate Nurse		8	9.8
Marital status			
Married		68	82.9
Unmarried		13	15.9
Divorced		1	1.2
Religion			
Buddhism		60	73.2
Hinduism		20	24.4
Christianity		2	`2.4
Present area of work			
General		41	50
Medical		7	8.5
Surgical		6	7.3
Pediatric		5	6.1
Eye, ear, nose, throat		4	4.9
Emergency		4	4.9
Maternity		4	4.9
Intensive care		4	4.9
Orthopedic		3	3.7
Operation theatre		2	2.4
Reproductive health		1	1.2
Administration/supervision		1	1.2
Pain course attended			
Yes		12	14.6
No		70	85.4

Table 4-13 Minimum and maximum scores, mean and standard deviation of the variables

Variables	Minimum	Maximum	Mean	SD
Length of pain course attended (days)	4	30	11.00	6.94
Duration at the area of work (months)	1	84	27.96	23.62
Years of service (years)	1	28	6.61	4.84

the course ranged from 4 to 30 days. Their duration at the present work areas, ranged from 1 to 84 months and their years of service ranged from 1 to 28 years.

2.2. Knowledge and attitudes of nurses regarding pain management

Table 4-14 represents the knowledge and attitude scores of nurses regarding the 35 knowledge and attitude questions about pain management. The mean score was 13.91, SD = 3.28 with a minimum score of 6 and a maximum score of 24.

Table 4-14 Maximum, minimum, mean and standard deviation of the total knowledge and attitude score

Knowledge and attitudes	Minimum	Maximum	Mean	SD
Total score	6	24	13.91	3.28

Out of 35 questions (excluding the 4 questions on case study), the top five items answered correctly were the following; (1) "Subsequent doses of analgesic should be adjusted based on individual patient's response," (82.9%, n=68); (2) "Comparable stimuli in different people produce different intensity of pain," (78%, n=64); (3) "The best approach for cultural considerations in caring for patient's in pain is assessing patients individually to determine cultural influences on pain," (72%, n=59); (4) "Religious beliefs may make a patient think that pain and suffering is necessary," (62.2%, n=51) and

(5) "Ibuprophen (motrin), hydromorphone (dilaudid) and amitriptyline (elavil) are useful for the treatment of cancer," (59.8%, n=49) as shown in Table 4-15.The last five items answered correctly were the following; (1) "Non-drug interventions (e.g. heat, music, imagery etc.) are very effective for mild-moderate pain control and also helpful for more severe pain," (4.9%, n=4); (2) "If treating pain with opioid analgesics, it is likely that opioid addiction will occur in < 1% of the patients," (4.9%, n=4); (3) "The percentage of

Table 4-15 Frequency and percentage of the top five and the lowest five items from the knowledge and attitude questionnaire that were answered correctly

Knowledge and attitude items	Correct answer	
	n	%
Top 5 items		
(1) Subsequent doses of analgesic should be adjusted based on individual patient's response.	68	82.9
(2) Comparable stimuli in different people produce different intensity of pain	64	78
(3) The best approach for cultural considerations in caring for patient's in pain is assessing patients individually to determine cultural influences on pain	59	72
(4) Religious beliefs may make a patient think that pain and suffering is necessary	51	62.2
(5) Ibuprophen (motrin), hydromorphone (dilaudid) and amitriptyline (elavil) are useful for the treatment of cancer	49	59.8

Table 4-15 (continued)

Knowledge and attitude items	Correct answer	
	n	%
Lowest 5 items		
(1) Non-drug interventions (e.g. heat, music, imagery etc.) are very effective for mild-moderate pain control and also helpful for more severe pain.	4	4.9
(2) If treating pain with opioid analgesics, it is likely that opioid addiction will occur in < 1% of the patients.	4	4.9
(3) The percentage of people who over-report the amount of pain they have is 0-10%.	8	9.8
(4) The recommended route of administration of opioid analgesics to patients with prolonged cancer-related pain is oral.	9	11
(5) The likelihood of patients developing clinically significant respiratory depression is less than 1%.	9	11

people who over-report the amount of pain they have is 0-10%," (9.8%, n=8); (4) "The recommended route of administration of opioid analgesics to patients with prolonged cancer-related pain is oral," (11%, n=9) and (5) "The likelihood of patients developing clinically significant respiratory depression is less than 1%," (11%, n=9), as shown in Table 4-15.

Questions 36-39 are related to two case studies. For each patient, the respondents were asked to make decisions about pain and pain medication. Both Dorji and Wangchuk had abdominal surgery and it was the second day after surgery in both cases. Their vital signs were the same and both rated their pain as 4 on a scale of 0-5 where 0=no pain/discomfort and 5=worst pain/discomfort. The only difference between the two cases was that while Dorji was smiling, talking and joking, Wangchuk was lying quietly in bed and grimaced as he turned.

Table 4-16 Frequency and percentage of the pain intensity and action taken

Items	Dorji		Wangchuk	
	n	%	n	%
1. Pain intensity rated by nurses				
0	7	8.5	2	2.4
1	22	26.8	4	4.9
2	22	26.8	15	18.3
3	12	14.6	30	36.6
4*	18	22	25	30.5
5	1	1.3	6	7.3
2. Actions taken by the nurses				
a. administer no morphine at this time	43	52.4	12	14.6
b. administer morphine 5 mg IM now	21	25.6	39	47.6
c. administer morphine 10 mg IM now	16	19.6	20	24.4
d. administer morphine 15 mg now*	2	2.4	11	13.4

0 = no pain/discomfort, 5 = worst pain/discomfort
* Correct answer

The nurses were asked to rate their assessment of the pain level of the two cases. In both cases the number of nurses who responded to this question correctly were, for smiling Dorji, (22%, n=18), and for grimacing Wangchuk, (30.5%, n=25), as listed in Table 4-16. Both the patients had received morphine 10 mg IM four hours ago. Their pain ratings ranged from 3 to 4 and they had no clinically significant respiratory depression, sedation or other untoward side effects. Their physicians' orders for analgesia were "morphine IM 5-15 mg every 3-4 hours PRN pain relief." The nurses were asked to mark the action they would take at this point of time. In both cases the number of nurses who responded correctly to this question was, for smiling Dorji, (2.4%, n=2) and for grimacing Wangchuk, (13.4%, n-11) as shown in Table 4-16.

As a result of the feedback from nurses during the pilot study, an additional question, "What is your belief regarding pain?" was added. Table 4-17 shows that nurses' beliefs about pain included; past karma or deeds 42.7 % (n = 35), pain is related to

Table 4-17 Frequency and percentage of nurses' belief about pain.

Belief about pain	n	%
Past karma/deeds	35	42.6
Pain is related to attention seeking behavior of people	14	17.1
Pain is terrible and full of suffering which needs to be helped	13	15.9
Pain is always present with each one of us	10	12.2
Pain is due to disease	4	4.9
Pain is experienced differently by different individuals	4	4.9
Pain must be given importance	2	2.4

attention seeking behavior of people17.1 % (n = 14), pain is terrible and full of suffering which needs to be helped 15.9 % (n = 13), pain is always present with each one of us 12.2 % (n = 10), pain is due to disease 4.9 % (n = 4), pain is experienced differently by different individuals 4.9 % (n = 4) and pain must be given importance 2.4 % (n=2).

2.3. The mean difference of the nurse-related barriers (knowledge and attitude) determined by nurses' demographic variables.

ANOVA was conducted to evaluate the effect of ethnicity and age on the knowledge and attitude of nurses regarding pain management. The independent variable, ethnicity, included four levels; Scharchop, Lhotsham, Ngalong and others. The second independent variable, age, had three levels: 22-30 years, 31-40 years and 41– years. Previously the age level had four groups but since there was only one subject in the 51+

Table 4-18 Mean, standard deviation and F-test and t-test result of the demographic variables and knowledge and attitude questionnaire

Demographic variable	Mean	SD	F/t
Age			
22-30 years	13.83	3.14	$.13^{NS}$
31-40 years	14.15	3.13	
41+ years	13.33	7.51	
Ethnicity			
Scharchop	14.06	2.82	$.71^{NS}$
Lhotsham	13.92	3.71	
Ngalong	12.38	2.77	
Others	14.40	3.81	
Education *			
General nurse midwife	13.72	3.17	-1.68^{NS}
Baccalaureate nurse	15.75	3.96	
Gender *			
Male	15.00	3.58	-1.49^{NS}
Female	13.61	3.16	

*Independent-sample t test was conducted.
NS = not significant.

group, this group was included in the 41-50 group and made into 41+ group. The dependent variable was the scores of the knowledge and attitude questionnaire. Table 4-18 indicates that the overall F-test and t-test showed no significant difference in all the cases and therefore post hoc follow up tests were not conducted. An independent-sample t test was used to find out the effect of gender and education on the knowledge and attitude of nurses regarding pain management. Although the test was not significant, differences were noted in the means (Table 4-18). Males (15.00, SD = 3.58) scored higher than the females (13.61, SD = 3.16) and baccalaureate nurses scored higher than the general nurse midwives (15.75, SD=3.96; 13.72, SD=3.17).

2.4. Source of information to the nurses

For nurses the major sources of information were; doctors, (65.85%, n=54) followed by nurses (32.93%, n=37) and books (43.9%, n=36) as shown in Table 4-19. It was found that doctors were the main source for all the subscales and the least common source was the internet.

Discussion

Discussion of the study findings will be carried out in two parts. The first part will focus on the patient-related findings and the second part will focus on the nurse-related findings.

1. Patient-related findings

1.1. Patient profile

Females exceeded the males in the patient sample (female=64, male=18). This was because selection was done bed wise on the basis of presence of pain and it so happened that there were more females during the period of this study. There are many

Table 4-19 Frequency and percentage of nurses' source of information (more than one source could be chosen)

Barrier Score	Dr n(%)	Nu n(%)	Fr n(%)	Fa n(%)	Ar.n(%)	Bk n(%)	In n(%)
Fear of addiction.	56 (68.29%)	45 (54.88%)	36 (43.90%)	21 (25.61%)	27 (32.93%)	41 (50.00%)	16 (19.51%)
Fear of tolerance.	60 (73.17%)	39 (47.56%)	22 (26.83%)	17 (20.73%)	16 (19.51%)	36 (43.90%)	8 (9.76%)
Fear of injection.	65 (79.27%)	43 (52.44%)	14 (17.07%)	6 (7.32%)	21 (25.61%)	45 (54.88%)	8 (9.76%)
Fear of side effects.	57 (69.51)	41 (50.00%)	9 (10.98%)	5 (6.10%)	20 (24.39%)	52 (63.41%)	7 (8.54%)
Good patients do not complain about pain.	47 (57.32%)	33 (40.24%)	25 (30.49%)	29 (35.37%)	17 (20.73%)	28 (34.15%)	9 (10.98%)
Accepting pain because of fatalism.	46 (56.10%)	31 (37.80%)	31 (37.80%)	24 (29.27%)	21 (25.61%)	36 (43.90%)	4 (4.88%)
Pain medication given only at specific times.	64 (78.05%)	42 (51.22%)	9 (10.98%)	5 (6.10%)	16 (19.51%)	33 (40.24%)	5 (6.10%)
Pain indicates disease progression	50 (60.98%)	34 (41.46%)	20 (24.39%)	17 (20.73%)	15 (18.29%)	36 (43.90%)	7 (8.54%)
Complaints of pain may distract the physician.	41 (50.00%)	27 (32.93%)	30 (36.59%)	26 (31.71%)	15 (18.29%)	19 (23.17%)	3 (3.66%)
Total (n=82)	54 65.85%	37 45.12%	22 26.83%	17 20.73%	19 23.17%	36 43.9%	7 8.54%

Dr = doctor, Nu = nurse, Fr = friend, Fa = family, Ar = article, Bk = book, In = internet.

ethnic groups in Bhutan but the predominant ones are Scharchop, Lhotsham and Ngalong (Namgyal, 1998). The rest of the ethnic groups have been included under "others". The predominant religion in Bhutan is Buddhism followed by Hinduism, which is practiced mainly in the southern part of the country. Patients' medical diagnosis varied from falls and motor vehicle injuries to cancer and abscess. A study by Ward and Gatwood (1994) stated that persons with and without cancer did not differ to the extent in which they had the concerns and misconceptions, as assessed by the barrier questionnaire. Unfortunately the subjects in this study were drawn from an outpatient oncology clinic and from various community groups and it was not clear whether the subjects without cancer had any medical problems. Nevertheless this study supports the fact that the different diagnosis in this study should not make any difference on the barrier scores.

An interesting observation was that when the researcher asked the subjects, "do you have pain now?" Many subjects said "no" but when they were asked to rate their level of pain "now" on a scale of 0-10 (0=no pain, 10=pain as bad as you can imagine), many subjects rated 1 or 2. When asked about it some said, "little pain is no pain" or "this much pain is not worth mentioning," or "I have had a big operation, so this much pain should be expected." This clearly indicated that patients had a tendency to ignore or hide mild pain. This could be because patients accepted pain as part of surgery and hospitalization (Sherwood, McNeil, Starck, & Disnard, 2003). This fact is supported by Ward and Gatwood (1994), where, they found that if patients did not know that they can expect pain relief, they would not demand it and consequently are satisfied with the state of their pain management even though they remain in pain.

1.2. Barriers experienced by adult patients in Bhutan

This study indicated that adult patients in Bhutan do have barriers to effective pain management. The three highest mean scores were; pain indicates disease progression (6.56, SD = 2.36), fear of tolerance (5.62, SD = 2.61), and pain medications given only at specific times (4.73, SD = 2.86), and the mean of the total barrier scores was 4.44 (SD= 1.40). These findings were similar to a study by Chung et al. (1999) where they had studied about the patient related barriers to cancer pain management in Hong Kong. They found that the three highest mean scores were for disease progression (3.64, SD = 0.82), specific time (3.62, SD = 0.860) and physician distraction (3.44, SD = 0.67). The mean scores of the nine subscales ranged from 2.46 (SD = 0.92) to 3.64 (SD = 0.82) on a scale of 0-5. In a similar study Lin (2000) also found that the four subscales having the highest mean scores were tolerance, disease progression, specific time and addiction. This similarity could be as a result of similarities in the Asian culture. Like the Chinese (Chung et al., 1999), most Asians are accustomed to hard work and difficult conditions. Thus they are able to withstand more painful experiences. Like the Hong Kong Chinese (Chung et al., 1999), most Bhutanese patients do not question the authority of the doctors and most are not very expressive and vocal in expressing their feelings. Because of this, expressions and feelings of pain may be suppressed.

Most patients in Bhutan believed that an increase in the level of pain would mean that their disease was getting worse as pain was inevitably associated with disease. Although this notion may not be wrong, if patients had the tendency to deny or avoid the fact that their disease is getting worse, they may deny the presence of pain as well. This could result in silent suffering. Swenson (1994), and Ahles, Blanchard and Ruckdesche (1983) discovered similar findings.

Patients strongly believed that if they took pain medication when they had some pain then it might not work as well when they had severe pain. They believed that taking pain medication each time they have some pain would make them develop "resistance" to the drug and they would have to resort to stronger and stronger analgesic. For this reason most patients said they tried to avoid taking pain medication for "little" pain. The idea of "saving the strong stuff for later" when the pain really gets worse has been well stated by Chung et al. (1999).

In Bhutan analgesics are usually given "as needed" or prn (pro re nata) except in case of postoperative patients where it is given as scheduled doses to keep the pain under control, usually for the first 48 hours after surgery. Subsequent doses are rarely given before the specified time of administration. Most patients said that pain medications were only given at specific time intervals and that they would try to wait till it was "time" before asking for pain medication. Chung et al. (1999) found that patients believed pain medications were only given at specified time intervals and even if one were in severe pain one should not take an extra dose. McCaffery and Pasero (2001) found that although many patients have pain continuously, analgesics continue to be given as prn rather than as scheduled doses at regular intervals.

1.3. The mean difference of the patient-related barriers determined by the patients' demographic variables.

As stated by Green, Salkind and Akey (2000), before proceeding with the One Way Analysis of Variance and the independent t-test, steps were taken to make sure that the assumptions of normality and equal variance were met. This study met all the assumptions. Overall it was found that the patients' demographic variables did not have much effect on the total score of the patient-related barriers.

There were no significant differences between most of the patients' demographic variables and the subscales of the patient-related barriers except for education and ethnicity which had an association with the "fear of side effects" subscale. Overall the barriers seemed to be increasing slightly with education (Appendix F, Tables 1-6). This shows that having a higher level of education does not necessarily mean that they would have fewer barriers. Being educated in the appropriate area (for example pain management) would definitely help to reduce barriers. It was also shown that those with secondary and tertiary levels of education had more barriers related to fear of side effects. This could be because those with higher education have more access to information either by way of articles and books or from conversation. Thus, they come to know about drugs and their side effects. The only downside is that maybe the materials that they read and the things that they hear may not contain accurate and current information on pain management, especially about drugs and side effects. Similar concern was expressed by Chiu, Trinca, Lim, and Tuazon (2003), where they emphasized the need to re-evaluate the pain content in the nursing curricula, for its accuracy and current information. On the other hand those with less or no education may not be concerned with such things at all, as they say, "ignorance is bliss."

With regard to the effect of ethnicity on "fear of side effects," the possible explanation for this could be that since the subjects in these two ethnic groups (Lhotsham and Ngalong), in this study, were mostly from the rural areas, they probably would have not heard of side effects. Even if they did experience effects like constipation, they would not have associated it with analgesic.

Similar to this study, previous studies have found significant ethnic differences on pain perception and expression but not really on the barriers. Morris (2001) observed that

there were no differences between sensory dimension of pain and ethnicity but identified differences in its affective dimension. Riley et al. (2002) found that African Americans showed stronger links between emotions and pain behavior than the Whites. Chung et al. (1999) found that the mean scores of the barrier questionnaire were higher in Taiwan and Hong Kong groups (2.98, 2.96) than in the US group (1.65). The Hong Kong group had higher concerns about being a good patient (2.77) than the Taiwan group (1.42). Suza (2003) found differences in all the aspects of pain experiences between the Javanese and the Batak patients. Gunnarsdottir et al. (2002) on the other hand found no relationship between ethnicity and the barrier questionnaire.

In general, this study showed that early middle age and older groups seemed to have more barriers (Appendix G, Tables 1-6). This could be because they accepted many things as a part of the aging process. Gunnarsdottir et al. (2002) also found that older patients had more barriers ($r=0.73$, $p<0.01$) as compared to the younger ones. Ward et al. (1993) showed that age was positively related with good patients ($r=0.15$, $p=<0.05$) and negatively related with fear of injection ($r=-0.38$, $p=<0.05$). Ward and Gatwood (1994) on the other hand found no relationship between age and the barrier questionnaire and its subscales.

Gender did not seem to make much difference on the barriers in this study. Similarly Ward et al. (1993) found no significant relationship between the total barrier scores and the demographic factors. However, other studies had different findings. Keogh and Herdenfeldt (2001) found that females were more concerned about side effects (2.11, SD = 1.1; 1.85, SD = 1.0), $t_{(253)}=2.24$, $p=<0.05$. Ward and Gatwood (1994) found that males had higher scores on fatalism (1.20, SD = 0.90) than females (0.68, SD = 0.73), $t_{(54)}=2.22$, $p=0.03$. Keogh and Herdenfeldt (2001) discovered that gender differences

existed in the perception of pain and stated that females had lower pain threshold and pain tolerance as well as reported greater sensory pain than the males.

1.4. Source of information to the patients

The main sources of information for the patients were, nurses (104, 57.9 %). In a country where the number of doctors per 10000 persons is 1.7 (Annual Health Bulletin, 2000), it is natural that the doctors are in the wards only at specific times. Nurses, being slightly more in number, are more visible and readily available in the wards. They also have more opportunity to interact with the patients and their families. This explains why nurses, because of their nursing role, could be the main source of information for the patients. Moreover, it is shown that patients believed and trusted the health care providers as a credible source of information (Cornforth, 2002).

2. Nurse-related findings

2.1. Nurse profile

The nine targeted district hospitals had only 38 subjects who fulfilled the required criteria so subjects had to be taken from two more hospitals in order to have 41 subjects (50 %) from the district hospitals and 41 (50 %) from the national referral hospital. Most of the nurses are rotated among the hospitals almost every four to five years and therefore almost every nurse has the experience of having worked in the district as well as the referral hospitals. Similarly those working in the national referral hospital are frequently rotated among the different wards and areas.

Majority of the subjects were females (female=101, male=79). The overall ratio of female to male nurses in Bhutan is about 3:1 and hence the variation in the sample. Although equal number of assistant nurses and auxiliary nurses exist in the country, this study looked at only the knowledge and attitudes of the general nurse midwives and the

baccalaureate nurses. Since the former two groups have had less number of years of training, it would be possible to assume that if there is inadequate knowledge among the general nurse midwives and the baccalaureate nurses, the assistant nurses and the auxiliary nurses too would be having the same problem. Among the general nurse midwives, 14 (18.92 %) had received additional diploma or certification courses. The baccalaureate nurses consisted of two categories, one with four years of training (3, 37.5 %) and the other with two years of conversion course (5, 62.5 %).

2.2. Knowledge and attitudes of nurses regarding pain management

This study has shown that nurses had inadequate knowledge in managing pain effectively. The mean and standard deviation of the total knowledge and attitudes score (for questions 1-35) were 13.91 (SD=3.28) with a minimum score of 6 and maximum 24. This fact has been well supported by other studies. Surveys conducted on nurses' knowledge about pain and pain management in 1988 as well as in 1995 (McCaffery & Ferrell, 1997) revealed that lack of knowledge in these areas still exist. DeRond et al. (2000b) also found that nurses had knowledge deficit and prejudices regarding pain and pain management. For the questionnaires on non-drug interventions and addiction, only four nurses (4.9 %) scored correctly in each question indicating inadequate knowledge about pain relief and fear of addiction. These findings are supported by other similar studies like McCaffery and Ferrell (1997), who found that nurses in the USA, Canada, Japan, Spain and Australia also had inadequate knowledge of the WHO's recommendation for cancer pain relief. Brockoppel et al. (1998) also identified a lack of knowledge in the addictive properties of narcotics, assessment of pain, characteristics of chronic pain, occurrences of respiratory depression and appropriate prescribing for pain medication and non-pharmaceutical for pain.

However a word of caution with regard to the lowest five correctly answered questions. Three out of these five questions dealt with numbers and percentages that would have been very difficult to remember. Therefore even if the subjects knew that the incidence of addiction is low, they might not have remembered how low. The high number of incorrect scores on the smiling case study questionnaire indicated that nurses still assessed patients on the basis of their physical appearance and not by what the patient said. For example, 24 (29.3 %) nurses had rated the smiling Dorji's pain lower (<4) than the grimacing Wangchuk's although both patients had rated their pain as 4. Similarly McCaffery and Ferrell (1996) found that most nurses did not record and consider patient's self report of pain, if they found that the patient's behavior was smiling or joking. Not too surprisingly, nurses were also more likely to increase the morphine dose for the grimacing patient. In this study 11 (13.4 %) nurses said that they would increase the morphine dose for the grimacing Wangchuk and only 2 (2.4 %) nurses said that they would increase the dose for the smiling Dorji.

2.3. The mean difference of the nurse-related barriers (knowledge and attitude) determined by the nurses' demographic variables.

For nurses, demographic factors like ethnicity and gender did not make much difference on the knowledge and attitude except for educational level. With regard to education the baccalaureate nurses scored higher (15.75, SD = 3.96) than the general nurse midwives (13.72, SD = 3.17). Further analysis revealed that out of the baccalaureate nurses, those who had undergone the two years conversion course scored higher (17.40, SD = 4.04) than the ones who had undergone the four years regular course (13.00, SD = 2.00). This indicated that along with education, experience is also important, to improve the knowledge and attitude of nurses (Allock, 1996). This finding could also

suggest that pain and pain management components are inadequately being covered in the basic nursing educational courses. Chiu et al. (2003) found that most Australian and Philippino student nurses perceived their undergraduate course contained very little on pain. In general, there is an increase in the knowledge and attitude level as the age increases, indicating that nurses learn about pain and pain management through experience and through additional courses and not so much from their basic nursing education. This is supported by Allock (1996); McCaffery and Ferrell (1997) and DeRond et al. (2000b) who found that educational efforts directed at nurses could help to improve their knowledge and skills in pain management.

2.4. Source of information to the nurses

For the nurses the main sources of information were doctors (54, 65.85 %). For this part of the questionnaire, some subjects mentioned more than one source for each barrier while others have mentioned only one source. By virtue of their qualification and experience, nurses look up to the doctors for any kind of information related to the medical arena. Most nurses in Bhutan are not great readers as their busy work schedule and family lives prevent them from carrying out such activities. Therefore they mainly rely on the doctors for their current update and information. In general most Bhutanese are not great readers; reading is still considered a chore for many Bhutanese people (Reading, 2003). In an interview carried out by Kuensel (the national newspaper in Bhutan), 68% of the 248 school teacher trainees interviewed said they would rather watch television than read (Reading, 2003). Many nurses have cited insufficient time as a barrier to reading (Retsas, 2000; Kajermo, Nordstrom, Krusebrant, & Bjorvell, 1998).

Summary

In this chapter the characteristics of the subjects were addressed and sequential findings of the study presented. Discussions were carried out referring them to current existing literature. The subjects consisted of 180 patients and 82 nurses. All 180 patients had pain at least once since admission and 99.4% had pain at the time of interview. The three barriers with the highest mean scores were, pain indicates disease progression, fear of tolerance, and pain medications given only at specific time. Two demographic variables, education and ethnicity, had an effect on the barrier, fear of side effects. Findings indicated that nurses were the main source of information to the patients.

Only two levels of nurses, the baccalaureate nurses and the general nurse midwives were included in the study. This study revealed that nurses had inadequate knowledge in pain management and that nurses with higher education seemed to have better knowledge. Doctors were found to be the main source of information to the nurses.

CHAPTER 5

SUMMARY AND RECOMMENDATIONS

The purpose of this chapter is to summarize the study findings and to present the implications and recommendations to nursing services, nursing education and nursing research. An analytical descriptive study was conducted to explore the barriers to effective pain management in adult patients in Bhutan and to find out the knowledge and attitude of the nurses towards pain management. One hundred and eighty patients and eighty-two nurses were recruited by using a non-probability quota sampling. Patient subjects were taken from the medical, surgical, orthopedic, maternity, eye and ear nose and throat and private wards of the national referral hospital and from the general wards of the nine district hospitals. Nurse subjects were taken from the national referral hospital and from the eleven district hospitals. Data was collected between mid November 2003 and the first week of February 2004. Collected data was analyzed by using descriptive statistics, ANOVA and independent t-test. For the statistically significant results, post-hoc analysis using Bonferroni's test was carried out.

1. Summary of Study Findings

This study indicates that adult patients in Bhutan do have barriers to effective pain management. The three barriers with the highest mean scores were, pain indicates disease progression, fear of tolerance, and pain medications given only at specific times. In addition it was found that those with higher education and those from the Lhotsham and Ngalong group had more barriers related to fear of side effects. Some patients hesitated to report pain, citing, staff were busy, staff might get angry, staff might get irritated, no use

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because nobody did anything about it, did not know that they could report about their pain and scared of injection as some of the reasons for their hesitation. There were few patients, who hesitated to take analgesics citing, fear of addiction, fear of harming the body, afraid of side effects and afraid of developing tolerance as some of the reasons for their hesitation. Although 99.4% of the patients had pain at the time of interview, only 81.7% received analgesics. The most commonly prescribed analgesic was paracetamol. In about 50% of the patients, pain was not relieved completely by the prescribed analgesic.

This study also indicated that nurses had inadequate knowledge in pain management, especially in the area of drug and non-drug interventions, addiction and pain assessment. Those nurses with higher education have been found to have better knowledge in pain management. Unfortunately only 14.6% of the nurses had attended some course on pain management. Most of the nurses and patients believed that pain was due to past deeds or karma. For the patients the most common source of information to the barriers was the nurses and for the nurses doctors were the most common source of information to the barriers.

2. Implications and Recommendations

2.1. Nursing practice

Findings regarding pain indicates disease progression, fear of tolerance and pain medications given only at specific time, show that nurses must be aware of these barriers and explain and educate the patients with correct information. Pamphlets on these misconceptions must be developed, both in English and in Dzongkha, and made available to the patients and relatives. Nurses have been found to be the main source of information for the patients and therefore every effort must be made to impart information and not misinformation. Findings from the two case studies indicate that nurses still tend to assess

pain by physical appearance rather than by what the patient says. Hence it is important for every practicing nurse to remember that "pain is whatever the experiencing person says it is and exists whenever he or she says it does" (McCaffery, 1972, pp. 8). Knowing the reasons why patients hesitate to report pain and take analgesics can help nurses to improve their pain management strategies and the care of patients. The fact that patients do not complain about pain does not mean that they do not have pain. Nurses must make efforts to go and ask the patients whether they have pain. For this, numeric pain assessment rating scales must be adapted and used, and a systematic pain assessment protocol must be instituted by making pain the fifth vital sign. As nurses in most of the wards were found to be very busy and under-staffed, the use of these rating scales could be taught to the patients and relatives so that they can assess by themselves. Nurses can then go around and check how much it was, record it on the chart and carry out the necessary interventions. Findings also indicate that patients hesitated to report pain and take analgesics, therefore care providers, especially nurses must make efforts to encourage active communication and dispel misconceptions.

2.2. Nursing education

This study shows that the main areas where nurses have inadequate knowledge about pain management were in drug and non-drug interventions, addiction and pain assessment. These findings can guide in designing and incorporating pain management aspects into the curriculum. The fact that only 14.6% of the nurses have attended some course on pain management suggests that there is an urgent need to educate more nurses on the various aspects of pain management. Workshops and seminars on current issues in pain and pain management must be organized. If pain is to be managed effectively, it is important to allocate separate number of hours to pain management in the nursing

curricula and to create awareness about the barriers to pain management. The presence of patient-related and nurse-related barriers indicate that there is an urgent need to organize educational activities on pain management to dispel myths and misconceptions, create awareness about the recent advances in pain management and to understand the effect pain has on the lives of individuals.

2.3. Nursing research

Since there are no known nursing studies on pain management in Bhutan, this study can act as a baseline for future studies related to pain. Separate studies on patient-related barriers and knowledge and attitudes of nurses can be conducted. Future studies should include all the levels of nurses in the country. It would be useful to find out the knowledge and attitudes of nurse educators, student nurses, doctors and other health care professionals. A mixture of qualitative and quantitative approach is recommended to get an in depth information about the barriers. Findings suggest that friends, families and books are important sources of information related to barriers. Therefore studies should be conducted to find out their knowledge and attitudes towards pain management and the content of the materials that are available.

3. Strengths and Limitations

The strength of this study lies in the fact that the samples were taken from almost 50 % of the hospitals and from more than 50 % of the diploma level and above nurses in the country. The researcher was able to hold discussions with the prominent research related organizations and personnel in the country like research and epidemiology unit of the Health Department, the Central Statistical Office, the Director of Public Health, the Joint Director of Medical Education and senior doctors and nurses. Their suggestions and recommendations have been incorporated. The findings can therefore be generalized to

the Bhutanese population. Another strength of this study is that the patient-related and nurse-related barriers explored in this study were taken from well-known research articles. Lastly this study provides current empirical facts about pain management.

One limitation of this study is that due to time constraint and fear of not getting enough subjects, non-probability sampling was used. However efforts were made to try and build some representativeness into the sample by using quota sampling. Due to the same reasons gender balance could not be maintained. Therefore the findings on the effect of gender on the patient-related and nurse-related barriers must be viewed with caution. Similarly balance could not be maintained regarding the educational level of the nurses as there are very few nurses with a baccalaureate degree in the country. Another limitation of this study is that for some of the subgroup analyses, the assumptions might have been violated because of less number of subjects in the category. Lastly due to snow and some problem in the country, the researcher was not able to collect data personally from all the target hospitals.

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APPENDIX A

INFORMED CONSENT

This is to inform you that as a part of my two years Masters in Nursing Science Program at Prince of Songkla University, Thailand, I am conducting a study on the Barriers to Effective Pain Management in Adult Patients in Bhutan. The purposes of the study are:

1. To explore what barriers patients in Bhutan have to effective pain management.

2. To explore knowledge and attitude of nurses regarding effective pain management.

3. To examine the relationship of selected demographic variables including age, ethnicity, gender and educational level to patient-related and nurse-related barriers.

4. To determine the sources of information related to patient-related and nurse-related barriers.

Considering the emphasis placed on the health services by the Royal Government of Bhutan and the limitation of basic research information on health issues, especially in the area of pain, the findings of this study will have direct relevance to Bhutan

Although you may or may not directly benefit from this study, the benefit to others would be tremendous. This study is intended for the care receivers as well as the care providers. It consists of closed ended questions and few open ended questions, and it may take about half an hour of your time. Any information that you provide will be held in strict confidence and your identity will not be reflected or mentioned in any part of the

document.

Participation is voluntary and should you decide not to participate in this study, your decision will be respected and will in no way make a difference to your work, treatment, care and stay here. Should the interview tire or stress you, you have the right to stop or withdraw at any point. The signature on this form will indicate that you have understood what is involved and that you consent to participate in this study.

For further clarification and information, please contact Ms. Diki Wangmo at Royal Institute of Health Sciences, phone 322031 (office) and 323415 (residence).

Yours sincerely

Diki Wangmo.	Signature	Date
Name of the Participant	Signature	Date
Name of the witness	Signature	Date

APPENDIX B

DATA COLLECTION INSTRUMENT

(For patients)

1. Code:

2. Date:

3. Hospital and Ward:

Demographic data:

1. Gender: 1 (Male) [ ] 2 (female) [ ]

2. Ethnicity: Scharchop/Lhoshum/Layap/Doyap/Ngalong/others _____

3. Marital status:

    Married [ ] single [ ] divorced [ ] others/specify: _____

4. Age _____ Years

5. How many family members live with you?

    _____

6. Education level:

    Nil [ ] primary [ ] secondary [ ] tertiary [ ] others /specify :_____

7. Religion:

    Buddhism [ ] Muslim [ ] Christian [ ] Hinduism [ ] others _____

8. Occupation _____

    I am interested in learning about your attitude towards pain and pain treatment. There

is no right or wrong answer. I just want to know what you think. Please be frank, your

answers will help us to understand the pain phenomena better.

Modified Brief Pain Inventory:

1.   How long have you been in the hospital?

_____ days [ ]months [ ]Years [ ].

2.   Do you have pain now?

Yes [ ] No [ ](if no go to question 4).

3.   Please rate your pain (3a to 3d) by circling the number that best describes your

pain within the past 24 hours.

3.a. Please rate your pain by circling the number that best describes your pain at its worst.

        0   1   2   3   4   5   6   7   8   9   10

        No pain.   Pain as bad as you can imagine.

3.b. Please rate your pain by circling the number that best describes your pain at its least.

        0   1   2   3   4   5   6   7   8   9   10

        No pain.   Pain as bad as you can imagine.

3.c. Please rate your pain by circling the number that best describes your average pain.

        0   1   2   3   4   5   6   7   8   9   10

        No pain.   Pain as bad as you can imagine.

3.d. Please rate your pain by circling the number that best describes your pain right now.

        0   1   2   3   4   5   6   7   8   9   10

        No pain.   Pain as bad as you can imagine.

4.   How frequently do you get the pain?

Once a day/twice a day/ three times a day/others _____

5.   What treatment or medication are you receiving for your pain?

_____

6.   How much relief have treatments or medications provided?

        0   1   2   3   4   5   6   7   8   9   10

        No relief.   Complete relief.

7. During the time you were admitted, have you ever hesitated to take analgesics?

    Yes / No

If yes, state why?

_____

8. During the time you were admitted, have you ever hesitated to report pain?

    Yes / No

If yes, state why?

_____

9. Name of the analgesic used (from the chart)_____

Modified Barrier Questionnaire:

Some of the questions may seem similar to others but please answer all of them. For each of the following items you are requested to answer in terms of numbers (0,1,2,3,4,5,6,7,8,9,10), depending on how closely you agree with that item.

1. It does not do any good to talk about pain because the doctor can not do anything about it anyway.

0	1	2	3	4	5	6	7	8	9	10

    Do not agree at all.   Agree very much.

2. There is a real danger of becoming addicted to pain medicine.

0	1	2	3	4	5	6	7	8	9	10

    Do not agree at all.   Agree very much.

3. Drowsiness from pain medication is a real bother.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

4. Having pain means that the disease is getting worse.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

5. It's a good idea to save pain medication for later when you might really need it.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

6. Nausea from pain medication is distressing.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

7. I do not like having injections.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

8. Pain medicine cannot really control pain.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

9. People get addicted to pain medicine easily.

0	1	2	3	4	5	6	7	8	9	10

Do not agree at all.   Agree very much.

10. Pain medications often make you say or do embarrassing things.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

11. It is important to be strong by not talking about pain.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

12. It is more important for the doctor to focus on curing illness than to put time into

controlling pain.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

13. Having pain means that the illness is getting worse.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

14. Constipation from pain medication is upsetting.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

15. If you take pain medicine when you have some pain, then it might not work as well if

the pain becomes worse.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

16. Pain medicine is only given on schedule.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

17. Pain medicine is very addictive.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

18. It is easier to put up with the pain than with the side effects that come from pain

medication.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

19. Good patients avoid talking about pain.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

20. Doctors need to concentrate on curing the disease and not on dealing with pain.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

21. It is no good to request pain medicine before the time of administration.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

22. The experience of pain is a sign that the illness has gotten worse.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

23. Pain medicine should be "saved" in case the pain gets worse.

    0   1   2   3   4   5   6   7   8   9   10

    Do not agree at all.   Agree very much.

24. Having an injection is painful.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

25. Medicine cannot relieve pain.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

26. Doctors might find it annoying to be told about pain.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

27. Complain of pain could distract the doctor from curing the disease.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

28. No pain medicine will be given before the time of administration.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

29. I am afraid of injections.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

30. Confusion from pain medication is really a bother.

0   1   2   3   4   5   6   7   8   9   10

Do not agree at all.   Agree very much.

Please answer the following questions:

1. Do you have any other concerns regarding pain medication, side effects, pain

   reporting or pain management?

_____

2. What is your belief regarding pain?

_____

APPENDIX C

INFORMATION

Please tell us what you know about the following statements by ticking either "Yes"
or "No" and state from whom, where or how you came to know about them by
circling the appropriate word or words under "source". (For both patients and nurses).

Have you ever received information regarding:	Yes	No	Source
1. Addiction			Doctors/nurses/friends/family/ articles/books/internet/others
2. Tolerance			Doctors/nurses/friends/family/ articles/books/internet/others
3. Pain medication (routes)			Doctors/nurses/friends/family/ articles/books/internet/others
4. Side effects of pain medication			Doctors/nurses/friends/family/ articles/books/internet/others
5. Try to endure pain			Doctors/nurses/friends/family/ articles/books/internet/others
6. Pain being part of being sick			Doctors/nurses/friends/family/ articles/books/internet/others
7. Pain medication given at specific time.			Doctors/nurses/friends/family/ articles/books/internet/others
8. Pain as an indication of disease progression.			Doctors/nurses/friends/family/ articles/books/internet/others
9. Complaints about pain may distract the physician.			Doctors/nurses/friends/family/ articles/books/internet/others

APPENDIX D

DATA COLLECTION INSTRUMENT

Nurses' Knowledge and Attitudes Survey Regarding Pain

(For nurses)

1. Code:

2. Date:

3. Hospital and Ward:

4. How long have you been working in this ward/unit? _____

Demographic data:

5. Gender: 1 (Male) [ ] 2 (female) [ ]

6. Ethnicity: Scharchop/Lhoshum/Layap/Doyap/Ngalong/others _____

7. Marital status:

8. Married [ ] single [ ] divorced [ ] others/specify: _____

1. Age _____ Years

2. Education level:

   GNM [ ] B.Sc. (4 years) [ ] B.Sc. (2 years) [ ] GNM + _____ months in

   _____ (name the specialty).

3. Religion:

   Buddhism [ ] Hinduism [ ] Christian [ ] Muslim [ ] others _____

4. Number of years of service: _____ years.

5. Have you ever attended any workshops [ ] seminars [ ] training [ ] on pain (please

   tick in the appropriate box).

   If yes, state: when _____ (year), how long _____ days/months,

Topic _____

Circle "T" if you think that the statement is true and "F" if you think it is false.

1. Observable changes in vital signs must be relied upon to verify a patient's

    statement that he has severe pain.   T   F

2. Because of an underdeveloped neurological system, children under 2 years

    of age, have decreased pain sensitivity and limited memory of painful

    experiences.   T   F

3. If the patient can be distracted from his pain, it usually means that he

    does not have high pain intensity   T   F

4. Patients may sleep in spite of severe pain.   T   F

5. Comparable stimuli in different people produce the same intensity

    of pain.   T   F

6. Aspirin and other nonsteroidal anti-inflammatory agents are not

    effective analgesics for bone pain caused by metastases.   T   F

7. Non-drug interventions (eg. heat, music, imagery, etc.) are very

    effective for mild-moderate pain control but are rarely helpful for

    more severe pain.   T   F

8. Respiratory depression rarely occurs in patients who have been receiving

    opioids over a period of months.   T   F

9. Aspirin 650 mg per oral is approximately equal in analgesic effect to meperidine (demerol) 50 mg per oral.   T   F

10. The World Health Organization pain ladder suggests using single analgesic agents rather than combining classes of drugs (eg. combining an opioid with a non-steroidal agent).   T   F

11. The usual duration of action of meperidine (demerol) IM is 4-5 hours. T   F

12. Research shows that promethazine (phenergan) is a reliable potentiator of opioid analgesics   T   F

13. .patients with a history of substance abuse should not be given opioids for pain because they are at high risk for repeated addiction.   T   F

14. Beyond a certain dosage of strong opioids (eg. morphine) increases in dosage will not increase pain relief.   T   F

15. Elderly patients cannot tolerate strong medications such as opioids for pain.   T   F

16. The patient with pain should be encouraged to endure as much pain as possible before resorting to a pain relief measure.   T   F

17. Children less than 11 years cannot report pain with reliability and therefore, the nurse should rely on the parents' assessment of the child's pain intensity.   T   F

18. Based on one's religious beliefs a patient may think that pain and suffering is necessary.   T   F

19. After the initial recommended dose of opioid analgesic, subsequent doses are adjusted in accordance with the individual patient's response.T   F

20. In order to evaluate the effectiveness of non-drug interventions, the patient should be advised to use these techniques alone rather than concurrently with pain medications.　　　　T　　F

21. Giving patient's sterile water by injection (placebo) is often a useful test to determine if the pain is real.　　　　T　　F

22. In order to be effective, heat and cold should only be applied to the painful area.　　　　T　　F

Multiple choice – please place a cross by the correct answer.

23. The recommended route of administration of opioid analgesics to patients with prolonged cancer-related pain is

_____ (a) intravenous.

_____ (b) intramuscular.

_____ (c) subcutaneous.

_____ (d) oral.

_____ (e) rectal.

_____ (f) I don't know.

24. The recommended route of administration of opioid analgesics to patients with brief, severe pain of sudden onset, eg. trauma or postoperative pain, is

_____ (a) intravenous.

_____ (b) intramuscular.

_____ (c) subcutaneous.

_____ (d) oral.

_____ (e) rectal.

_____ (f) I don't know.

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) Brompton's cocktail.

_____ (b) codeine.

_____ (c) morphine.

_____ (d) meperidine (demerol).

_____ (e) methadone.

_____ (f) I don't know.

26. Which of the following IV doses of morphine would be equivalent to 30 mg of oral morphine?

_____ (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 chronic cancer pain has been receiving daily opioid analgesics for 2 months. The doses increased during this time period. Yesterday the patient was receiving morphine 200 mg per hour intravenously. Today he has been receiving 250

mg per hour intravenously for 3 hours. The likelihood of the patient developing

clinically significant respiratory depression is

_____ (a) less than 1%.

_____ (b) 1-10%.

_____ (c) 11-20%.

_____ (d) 21-40%.

_____ (e) >41%.

29. Analgesia for chronic cancer pain should 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.

30. The most likely explanation for why 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 request are related to addiction.

31. Which of the following drugs are useful for the treatment of cancer?

_____ (a) ibuprophen (motrin).

_____ (b) hydormorphone (dilaudid).

_____ (c) amitriptyline (elavil).

_____ (d) all of the above.

32. 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.

33. Which of the following describes the best approach for cultural considerations in

caring for patient's in pain

_____ (a) because of the diverse and mixed cultures in Bhutan, there are no

longer cultural influences on the pain experience.

_____ (b) nurses should use knowledge that has defined clearly the influence

of pain on culture (eg. Asian patients are generally stoic, Italians are expressive and

exaggerate their pain etc.).

_____ (c) patients should be individually assessed to determine cultural

influences on pain.

34. What do you think is the percentage of patients who over report the amount of pain

they have? Circle the correct answer.

-0 10   20   30   40   50   60   70   80   90   100%

35. Narcotic/opioid addiction is defined as psychological dependence accompanied by

overwhelming concern with obtaining and using narcotics for psychic effect, not for

medical reasons. It may occur with or without the physiological changes of tolerance

to analgesia and physical dependence (withdrawal).

Using this definition how likely is it that opioid addiction will occur as a result if treating pain with opioid analgesics? Circle the number closest to what you consider the correct answer.

<1%   5%   25%   50%   75%   100%

Case studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication.

Patient A (questions 36 and 37).

Dorji is 25 years old and this is his second day following abdominal surgery. As you enter his cabin to check his vital signs, he smiles at you and continues talking and joking with his visitor. Your assessment yields the following information: B.P. = 120/80; HR = 80; RR = 18. On a scale of –5 (- = no pain/discomfort, 5 = worst pain/discomfort), Dorji rates his pain as "4" at the surgical site.

36. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Dorji's pain.

0-   1   2   3   4   5

No pain/discomfort   Worst pain/discomfort

37. Your assessment above, is made 4 hours after Dorji received morphine 10 mg IM. Dorji's pain ratings ranged from 3 to 4 and he had no clinically significant respiratory depression, sedation or other untoward side effects. His physician's order for analgesia is "morphine IM 5 to 15 mg every 3-4 hours PRN pain relief." Mark the action you will take at this time.

_____ (a) administer no morphine at this time.

_____ (b) administer morphine 5 mg IM now.

_____ (c) administer morphine 10 mg IM now.

_____ (d) administer morphine morphine 15 mg now.

Patient B (Questions 38 and 39)

Wangchuck is 25 years old and this is his second day following abdominal surgery.

As you enter his cabin to check his vital signs, he is lying quietly in bed and grimaces

as he turns in bed. Your assessment yields the following information: B.P. 120/80;

HR = 80; RR = 18. On a scale of –5 (- = no pain/discomfort, 5 = worst

pain/discomfort), Wangchuck's rates his pain as "4" at the surgical site.

38. On the patient's record you must mark his pain on the scale below. Circle the number

that represents your assessment of Wangchuck's pain.

0-   1   2   3   4   5

No pain/discomfort   Worst pain/discomfort

39. Your assessment above, is made 4 hours after Wangchuck received morphine 10 mg

IM. Wangchuck's pain ratings ranged from 3 to 4 and he had no clinically significant

respiratory depression, sedation or other untoward side effects. His physician's order

for analgesia is "morphine IM 5 to 15 mg every 3-4 hours PRN pain relief." Mark the

action you will take at this time.

_____ (a) administer no morphine at this time.

_____ (b) administer morphine 5 mg IM now.

_____ (c) administer morphine 10 mg IM now.

_____ (d) administer morphine morphine 15 mg now.

40. What is your belief regarding pain?

APPENDIX E

Table 1 Mean, standard deviation, F and significance level for pain indicates disease progression

Ethnicity	Mean	SD	F	Sig
Scharchop	6.31	2.67	.83	.48
Lhotsham	6.63	2.14		
Ngalong	6.84	2.11		
Others	7.10	1.63		
Total	6.56	2.36		

Table 2 Mean, standard, F and significance level for pain medication given only at specific times

Ethnicity	Mean	SD	F	Sig
Scharchop	4.59	3.03	.35	.79
Lhotsham	5.13	2.67		
Ngalong	4.62	2.74		
Others	4.78	2.78		
Total	4.73	2.86		

Table 3 Mean, standard deviation, F and significance level for accepting pain because of fatalism

Ethnicity	Mean	SD	F	Sig
Scharchop	2.72	2.18	1.66	.18
Lhotsham	2.88	2.00		
Ngalong	2.97	2.05		
Others	1.76	1.30		
Total	2.70	2.05		

Table 4 Mean, standard deviation, F and significance level for fear of side effects

Ethnicity	Mean	SD	F	Sig
Scharchop	3.05	1.73	4.08	.01*
Lhotsham	4.16	2.07		
Ngalong	4.00	2.17		
Others	3.52	1.51		
Total	3.52	1.93		

* $p < .01$

APPENDIX F

Table 1 Mean, standard deviation, F and significance level for fear of addiction

Age group	Mean	SD	F	Sig
18-29 years	4.24	2.56	1.20	.31
30-39 years	5.03	2.47		
40-49 years	4.33	2.43		
50-59 years	4.93	2.23		
60+ years	5.18	2.16		
Total	4.59	2.45		

Table 2 Mean, standard deviation, F and significance level for good patients do not complain about pain

Age group	Mean	SD	F	Sig
18-29 years	3.55	2.21	1.16	.33
30-39 years	4.36	2.69		
40-49 years	3.92	2.29		
50-59 years	3.36	1.99		
60+ years	3.16	2.54		
Total	3.65	2.33		

Table 3 Mean, standard deviation, F and significance level for pain indicates disease progression

Age group	Mean	SD	F	Sig
18-29 years	6.26	2.56	1.02	.40
30-39 years	7.03	1.98		
40-49 years	6.48	2.95		
50-59 years	6.50	2.31		
60+ years	7.14	1.39		
Total	6.56	2.36		

Table 4 Mean, standard deviation, F and significance level for pain medications given only at specific times

Age group	Mean	SD	F	Sig
18-29 years	4.57	2.70	.83	.51
30-39 years	5.40	3.32		
40-49 years	4.96	2.91		
50-59 years	4.98	2.40		
60+ years	4.13	3.13		
Total	4.73	2.86		

Table 5 Mean, standard deviation, F and significance level for accepting pain because of fatalism

Age group	Mean	SD	F	Sig
18-29 years	2.66	2.08	.69	.60
30-39 years	3.22	2.56		
40-49 years	2.64	2.06		
50-59 years	2.28	1.45		
60+ years	2.64	1.71		
Total	2.70	2.05		

Table 6 Mean, standard deviation, F and significance level for fear of side effects

Age group	Mean	SD	F	Sig
18-29 years	3.44	1.81	.95	.44
30-39 years	3.78	2.07		
40-49 years	3.13	1.89		
50-59 years	3.28	1.96		
60+ years	4.04	2.15		
Total	3.52	1.93		

APPENDIX G

Table 1 Mean, standard deviation, F and significance level for fear of addiction

Education level	Mean	SD	F	Sig
No education	4.30	2.44	1.38	.25
Primary	4.81	2.58		
Secondary	5.17	2.37		
Tertiary	5.15	2.20		
Total	4.59	2.45		

Table 2 Mean, standard deviation, F and significance level for complain of pain may distract the physician

Education level	Mean	SD	F	Sig
No education	4.37	2.53	.36	.78
Primary	4.48	2.12		
Secondary	4.17	2.91		
Tertiary	5.02	1.74		
Total	4.40	2.48		

Table 3 Mean, standard deviation, F and significance level for good patients do not complain about pain

Education level	Mean	SD	F	Sig
No education	3.48	2.38	.72	.54
Primary	3.60	2.08		
Secondary	4.03	2.68		
Tertiary	4.23	1.65		
Total	3.65	2.33		

Table 4 Mean, standard deviation, F and significance level for fear of injection

Education level	Mean	SD	F	Sig
No education	3.75	2.59	2.67	.05
Primary	4.53	3.01		
Secondary	4.73	2.98		
Tertiary	5.64	2.60		
Total	4.19	2.77		

Table 5 Mean, standard deviation, F and significance level for accepting pain because of fatalism

Education level	Mean	SD	F	Sig
No education	2.63	1.95	.20	.90
Primary	2.77	2.21		
Secondary	2.74	2.32		
Tertiary	3.08	2.04		
Total	2.70	2.05		

Table 6 Mean, standard deviation, F and significance level for fear of side effects

Education level	Mean	SD	F	Sig
No education	3.08	1.79	5.78	.001*
Primary	3.77	1.88		
Secondary	4.49	2.12		
Tertiary	4.35	1.69		
Total	3.52	1.93		

* $p < .01$

APPENDIX H

Table 1 Mean, standard deviation, t test and p values for gender and the subscales

Variable	Mean	SD	t	p
Fear of addiction				
Male	4.36	2.58	-1.12	.266
Female	4.77	2.34		
Fear of tolerance				
Male	5.41	2.55	-.95	.346
Female	5.78	2.65		
Complaints of pain may distract the physician				
Male	4.42	2.53	.10	.923
Female	4.39	2.45		
Good patients do not complain about pain				
Male	3.35	2.37	-1.54	.126
Female	3.89	2.29		
Fear of injection				
Male	3.90	2.89	-1.24	218
Female	4.41	2.66		
Pain indicates disease progression				
Male	6.30	2.55	-1.33	.185
Female	6.77	2.20		
Pain medications given only at specific times				
Male	4.51	2.81	-.94	351
Female	4.91	2.90		
Accepting pain because of fatalism				
Male	2.87	2.15	.99	.327
Female	2.57	1.97		
Fear of side effects				
Male	3.60	2.01	.48	.635
Female	3.46	1.87		

APPENDIX I

INSTRUMENT VALIDATION EXPERTS

1. Associate Prof. Dr. Praneed Songwathana (nurse educator).

2. Dr Singay (anesthetist)

3. Dr G.M. Rai (anesthetist)

4. Mrs Ugen Doma (nurse researcher)