



**KNOWLEDGE, ATTITUDES, PRACTICES AND CHALLENGES  
FACED BY NURSES IN PAIN MANAGEMENT AMONG SURGICAL  
PATIENTS, IN ONE REFERRAL HOSPITAL IN RWANDA.**

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Master of Science in Nursing/MEDICAL-SURGICAL NURSING

July 2017



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by

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A dissertation submitted in partial fulfillment of the requirements for the  
degree of **MASTER OF SCIENCE** in **NURSING/MEDICAL-SURGICAL  
NURSING**

in the

College of Medicine and Health Sciences

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July 2017

## **DECLARATION**

I do hereby declare that this *dissertation* submitted in partial fulfilment of the requirements for the degree of **MASTER OF SCIENCE** in **NURSING/MEDICAL-SURGICAL NURSING TRACK**, at the University of Rwanda/College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited.

Date and Signature of the Student

.....

## **DEDICATION**

This work is dedicated to my Heavenly Father (Almighty God) for all He did and all God continues to do for me,

It is dedicated to:

My wife Umutete Clementine, My son Ishimwe Benimana Heritier Bryan, My late father and My mother, brothers and sisters and all other family members.

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## LIST OF SYMBOLS AND ABBREVIATIONS

**%:** Percentage

**AHCPR:** Agency for Health Care Policy and Research guidelines

**CHUB:** Centre Hospitalier Universitaire de Butare (University Teaching Hospital of Butare)

**CMHS:** College of medicine and health sciences

**DG:** Director General

**Dr:** Doctor

**ENT:** Ear, nose and throat

**HRH:** Human resource for health

**ICU:** Intensive care unit

**KAP:** Knowledge, attitude and practice

**Mr:** Mister

**n:** Number of respondents who answered the item.

**N:** Sample size

**NINR:** National Institute of Nursing Researches

**NKAS:** Nurses' knowledge and attitudes survey

**N<sup>o</sup>:** Number/order

**RNAO:** Registered nurses' association of Ontario

**SONM:** School of nursing and midwifery

**SPSS:** Statistical package for social sciences

**UR:** University of Rwanda

**US:** United States

**WHO:** World health organization

## ABSTRACT

**Introduction:** Pain is one of the major symptoms experienced by patients and is the major reason that brings patients to the hospital. The nurses have big role to play in the management of patients' pain because they are often the point of contact between the physicians and the patients and very often the nurses are the only one they may be able to report to, and their ability to respond to them will determine the patients' outcome. **Purpose of the study:** to determine knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients, in one referral hospital in Rwanda. **Specific objectives:** to identify pain management practices among nurses caring for surgical patients, to determine the level of knowledge of nurses about pain management among surgical patients, to determine the attitudes of nurses caring for surgical patients towards pain management, to identify the barriers or challenges that nurses face regarding pain management. **Methodology:** A quantitative approach, descriptive cross-sectional design was used. The study was conducted at CHUB. Population was all nurses working in the four services: ICU, surgical ward, emergency and operating theatre. Convenience sampling was used in this study. Sample size was all nurses working in those services (87 nurses). Pilot study was conducted on 10 nurses. A questionnaire was used to gather data. Data was entered into SPSS version 23. **Results:** the study found that nurses managing surgical patients had poor and insufficient knowledge, negative attitudes and poor practices related to pain management; several barriers were also identified to effective pain management. **Conclusion:** Practices related to assessment and management of pain is still poor in the study setting and this was due to many factors as lack of knowledge, negative attitudes and other identified barriers. **Recommendations:** Quality improvement projects regarding pain management need to be conducted; supervision and monitoring of daily nursing activities must be done, ensuring that pain is assessed and documented together with other vital signs; CPDs, refresher in service trainings regarding pain assessment and pain management; pain management should be incorporated and reinforced into nursing and other health related professions curriculum.

**Key words:** Nurses, Knowledge, Attitudes, Practices, Barriers, Pain management, Surgical patients.

# **CHAPTER 1. INTRODUCTION**

## **1.1 INTRODUCTION OF THE CHAPTER**

This chapter is talking about introduction and background of this study, problem statement, aim of the study, research objectives, research specific questions, significance of the study, definition of concepts and conclusion to chapter one.

## **1.2 BACKGROUND OF THE STUDY**

Pain is considered as unpleasant sensory and emotional feeling or experience that is associated with tissue damage and is described by severity of that tissue damage (Kassa et al., 2014). Pain can be a direct or indirect consequence of many diseases and it remains under treated in all countries therefore the World Health Organization [WHO] aims on improving quality of care provided regarding pain management for every patient (Kumar, 2007).

Pain is the major symptom that brings patients to the health care setting and is also the commonest symptom that hospitalized patients encounter in general and in surgical settings in particular (Alzghoul et al., 2016). The prevalence of pain remains high among surgical patients particularly post-operative patients and unrelieved post-operative pain affects the patient physiologically, psychologically, and socio-economically (Basak et al., 2010). According to Kipkorir (2011), 79 % of in patients suffer from pain. Nurses as the health care professionals are often closer than others to the patients in all services including in surgical settings, therefore they are highly responsible for effective pain management and must advocate for the patients.

Pain management practices are the activities that are provided by nurses and other health care professionals to ensure that the pain is managed effectively (Alzghoul et al., 2016). Among those activities there is assessing the patients' pain, to ensure there is provision of appropriate interventions to relieve pain and to ensure the reassessment is done after provision of intervention (Kizza et al, 2012). However there are barriers to the provision of interventions for managing pain. Three barriers have been reported regarding pain management practices, patients related barriers, institution related barriers and healthcare professionals related barriers (Jahn et al., 2010).

The correct diagnosis and proper treatment of pain are important aspects of care in all health care settings. Even though neglecting to manage patients' pain is considered as bad behavior and ethically and morally unacceptable, millions of patients World widely suffer from pain because of the ignorance and negligence of doctors and nurses and the lack of standardized protocols and guidelines about pain management. WHO is trying all means to provide the protocols and guidelines on the treatment of pain in all health care settings (Kumar, 2007).

Currently there is involvement of all health care professionals from different specialties in caring for patients with pain but pain management requires particular training and education because all the health care professionals do not have common curriculum on plan of pain management. Therefore World Health Organization [WHO] needs to develop guidelines using a multidisciplinary approach in pain assessment and management (Kumar, 2007). There are a lot of international organizations that aim at improving the patients' safety and improving the quality of care through efficient and effective pain management and there are reports and data available about ineffective pain management by nurses in all countries (Donohue, 2012).

Guidelines about pain management emphasize on pain that has to be assessed together with other vital signs (Aziznejadroshan et al. 2015) . Self-report is considered as the best and reliable tool for the assessment of pain by health care providers, rather than focusing on the patients' behavior and other vital parameters (Manwere et al., 2015).

Although all health care professions and WHO are focusing on improvement of the management of pain and ensuring guidelines are available to improve the quality of life for the patients with pain, some studies found that surgical patients report pain more than other types of patients (Masigati & Chilonga, 2014) and this shows that there is need of further researches.

Tufekci, et al (2013) reported that pain is associated with reason of hospitalization regardless of the patient's age, patient and health care professionals are central to this. Sometimes patients don't request or accept pain medication because of fearing that their lives will be in danger and nurses fear dependence, addiction and medications side effects, reason of not managing pain effectively (Masigati & Chilonga, 2014).

Ther & Ababa (2014) reported the reasons for not relieving the patient's report of pain as the bad belief and myths that the patient will be addicted to the drugs, and sometimes lack of skills and knowledge about management of reactions related to the drugs. The researchers found that if pain is regularly assessed and managed before it becomes severe, dependence and addiction are avoided (Suha et al, 2014). The provision of both pharmacological therapy and non-pharmacological therapy to patients in order to maximize pain relief is in responsibility of the nurses. Those non-pharmacological interventions can be cognitive or physical. Cognitive techniques focus on mental status distraction like music and relaxation yet physical techniques involves management of physiological processes like massage and heat and cold application (Manwere et al, 2015).

Neglecting and ignoring patients' pain is ethically and morally unacceptable behavior as such behavior bring consequences and complications related to pain symptom for the patients, health care professionals and the healthcare organizations (Masigati & Chilonga, 2014). It has been proven that unrelieved pain produces complications that significantly affect the physical, emotional and spiritual status of the patient, and can disturb the quality of life (Karamjeet, 2017).

Even though nurses have a big impact and pivotal role in managing patients' pain as they are in a central role between the responsible physicians and patients, they are not the only ones who are responsible for relieving patients' pain (Kipkorir, 2011; Suha et al, 2014). Knowledge, attitudes and practical skills affect the nurses' ability and behaviors to effectively manage pain (Miller, 2012). Manwere et al (2015) found positive attitude of the nurses towards pain management but with insufficient knowledge for effective pain management. Ther & Ababa (2014) reported that nurses provided reasons like low salaries, gap in knowledge and lack of job description in terms of pain management as factors of poor knowledge and negative attitude towards pain management.

Manwere et al (2015) found the clinical experience as the first major factor that increases nurses' knowledge in managing patient's pain as the nurses with longer clinical working experience applied well their knowledge of pain into their daily practices than those with short experience. A study conducted in Malaysia found that the nurses who experienced pain in their lives had good practice in pain management and nurses aged more than 40

years had better knowledge than others Manwere et al (2015). Yava et al (2013) in their study in Turkey didn't find any relationship between knowledge about pain management and demographic data of nurses such as age, and years of experience.

Manwere et al (2015) in their study about exploration of the knowledge and attitudes of nurses at nursing faculty found that nurses reported monitoring the vital signs and interpreting facial expression of the patient as the best way of assessing the level of pain. Ther & Ababa (2014) found that nurses focused on patients' behavior than other thing else to measure the levels of pain.

Johnson et al. (2015) in Rwanda examining the anesthesia residents' perspectives, perceptions and experience towards pain management at University Teaching Hospital in Kigali, revealed gap in knowledge and bad attitudes towards pain management. It identified some barriers to proper pain management as: poor communication between health professionals and stakeholders or patients; lack of on job training or in service training; lack of protocols; lack of proper and standardized ways of doing pain assessment; and also lack of participation in resource allocation decisions. The study has also found that administration of pain killers was based on patient request, and pain management was low priority in post operative ward.

Available studies revealed that health care professionals have inadequate knowledge and negative attitudes related to pain management which contribute to ineffective pain management. These knowledge deficits, negative attitudes and the misconceptions and negative beliefs among all health care professionals that patients will develop addiction, or exaggerating their pain intensity have also been highlighted in several studies including in low and middle income countries (Ufashingabire et al., 2016).

Latest and oldest studies done have been conducted mostly in ICU, and oncology settings; and most of them dealt with anesthesiology team or nurses caring for cancer patients; but there were limited studies about knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients particularly in Rwanda. Therefore the aim of this study was to explore the knowledge, attitudes, practices and challenges faced by nurses in pain management for surgical patients at one referral hospital in Rwanda.

### **1.3 PROBLEM STATEMENT**

Surgical patients have pain due to trauma or surgeries, and this reduces their levels of comfort. Negative physiological, socio-economical, emotional and psychological changes happen when the pain is ineffectively managed (Craig, 2014).

Nurses are often the only ones who may hear of pain endured by the patients and who carry out the advices of the surgeon on pain management. Their knowledge and ability to communicate are very important in pain management. Gap in knowledge about pain assessment and management, inability to assess pain, and poor communication between the patient and the health-care provider are all factors that lead to ineffective pain management (Pasero et al, 2009).

At CHUB, the pain management committee involving all health care professionals was established; few healthcare professionals have been trained about pain assessment and its management and the posters about pain assessment and its management are everywhere in the patients' wards, and still the clinical documentation audits done montly reveal deficiencies in pain management; and even from researcher's experiences while working in CHUB, pain assessment is not done and not documented and management of pain is not effective, as patients often continue to suffer pain. This situation requires investigation in form of a research study on pain management among nurses at CHUB in order to highlight inadequacies and expand such researches in the whole country.

Deficiencies in pain management at CHUB are found in clinical documentation audit and in the patient interview that are done monthly in every clinical service by all staff. The documents show that medications and patients' charts are not properly completed and majority of patients respond that their pain is not well managed. The reasons for such deficiencies in pain management and their relation to the nurses' knowledge, attitudes and practices behind these deficiencies are not known and even nothing is known about the barriers the nurses face in pain management. There are even no documented studies at CHUB reporting nurses' knowledge, attitudes and practices related to pain assessment and management among surgical patients as well as challenges thye nurses face to effective pain management. Therefore the study was aimed at exploring nurses' knowledge, attitudes and practices about pain management among surgical patients and the challenges the nurses face towards effective pain management.

#### **1.4 THE AIM OF THE STUDY**

From the existing articles about pain management, nurses need to be equipped with sufficient knowledge, good attitudes and good skills about pain assessment and management in order to be able to manage pain effectively. Therefore, the aim of this study is to assess nurses' knowledge, attitudes, practices and challenges they face in pain management among surgical patients, in one referral hospital in Rwanda.

#### **1.5 RESEARCH SPECIFIC OBJECTIVES**

- To determine the level of knowledge of nurses about pain management among surgical patients in one referral hospital in Rwanda;
- To determine the attitudes of nurses towards pain management among surgical patients;
- To identify the practices of nurses about pain management among surgical patients at in one referral hospital in Rwanda;
- To identify and detect challenges nurses face in managing pain among surgical patients in one referral hospital in Rwanda;
- To identify and test the relationship between the socio-demographic characteristics of the nurses and their knowledge, attitudes and practices about pain management.

#### **1.6 RESEARCH QUESTIONS**

- What is the level of knowledge of nurses caring for surgical patients in one referral hospital in Rwanda about pain management?
- What are attitudes of nurses caring for surgical patients in one referral hospital in Rwanda towards pain management?
- What are the practices of nurses caring for surgical patients in one referral hospital in Rwanda about pain management?
- What are the challenges the nurses caring for surgical patients in one referral hospital in Rwanda face towards pain management?

- Is there any relationship between socio-demographic characteristics of the nurses and their knowledge, attitudes and practices about pain management?

### **1.7 SIGNIFICANCE OF THE STUDY**

Nurses who care for surgical patients must have sufficient knowledge about pain management which will influence their attitudes therefore changing behaviors towards pain management and empowering them to provide effective pain management (Rantala, 2014).

The study will aim at finding the gap and provide the available information related to knowledge, attitudes and practices of nurses working in one referral hospital in Rwanda regarding pain management among surgical patients and challenges they encounter towards pain management. There are no studies done regarding pain management among surgical patients in the hospital besides ICU and other areas whereas surgical patients may be suffering from poorly managed pain at emergency, surgical ward and operating theatre. The results of this study therefore will provide necessary data to increase the area of the study.

The study will provide important information that will help in developing clinical audits and other quality improvement projects and developing audit instruments to identify the ability and skills of nurses in assessing the patients' condition and delivering individualized holistic care. This may lead to the eventual improvement in the quality of care provided to the surgical patients and all patients in general in Rwanda.

This study will help in developing appropriate educational strategies and initiatives to improve the knowledge, practices and attitudes of pain assessment and management among nurses, and ensure its implementation and evaluation in order to reduce or prevent patients' suffering. The study findings will help in developing protocols, policy and guidelines regarding pain assessment and pain management in order to improve nursing cares and suggest ways to address identified challenges. The study will form the basis for further researches in pain management in Rwanda.

## **1.8 DEFINITION OF CONCEPTS**

**Knowledge and attitudes of nurses regarding pain management for surgical patients:** refers to the way nurses understand, know, believe and perceive about pain; causes of pain; consequences of pain; influencing factors for pain perception; pain assessment; and pain management and pain management at the pre, intra and post-operation periods (Basak et al, 2010).

**Nurses' pain management practice:** refers to the all activities nurses do such as the use of pain assessment tool in assessing pain, provision of pharmacological and no pharmacological therapy to patient in pain, ability to manage side effects of pain medication in order to manage effectively pre, intra and post-operative pain among surgical patients in their nursing practice (Basak et al, 2010).

## **1.9 ORGANISATION OF THE STUDY**

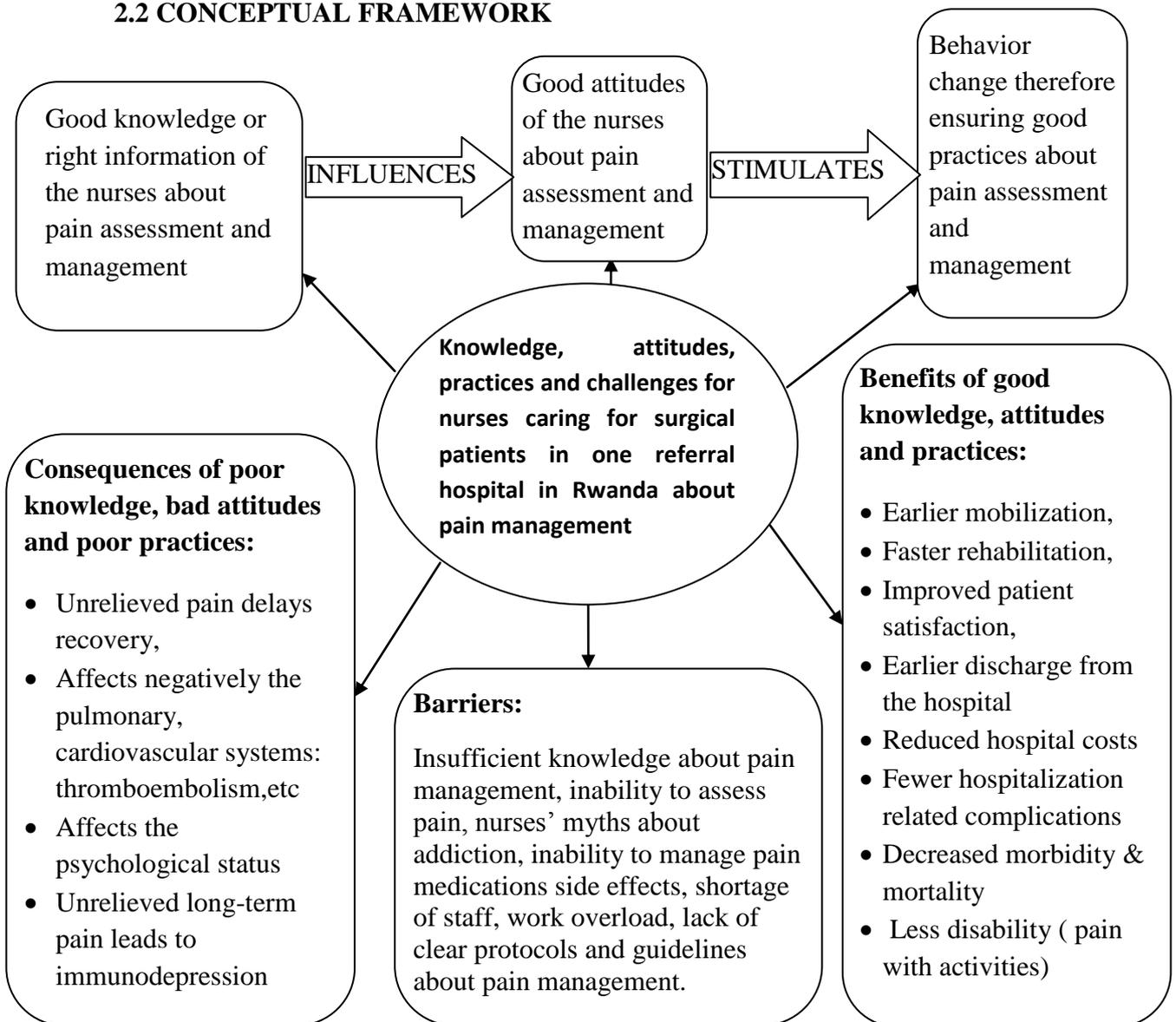
The study is organized in this way: chapter 1. Introduction, chapter 2. Literature review, chapter 3. Methodology, chapter 4. Results presentation and interpretation, chapter 5. Discussion of the results and chapter 6 is talking about Conclusion and recommendations.

## CHAPTER 2. LITERATURE REVIEW

### 2.1 INTRODUCTION TO THE CHAPTER TWO

This chapter will provide information about conceptual framework used in this study, pain and pain management theories, pain management, knowledge and attitudes of nurses regarding pain management, practices of nurses related to pain management, consequences of poorly managed pain, challenges to effective pain management, and then after strengths, weaknesses, gaps and limitations of reviewed literature.

### 2.2 CONCEPTUAL FRAMEWORK



**Figure 1: Conceptual framework of the study: KAP of nurses about pain management among surgical patients (Basak et al., 2010).**

This conceptual framework was adopted from the framework of the studies done about knowledge, attitude and practice (KAP) and the review of the existing literature about pain management. KAP framework has been used in family planning and population studies from 1950s and it stipulates that the right and proper information (good knowledge) influences good and proper attitudes contributing to change behavior (ensuring good practice) (Basak et al., 2010). But even if the knowledge, attitudes and practices are intertwining concepts, in this study, every concept will be studied independently.

### **2.3 PAIN AND PAIN MANAGEMENT THEORIES**

Besides pain being defined as unpleasant sensory and emotional experiences that are associated with potential tissue damage (Kassa et al., 2014), it is also whatever the patient says it is or exists when it does (Lilley et al., 2011). These two definitions are interrelated because one confirms another. According to Lilley et al. (2011), pain can be classified as acute pain, which is rapid, sudden onset but diminished under treatment; chronic, which is the pain that lasts longer, between three to six months and cannot be easily treated; and breakthrough pain that is developed during the first time that the first dose was given and waiting for the second dose to be given.

Pain is universal human experience, and traditionally, it was considered as physical symptom of illness or injury that is brought by simple stimulus. Though the nurses' roles were considered to relieve pain and alleviate sufferings, little was known about pain management and there were only limited ways to manage pain. Recent researches revealed that pain can affect physical, emotional and cognitive well-being of the human beings; and there recent researches have widened the view and understanding of pain and its characteristics. Pain is categorized into different types according to their duration, sources and causes of pain (Sazzad, 2010).

According to the duration, there is acute pain that is accompanied by physiological changes like increased blood pressure, pulse rates, etc and behavioral responses like restlessness, increased levels of anxiety, irritability, etc; and chronic pain in which the patient can experience behavioral responses but there are no physiological changes observed. Based on the source, pain can be nociceptive which can be somatic that arises from bones, tendons, nerves and blood vessels; or visceral that results from stimulation

of nociceptors from abdominal and thorax cavity; and neuropathic that is caused by direct injury to the structures of nervous system. According to causes, pain can be due to illness, surgery, trauma, nursing and medical interventions, invasive procedures, diagnostic procedures and immobilization. There is also psychogenic pain which occurs without or with minimal physical evidence of diseases or tissue damage.

Coffey et al. (1982) reported several theories of pain and among them there are: specificity theory of pain, pattern theory of pain, gate control theory, anodal blocking theory, and central inhibition theory. Gate control theory was developed by Malzack et al. (1965) basing on physiological evidence of spinal mechanism. This theory states that the spinal cord has gate that either blocks pain signals or allows them to go into the brain. Therefore nurses and all other health care professionals need to have good understanding regarding all these theories, in order to apply them into their practices during pain alleviation.

According to Berman, et al. (2008), pain management is important aspect of nursing care that helps in promoting healing, preventing complications, and relieving patients' sufferings. However misconceptions and biases that are related to nurses' attitudes and knowledge deficits can lead to ineffective pain management. The study also stated that pain management among nurses involves pharmacological and non-pharmacological interventions.

Pharmacological pain management means are use of medications, and currently there are three categories: opioids (narcotics or central nervous system acting drugs) as morphine; non steroidal anti inflammatory drugs like acetaminophen, ibuprofen, aspirin, etc and adjuvants (co-analgesics) like benzodiazepines, etc (Berman, et al. 2008). Non-pharmacological pain management interventions must be combined with pharmacological ones in order to enhance pain relief more effectively. Among them, there are physical: comfort measures like clean and smooth sheets, position change, passive exercises, hot or cold application, etc; cognitive-behavioral intervention: psychological support like deep breathing, distraction, relaxation, play, other cognitive therapies; and finally environmental and emotional interventions: touching, reassurance, active listening, effective communication, establishment of efficient patient-caregiver relationship, etc (Berman, et al. 2008).

Nurses and other health care professionals must have good and proper understandings of these pain and pain management theories and ensure that all these measures for effective pain management are implemented in order to avoid sufferings to their patients suffering from pain.

## **2.4 PAIN MANAGEMENT**

Pain is everything the experiencing person says it is and its assessment emphasizes on believing the patients' report as it is the crucial step to successful pain management (Onwong et al., 2014). Pain as subjective data, sometimes is difficult to assess and manage due to several reasons: patient and health care professional perception, degree of tolerance to pain, knowledge, attitudes and practices level of healthcare provider. All these dimensions need to be considered in caring for patient with pain (Kam, 2007).

Although proper pain assessment is essential for the provision of good quality health care and pain management, it is still inadequately conducted and poorly documented and sometimes nurses tempt to consider pain as objective rather than subjective data which affect negatively effective pain assessment and management (Kam, 2007). It is very important to manage pain effectively in order to maintain the patients' dignity (Alzghoul et al, 2016). Statistics show that 78% of patient received at emergency are with pain and 70% of patients in critical conditions present pain related to procedures during their hospitalization (Kizza, 2012).

Study done in Canada among 140 critical care nurses found that attitudinal and educational factors influence the assessment and management of procedural pain where majority of them reported that pain assessment as a very important aspect before any kind of procedure but their attitudes differed from this as only 50% assessed pain before any procedure. This indicated also that nurses had sufficient knowledge about pain assessment and management before procedure but had bad attitudes as that knowledge was not put into practices (Kizza, 2012).

### **2.4.1 Knowledge and attitudes of nurses about pain assessment and management**

Conducting KAP studies among health care professionals has been proven as best way of ensuring proper and effective pain management as these studies help in identifying then gaps regarding those concepts (Pasero et al, 2009).

The nurses need to have an understanding of each component of pain assessment and management, and also nurses' education has to equip them in order to manage pain appropriately. For better positive outcomes, nurses must ensure proper assessment and intervene accordingly to the patient in pain (Hatija et al., 2014). Nurses are not the ones to prescribe pain medication but decisions to administer those drugs are within their scope of practices, so their beliefs and knowledge about pain management can affect the patients in different ways (Kipkorir, 2011).

The clinical practice guideline for postoperative pain management was developed in 1990 by interdisciplinary team that has been given the task by AHCPR to review available researches, practices about pain management, but still the reports are being given that there is no implementation of those guidelines. All healthcare professionals must have sufficient knowledge about pain assessment and management and also the consequences of poorly managed pain but some studies highlight that nurses and other health workers have inadequate and insufficient knowledge about pain assessment and management (Rn et al., 2011).

The study done in Kenya among 200 clinicians (170=85% were nurses) about knowledge and practices of them in management of postoperative pain revealed that minority of nurses (41%) had sufficient knowledge yet majority (79%) had formal teaching and training about pain management principles. The study also showed that experience in postoperative service had no influence on knowledge about pain management (Kizza, 2012).

Tufekci et al. (2013) have identified knowledge deficits about pain management and health care professionals' misconceptions about pain as the major challenge towards effective pain management. Among the challenges about pain management that are related to health care professionals, there is insufficient knowledge about pain assessment and management, therefore health care professionals need to have recognition of it in order to improve quality of care through pain management (Pasero et al, 2009). Longer recovery period and increase in hospital stay have been identified as element contributing to pain among hospitalized patient by NINR in 1994.

It has been proven that the biggest challenge to effective pain management is the overestimation or underestimation of the level of patients' pain (RNAO, 2013) where

nurses tend to increase or decrease the analgesia doses when the patient's pain is reported as severe or minor and sometimes this is done without proper pain assessment or prescriber's orders (Yava et al., 2013). Ortiz et al., (2015) reported that nurses did not know the duration of action of analgesics they were giving to the patients and the nurses' knowledge about opioid drugs was at low level. The study reported also that majority of nurses were not able to determine the doses for those analgesics. The study also revealed that many nurses didn't know the commonest side effect of narcotic (constipation) and the preferred route of analgesics (oral).

#### **2.4.2 Practices related to pain management**

Effective pain management begins with complete and accurate assessment and documentation of findings to help in deciding the treatment options and also to ensure effective and therapeutic communication between health care professionals and between health care provider and patient (Kizza et al., 2015). Among other key components in pain management, the health care professionals need to understand pathology or conditions that the patient is experiencing and even understand how some procedures are painful in order to ensure adequate pain management (Jarzyna et al, 2011).

Effective pain assessment requires use of a proper, reliable and appropriate assessment tool (Shugarman et al, 2010) and it is recommended to use always the same pain scale each time when assessing same patient's pain. Pain assessment has to be done first then provide intervention about pain management according to the severity or degree of pain and then after reassess the patient's pain to measure effectiveness of pain medications. All these things must be documented well and appropriately (Kizza, 2012).

Pain must be considered as the fifth vital sign and its management must depend on the severity, patient self report in order to ensure adequate treatment. It must be assessed when patient is at rest, coughing or ambulating but at rest is very important it guides on what will be the status of the patient while sleeping or how the patient is tolerating the pain. Adequate reassessment has to be done in order to monitor effectiveness of the pain medications (Love et al., 2012).

Many studies highlight that inadequate pain management is solely on nurses responsibility because are the ones who are always with patients, they know well the status of the patients than other health care professionals. That inadequate pain

management happens whenever there is no assessment done, no documentation, nothing about pain management and inability to manage side effects related to pain medications (Kizza, 2012).

Kizza (2012) while examining how often critical care nurses assess pain (n=91), found that majority (57.1%) assessed patient's pain before administration of analgesics. This is a short percentage because proper pain assessment is crucial step for effective pain management and also revealed that 96% of the clinicians reported routine management of post-operative pain but did not specify how often they have assessed for pain or whether management was according to the findings from assessment.

Under or over estimation of patient's pain by nurses is still being reported and some studies also found that there is discordance between nurses' assessment and patients' report about pain (Alzghoul et al., 2016). This is supported by Kizza et al., (2015) who found that some nurses had disagreement regarding pain score with the patients whom they were assessing pain where some of nurses reported that their patients were overestimating their pain, and this has led to ineffective pain management because of that disagreement or poor communication. Other patients who reported moderate to severe pain have received only few of the analgesics doses they were supposed to take. Such findings show that nurses don't consider patient self report as best way of assessing patient pain which compromises the effective pain management.

#### **2.4.3 Consequences of inadequately managed pain**

Adequate pain relief can't be achieved without adequate assessment. Study done in Tanzania among 156 orthopedic patients, revealed that 76.5% of patients reported same pain score after receiving pain medication. It also revealed that patients were early recovering and there were no complications or untreated pain reported because pain was being properly assessed and there were effective pain management according to the pain score (Smita et al., 2015).

Poor pain management principles affect the physiological, psychological and socioeconomic status of the patients, families, societies and even health care professionals (Craig, 2014). Physiologically, unrelieved pain affects all systems in the body through stimulation of the generalized sympathetic response leading to immunodepression which increase the risks of being susceptible to disease (Faponle &

Usang, 2017). Untreated pain limit or decrease respiration frequency that for long period can cause lung collapse because diaphragm is not working properly and the chest movements not being as they are supposed to be. All these expose the patient to develop hypoxia, pneumonia. Most of the patients with prolonged unrelieved pain have nausea and some develop postoperative paralytic ileus (Faponle & Usang, 2017).

Most of the patients with unrelieved pain don't move, have anxiety and stress and their religious beliefs are affected and all these affect their lifestyles. Effective pain management brings patient happiness because of satisfaction, early ambulation, faster recovery, and early discharge therefore decreased health care costs (Kizza, 2012).

#### **2.4.4 Challenges to effective pain management**

Challenges to effective pain management are related to multiple factors: patient-related factors, provider-related factors and system-related factors (Kam, 2007).

Challenges related system about pain management generally reflect a low priority given to pain management within an institution, as evidenced by lack of clear policies and guidelines regarding pain assessment, documentation and management; lack of reliable pain scale; lack of continuity of care or clear protocols on who is responsible of pain management, shortage of staff and lack of pain education plans and programs within institution (Kam, 2007). Interventions to improve barriers within health care systems have to be developed through quality improvement projects within institution.

Challenges related patients about pain management include knowledge deficits of pain management, myths of using opioids, and cultural norms of being a 'good' patient, fear to raise the concern. According to Kizza et al., (2015), hemodynamic unstable and non verbal communication of the postoperative patients have also been reported by the critical care nurses as factors related to patient that limit them to ensure proper pain assessment and effective pain management.

Challenges related to providers about pain management include the misconception about the use of narcotics, inability to monitor pain medications side effects, inability to use pain scale in pain assessment, lack of knowledge about pain related matters, and not follow the standard guidelines provided by the World Health Organisation regarding pain management (RNAO, 2013). According to Vallerand (2004), there were several

challenges identified by nurses regarding pain management: lack of knowledge about pain management, lack of skills about pain assessment and management, myth of fearing that the patient will be addicted, lack of management skills of pain medications side effects, and ineffective communication and relationship with physicians or patients.

Study done by Kizza (2012) reported high volume workload, shortage of staff, lack of interest in focusing on pain management, insufficient knowledge about pain assessment and management, ineffective communication, lack of ownership, lack of staff training and patients beliefs as the major barriers to effective pain management. Dale & Bjørnsen (2015) reported all these as contribute factors to ineffective pain management: the shortage of nursing staff and a lot of work have been identified by critical care nurses as barriers that limit them to ensure effective pain assessment and management because they don't get time to interact with the patients or assess them. They reported also that their institutional policy states that pain medications can't be administered unless if the diagnosis and prescription are made by physicians.

Studies reviewed in this literature revealed that health care professionals have inadequate knowledge and negative attitudes related to pain management which contribute to ineffective pain management. These knowledge deficits, negative attitudes and the misconceptions and negative beliefs among all health care professionals that patients will develop addiction, or exaggerating their pain intensity have also been highlighted in several studies including in low and middle income countries (Ufashingabire et al., 2016).

Latest and oldest studies done have been conducted mostly in ICU, and oncology settings; and all dealt with anesthesiology team or nurses caring for cancer patients; but there were limited studies about knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients particularly in Rwanda. Therefore the aim of this study was to explore the knowledge, attitudes, practices and challenges faced by nurses in pain management for surgical patients at one referral hospital in Rwanda, and this has involved all nurses from accident and emergency where surgical patients are admitted from, operating theatre and recovery for post-operative patients and surgical ward and ICU depending on patient's post-operative outcome.

## **2.5 STRENGTHS, WEAKNESSES, GAPS AND LIMITATIONS OF LITERATURE**

Literature reviewed revealed that there is need of educating the nurses and other health care professionals about pain assessment and pain management because most of them found deficiencies regarding knowledge, attitudes and poor practices. Most of the studies have used quantitative, cross-sectional approach and only few studies have used qualitative approach or other designs. The most available articles were about pain management for ICU and oncology patients. Most of the studies have analyzed the knowledge and attitudes as same concepts and couldn't differentiate knowledge questions and attitudes questions.

Due to all these facts, the literature had some limitations, where the researcher couldn't find available data regarding knowledge, attitudes, practices and challenges of nurses regarding pain management among surgical patients worldwide and even in African countries. Therefore the current study will be the basis for further researches about knowledge, attitudes, practices and challenges faced by nurses in pain management domain among surgical patients.

## **CHAPTER 3. RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION TO CHAPTER THREE**

This chapter comprises of: research design, research approach, research setting, study population, sampling strategy, sample size, data collection tool, data collection procedures, data analysis, ethical considerations, data management, data dissemination, limitations of the study.

### **3.2 RESEARCH DESIGN**

The research used cross-sectional design in assessing the knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients and it will be conducted at one moment of time during the period of the research.

### **3.3 RESEARCH APPROACH**

A quantitative approach was chosen because it enabled the researcher to collect numerical data and perform quantitative analysis using statistical procedures. The researcher used deductive approach in this quantitative research in order to investigate the existing phenomena.

### **3.4 RESEARCH SETTING**

The study was conducted in one referral hospital in Rwanda which is University Teaching Hospital of Butare (CHUB). CHUB is one of referral hospital situated in Ngoma Sector, Huye District, Southern Province. It has a capacity of 500 beds. CHUB is staffed by 515 employees and among them, 55.1% (284) are nurses and midwives. It receives referred patients from Southern Province and part of Western Province. It has all departments and units required for referral hospitals. Among those departments or services, there are surgery, emergency and ICU. These services have nurses qualified with diplomas, and bachelor's degree in nursing. Those nurses have been chosen because they mainly care for many patients with surgical conditions (surgical, traumatic, and neurological and burns, etc). Those service units have been chosen because many of surgical patients are managed in them.

### **3.5 POPULATION**

The study populations were all nurses working in surgical ward, operating theatre, emergency service and ICU. The total number of nurses was eighty seven (87).

The inclusion criteria were (a) nurses working in surgical ward, operating theatre, emergency service and intensive care units at University Teaching Hospital of Butare (CHUB) and (b) nurses working in mentioned service units for 6 months, (c) nurses willing to voluntarily participate in the study, (d) nurses having license to practice from Rwanda Nurses and Midwives Council, (e) nurses willing to sign the consent form for participating in the study. Exclusion criteria: all nurses not meeting above inclusion criteria.

### **3.6 SAMPLING**

#### **3.6.1 Sampling strategy**

In the research, the researcher must ensure that there is appropriate selection of an appropriate sample and that sample must be representative of the population under study. The research used a non-probability strategy and convenience sampling technics where the researcher met the nurses who were accessible and already in the service units.

The researcher approached every nurse who was available during the time of the study and eligible to participate and explained to them the aim of the study and then requested for their participation. Then the nurses who consent to participate read the instructions and then signed a consent form.

#### **3.6.2 Sample size**

Ajay et al (2014) reported that there can be use of entire population instead of sample size when the population is not large, therefore in this study the sample size was not calculated as the population is not large, and the entire study population of eighty seven (87 nurses) were used in this study. All nurses working in emergency, ICU, operating theatre and surgical ward were taken as sample. The total number of nurses available formed the sample size 87. Their breakdown according the service units was as follows:

- Surgical ward: 31;
- Operating theatre: 20;
- ICU: 17;
- Emergency: 19.

### **3.7 DATA COLLECTION**

#### **3.7.1 Data collection instrument**

Data was collected using self-administered questionnaire developed from the literature reviewed and some items were taken from the modified KAS tool developed by McCaffery and Ferrell in 1987 and the modified tool about barriers regarding optimal pain management developed by Van Hulle Vincent and Denyes in 1992 and some questions regarding demographic data of participants developed by the researcher and the supervisors.

The researcher provided assistance to the respondents while completing the questionnaires and ensured confidentiality and anonymity by provision of the box in data collection room where to put returned completed questionnaires. No names were mentioned in the questionnaire but every participant was given a code. The researcher was present in the room in order to respond to the questions posed by participants while answering questions. The introduction and summary of the study was mentioned on the first page of the questionnaire. Every returned questionnaire was checked by the researcher for its completeness and accuracy.

The original tool (NKAS) “Nurses’ Knowledge and Attitudes Survey Regarding Pain” was used to assess nurses and other health care professionals in health care settings and as a pre and post test evaluation tool for pain educational programs. The KAP tool used in this study was developed in 1987 by McCaffery and Ferrell and has been used extensively over the years in many countries from 1987 up today and has been revised over the years to reflect changes in pain management practice. The recent version has been revised in July 2014. It has been used USA, Canada, Australia, Asia, and Europe and also in some countries in Africa since its development.

While revising the KAP tool in July 2014, content validity has been ensured through review of questions from many pain experts. The content of the tool was obtained from the standards of pain management such as the American Pain Society, the World Health Organization, and the National Comprehensive Cancer Network Pain Guidelines. Construct validity has been established as the scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts have been compared.

Test-retest reliability was established ( $r > .80$ ) by repeated testing in a continuing education class of staff nurses ( $N=60$ ). Internal consistency reliability was established ( $\alpha > .70$ ) with items reflecting both knowledge and attitude domains. Validity is ensured when the tool measures what was supposed to measure and reliability of a research instrument is to which extent the instrument provides same information if used many times.

The tool regarding challenges to optimal pain management was developed by Van Hulle Vincent and Denyes in 1992 and was made of 13 questions regarding barriers to optimal pain management using the scale from 0 (not at all a barrier) to 10 (a major barrier) based on Agency for Health Care Policy and Research guidelines (AHCPR, 1992). Van Hulle Vincent and Denyes performed a pilot test and found the internal consistency of 0.86.

The modifications regarding these KAP and challenges tools have been done in order to ensure that only questions that are relevant and fit to the Rwandan context are the ones remaining in the current data collection tool. As those modified tools are valid; the reliability was ensured through pilot study that has been conducted at CHUB in gynecology and obstetric/post operative ward and ENT department among 10 nurses and midwives, and the result was Cronbach's Alpha that equals 0.66.

The tool in this study is made of seventy eight items in four sections:

- **Section one:** is made of forty two questions about knowledge and attitudes of nurses about pain management. Each participant will choose 'true' or 'false' for the every question.
- **Section two:** comprises fourteen multiple choice questions looking at knowledge, attitudes and practices of nurses about pain assessment and management. Respondent has to choose one correct answer among options provided.
- **Section three:** is made of one case study about knowledge, attitudes and practices of nurses about pain assessment and management. Respondent will choose one correct answer.

- **Section four:** consists of sixteen questions regarding challenges towards effective pain management. On a scale of 0 to 10, with 0 being “Not a challenge” and 10 being “A major challenge”. The respondent has to circle one number about how and where he/she rates the challenge.

The demographic questions have been developed by the researcher with guidance of reviewed literature and the supervisors. It included the level of education, age of participant, years of experience in nursing, gender, nursing unit of participant.

### **3.7.2 Data collection procedure**

The researcher met the respondents in their respective service units early in the morning before the morning staff meeting (between 7-8 am) then introduced himself to them and explained what the research was about. The respondents who were willing to participate in the study signed the consent form. After the consent forms were signed the researcher gave them the questionnaires and assisted them in answering the questions that were raised by respondents and also ensured every participant understand every question. Only 86 respondents were available to participate in the study because one from ICU was no longer working in study setting especially in ICU. Once they completed the questionnaires, they put them in the box provided and then the completed questionnaires were collected. The original completed questionnaires were kept in a secured and locked room.

### **3.8 DATA ANALYSIS**

When all 86 questionnaires were returned, SPSS version 23 was used for data entry. For data cleaning purposes the researcher entered data in a controlled manner. Percentages, frequencies, tables and graphs were used for statistical analysis of categorical variables and Chi-square was used in order to see correlations between socio-demographic characteristics of the nurses and their knowledge related to drugs used in pain management and their knowledge related to patients’ behaviors towards pain management; Chi-square was also used to test relationship between the knowledge of the nurses and their levels of practices.

### **3.9 ETHICAL CONSIDERATION**

Ethical clearances were obtained from the Research Ethical Committee at UR-CMHS-School of Nursing and Midwifery and approval from the CHUB Research and Ethics committee. The researcher obtained the certificate from National institute of Health Office of Extramural Research that certified that he has successfully completed the training course about “Protecting Human Research Participants”.

Before participating the participants signed the consent forms that were written in English or Kinyarwanda. The participants were explained that there are no immediate or future benefits of to participate in this study and even there is no compensation of the time lost. The participants were assured that their participation was voluntarily and whenever they wanted to withdraw from the study they can do so and were assured of no negative impact if they withdrew.

Confidentiality was assured before and after obtaining data or information. There were no names of the participant on the questionnaire. A code was given to every participant. The filled questionnaires were kept safe in a locked cupboard that was accessible to the researcher only. Username and password was required in order to access the research related data on the researcher’s computer.

### **3.10 DATA MANAGEMENT**

All data was managed on researcher’s personal laptop and security and protection of data was ensured through use of username and password. Data was analysed using the Statistical Package for the Social Sciences (SPSS, version 23). Percentages, proportions, tables and graphs were used for statistical analysis of categorical variables and Logistic regression was used in order to see correlations between variables.

The filled questionnaires were kept safe in a locked cupboard that was accessible to the researcher only. Username and password was required in order to access the research related data on the researcher’s computer.

### **3.11 DATA DISSEMINATION**

After obtaining the research findings, they were communicated and presented to UR-CMHS-SONM and to CHUB administration so that recommendations can be addressed for their implementations. The research will be published in medical and nursing journals

in Rwanda and the researcher and supervisors will find ways of publishing the research in international journals of medical and health sciences so that it may be accessible to anyone who wants to consult it.

### **3.12 STUDY LIMITATIONS**

This study used a cross-sectional research design which is appropriate while exploring the concepts mentioned in this research. The fact that the population was studied at a single point in time and not studied over time, this may implicate the research findings because changes may occur over time as a result of things keep on changing.

The study sample was small and limited only to nurses working in emergency, surgical ward, ICU and operating theatre, and didn't involve other health care professionals like anesthetists and physicians while they are much involved in management of surgical patients or postoperative pain management, so it may be difficult to generalize findings. And the study was also conducted in one referral hospital in Rwanda, therefore generalizing the findings to all nurses working in Rwanda would be improper because it is quite possible that those nurses working at health centers and district hospitals might have even lesser knowledge, negative attitudes and poor practices regarding pain management.

The other limitation of the study is that the researcher was nurse leader in research setting; therefore participants may not give the realy information even if they are given the explanation because they have suspiscion of audit and risk of reporting to the authorities of the institution for follow up. Surgical patients present often acute pain; therefore the areas where the management of chronic pain occurs might not be covered in this study. Time, expenditure and resources proved to be the limitations because of conducting the research while having other responsibilities such as attending classes for lectures three days a week and also being present at work other remaining days of the week.

The results of the present study provides a good description of the knowledge, attitudes, practices and challenges faced by nurses working in surgical ward, emergency, ICU and operating theatre in pain management among surgical patients in one referral hospital in Rwanda and forms the basis for future researches in pain management domain among nurses working in Rwandan health facilities.

## **CHAPTER 4. RESULTS PRESENTATION AND INTERPRETATION**

### **4.1. INTRODUCTION TO CHAPTER FOUR**

The purpose of this current chapter is the research findings presentation and interpretation. It starts by socio-demographic characteristics of the participants; their knowledge, attitudes and practices regarding pain management and challenges they face in pain management. It also shows the relationship between nurses' socio-demographic characteristics and their knowledge related to drugs used in pain management and their knowledge related to patients' behaviors towards pain management. It highlights also the relationship between the knowledge of the nurses and their levels of practices. Data were collected from 86 nurses that represent the response rate of 98.85% because the sample size was 87 nurses. One nurse from ICU missed because he was no longer working in the study setting especially in ICU during the period of data collection.

### **4.2 PRESENTATION OF THE FINDINGS AGAINST THE OBJECTIVES**

The table 1 informs us that majority of participants 34 (39.5%) are aged between 31-35 years old; 22.1% are ranged between 26-30 years and 18.6% are aged between 36-40 years. This means the majority of participants are aged between 26-40 years old. The genders represented in this sample are almost equal as 45 (52.3%) are female and 47.7% are male.

The table 1 shows also that the majority of participants 72 (83.7%, N=86) have advanced diploma and 16.3% only have bachelors degree. The table shows that 61(70.9%) have attended in service training about pain management and 75(87.2%) did self-learning about pain management. Majority of participants 37 (43%) have between 3-10 years of experience in nursing and they are at intermediate level; 35(40.7%) are novice in nursing, and only 14(12.3%) are seniors in nursing profession.

The distribution of participants by the services where they work is as follow: 31(36%) are from surgical ward; 20(23.3%) are from operating theatre; 16(18.6%) are from ICU and 19(22.1%) are from emergency. This is justified by the fact that surgical patients are mainly admitted at emergency and managed in surgical ward and my area of my study involved only surgical patients.

**Table 1. Distribution of socio-demographic characteristics of participants**

<b>Characteristics</b>	<b>n</b>	<b>Percentage (%)</b>	
<b>Age</b>			
20-25	4	4.7	
26-30	19	22.1	
31-35	34	39.5	
36-40	16	18.6	
41-45	10	11.6	
46 and more	3	3.5	
<b>Total</b>	<b>86</b>	<b>100.0</b>	
<b>Gender</b>			
Male	41	47.7	
Female	45	52.3	
<b>Total</b>	<b>86</b>	<b>100</b>	
<b>Level of education and training</b>			
Advanced diploma	72	83.7	
Bachelor's Degree	14	16.28	
<b>Total</b>	<b>86</b>	<b>100</b>	
	<b>YES</b>	<b>NO</b>	
In service training about pain management	61	70.9	25
Self-learning about pain management	75	87.2	11
<b>Experiences in nursing</b>			
1-2 (Novice)	35	40.7	
3-10 (Intermediate)	37	43.0	
Above 11 (Senior)	14	12.3	
<b>Units of work</b>			
Surgical ward	31	36.0	
Operating theatre	20	23.0	
ICU	16	19	
Emergency	19	22	
<b>Total</b>	<b>86</b>	<b>100</b>	

The Table 2 shows that all the nurses had experiences with pain management among patients and 76 nurses (88.4%) reported that they have usable pain measuring tool in their units. It also shows that 72(83.7%) applied the knowledge they got from self-learning about pain management. 81(94.2%) had personal experiences with pain and among them 64(79%) experienced acute pain while 17(21%) experienced chronic pain.

The table 2 also informs us that 78(90.7%) reported that the personal experiences have affected the way they manage patients' pain.

**Table 2 Distribution of participants' personal experiences related to pain and pain management**

Questions items	YES		NO	
	N	%	N	%
Nurse's experiences of pain management in patients	86	100	0	0
Availability of pain measurement instrument in the units	76	88.4	10	11.6
Applying knowledge learnt from self-learning about pain management in patient's management	72	83.7	14	16.3
Nurse's personal experiences with pain	81	94.2	5	5.8
Personal experiences with pain that affect the ways nurses managed patient's pain	78	90.7	8	9.3
Acute pain experienced by nurses	64	79	17	21
Chronic pain experienced by nurses	17	21	69	79

The table 3 informs us that participants have scored 80% and above in only six (6) questions. They scored between 50% and 79% in eleven (11) questions and they scored less than 50% in ten (10) questions. The highest score was 89.5%. The table 3 also shows that 68(79.1%) knew that respiratory depression can occur in patients receiving opioids, and 77(89.5%) knew that sedation assessment must be done during opioid pain management because of excessive sedation that precedes respiratory depression. Only 27(31.4%) knew that obstructive sleep apnea is the risk factor of opioid induced respiratory depression. It shows that 61(70.9%) knew that after the initial dose of opioid is given, other doses will be adjusted according to patient's response. It also shows that 71(82.6%) knew the meaning of opioid addiction, and only 19(22.1%) knew the manifestations of physical dependence when there is abrupt discontinuation of an opioid. It shows that 75(87.2%) knew that then patient will request increased doses of pain medications because he/she is experiencing increased pain. It also shows that only 38(44.2%) knew that intravenous route is the recommended route of opioid for patient with severe pain, 77(89.5%) knew that morphine is drug of choice for treatment of

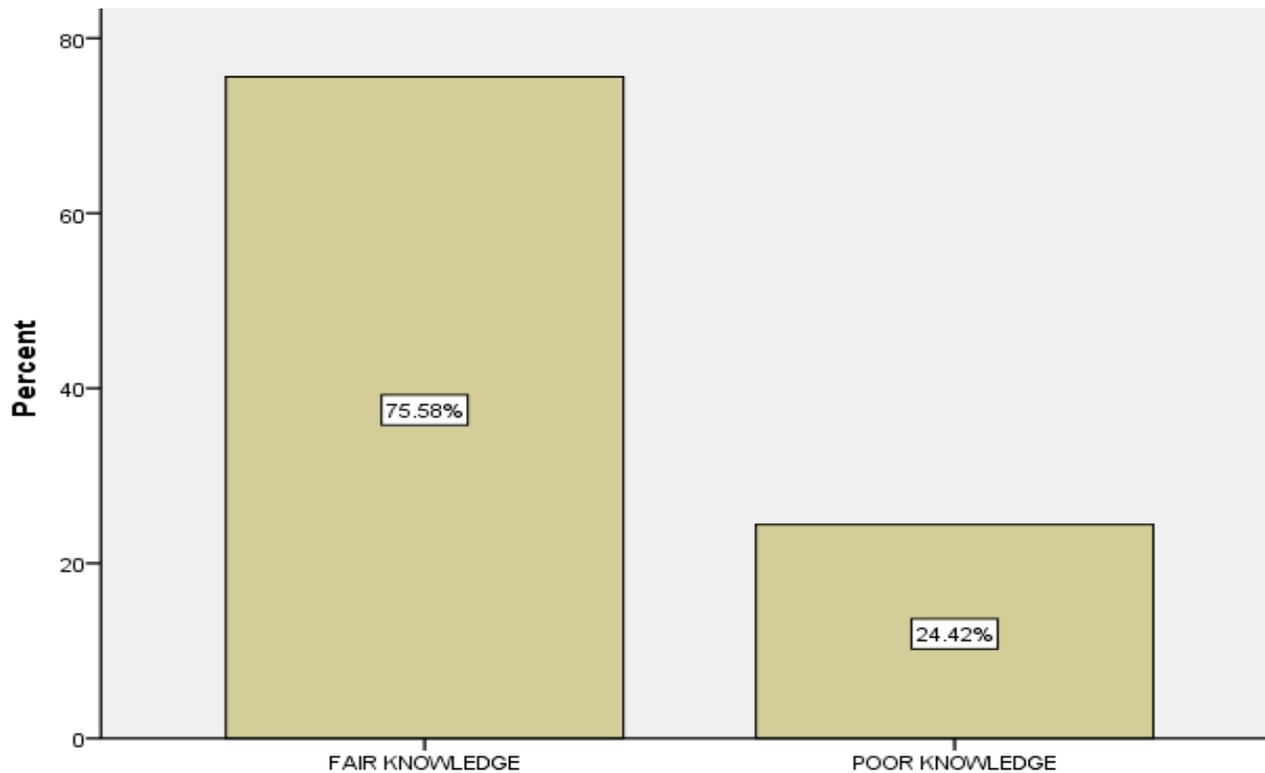
severe pain of sudden onsets as trauma, post-operative, only 43(50%) knew time to peak effect of morphine given IV and 5(5.8%) knew the time to peak effect for morphine given orally.

**Table 3. Distribution of knowledge score of participants related to drugs used in pain management**

<b>A. Knowledge of nurses related to Opioids</b>	<b>Correct</b>		<b>Incorrect</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Respiratory depression rarely occurs in patients who are receiving opioids <b>(T)</b>	68	79.1	18	20.9
Elderly patients cannot tolerate opioids for pain relief <b>(F)</b>	47	54.7	39	45.3
Opioids should not be used in patients with a history of substance abuse <b>(F)</b>	54	62.8	32	37.2
Patients should be encouraged to endure as much pain as possible before using an opioid. <b>(F)</b>	13	15.1	73	84.9
If the source of the patients pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain <b>(F)</b>	39	45.3	47	54.7
The usual duration of action of IV Morphine Sulfate is 6-8 hours <b>(T)</b>	44	51.2	42	48.8
After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response. <b>(T)</b>	61	70.9	25	29.1
Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving. <b>(T)</b>	71	82.6	15	17.4
Following abrupt discontinuation of an opioid, physical dependence is manifested by the following: <b>(Sweating, yawning, Diarrhea and agitation)</b>	19	22.1	67	77.9
The statement that is true regarding opioid induced respiratory depression: <b>(Obstructive sleep apnea is an important risk factor).</b>	27	31.4	59	68.6
The time to peak effect for morphine given IV is <b>(15 min)</b>	43	50	43	50.0
The time to peak effect for morphine given orally is <b>(1-2 hours)</b>	5	5.8	81	94.2
The recommended route administration of opioid analgesics for patients with severe pain of sudden onset such as trauma or postoperative pain is <b>(Intravenous)</b>	38	44.2	48	55.8
Analgesic medication that is considered the drug of choice for treatment of severe pain of sudden onset, e.g., trauma or postoperative pain: <b>(Morphine)</b>	77	89.5	9	10.5
Children/adolescents in recovery from past substance abuse should not be given opioids for pain because they are at high risk for reoccurrence of addiction. <b>(F)</b>	53	61.6	33	38.4
Beyond a certain dosage of strong opioids (e.g., morphine), increases in dosage will NOT increase pain relief <b>(F)</b>	76	88.4	10	11.6
Children generally can tolerate strong medications such as opioids for pain <b>(T)</b>	26	30.2	60	69.8

<b>B. Knowledge of nurses related to other pain medications</b>	<b>Correct</b>		<b>Incorrect</b>	
	<b>n</b>	<b>%</b>	<b>N</b>	<b>%</b>
Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose. (F)	61	70.9	25	29.1
Benzodiazepines are not effective pain relievers and are rarely recommended as part of an analgesic regiment.(T)	58	67.4	28	32.6
The term equianalgesia means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.(T)	73	84.9	13	15.1
Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression. (T)	77	89.5	9	10.5
Acetaminophen and non-steroidal anti-inflammatory agents are effective analgesics for children’s postoperative pain. (T)	35	40.7	51	59.3
The most likely reason a patient with pain would request increased doses of pain medication: (The patient is experiencing increased pain)	75	87.2	11	12.8
Analgesics for post-operative pain should initially be given: (Around the clock on a fixed schedule)	43	50	43	50.0

The figure 2 was obtained after computing all the mean scores related to knowledge of participants regarding drugs used in pain management. The statements variables regarding knowledge of participants regarding drugs used in pain management were 27 and the highest and lowest means were as follows: 46; 37. The mean scores have then been categorized into 46-54 (scored 80% and above) as Good knowledge; 41-45 (scored between 50%-79%) as Fair knowledge; and below 41 (below 50%) as Poor knowledge. The figure 2 illustrates that no group had Good knowledge regarding drugs used in pain management, and 75.58% had fair knowledge yet 24.42% had poor knowledge.



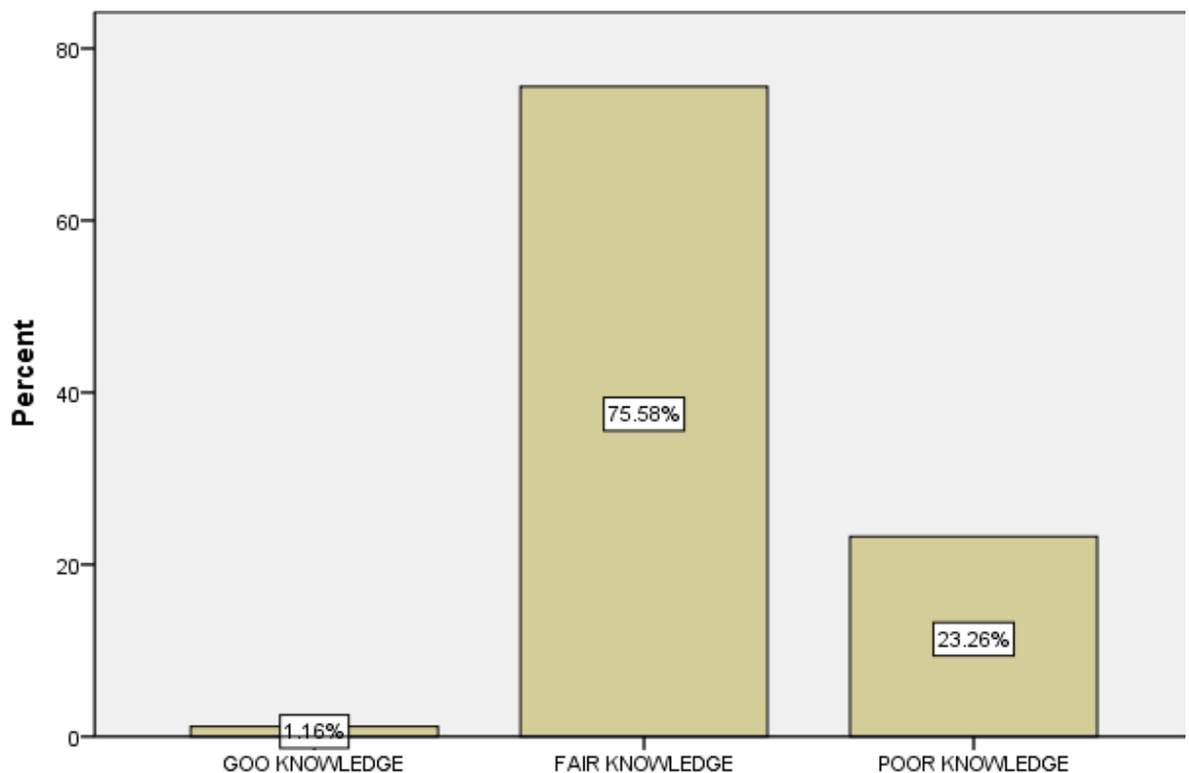
**Figure 2 Levels of knowledge of participants related to drugs used in pain management**

The table 4 shows that only two people got above 80% for only two questions. It also highlights that 41(47.7%) knew that patients who are distracted from pain may not have severe pain, and 11(12.8) reported that patients may sleep in spite of pain. It shows that majority of respondents had poor knowledge regarding children’s pain management as 23 (26.7%) think that 11 years old can’t report pain, therefore clinicians must rely on parents’ assessment; only 11(12.8%) knew that children may sleep despite of severe pain. Only 35 (40.7) are aware of the most accurate judge of the patient’s pain and 7(8.1%) only knew that different people experiencing comparable stimuli will experience same pain intensity. It also shows that 69 (80.2%) knew and thought that vital signs are reliable indicators of patient’s pain intensity, and 62 (72.1%) thought that patients must be individually assessed while doing pain assessment in order to determine cultural influences.

**Table 4 Distribution of knowledge scores of participants related to patients' behaviors towards pain management**

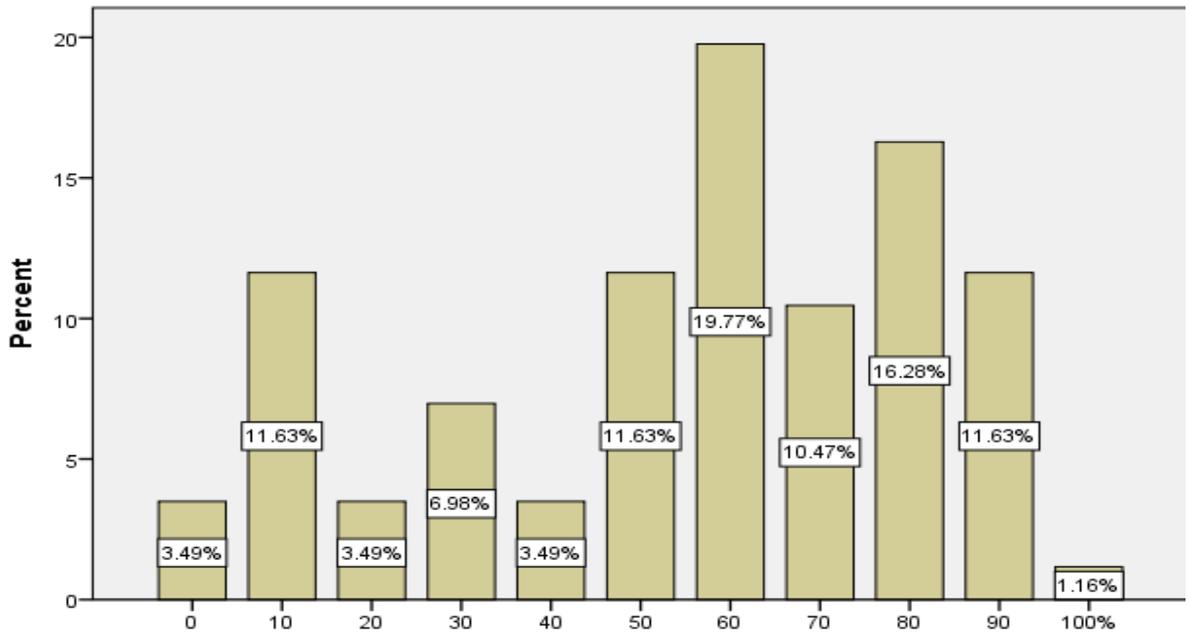
Questions items	Correct		Incorrect	
	N	%	n	%
Patients who can be distracted from pain usually do not have severe pain (F)	45	52.3	41	47.7
Patients may sleep in spite of severe pain (T)	11	12.8	75	87.2
The patient in pain should be advised to use non- pharmacological means alone rather than use pain medications (F)	47	54.7	39	45.3
Pain is part of ageing process (F)	79	91.9	7	8.1
Vital signs are always reliable indicators of the intensity of a patient's pain. (F)	17	19.8	69	80.2
Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences. (F)	9	10.5	77	89.5
Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parents' assessment of the children pain intensity. (F)	23	26.7	63	73.3
Patients spiritual beliefs may lead them to think pain and suffering are necessary.(T)	51	59.3	35	40.7
If the child can be distracted from his or her pain this usually means that the child is NOT experiencing severe pain.(F)	46	53.5	40	46.5
Children may sleep in spite of severe pain (T)	11	12.8	75	87.2
Different patients experiencing comparable stimuli will experience the same intensity of pain.(F)	79	91.9	7	8.1
Non-drug interventions (e.g., heat, music, imagery, etc.) are very effective for mild-moderate pain control but are rarely helpful for more severe pain. (F)	10	11.6	76	88.4
The patient should be advised to use non-drug techniques along with pain medications. (T)	60	69.8	26	30.2
Heat or cold is only effective if applied to the painful area. (T)	59	68.6	27	31.4
The most accurate judge of the intensity of the patients pain is (Patient)	35	40.7	51	59.3
The best approach for cultural considerations in caring for patients in pain: (Patients should be individually assessed to determine cultural influences.)	62	72.1	24	27.9

The figure 3 was obtained after computing all the mean scores related to knowledge of participants regarding patients' behaviors towards pain management. The statements variables regarding knowledge of participants regarding patients' behaviors towards pain management were 17 and the highest and lowest means were as follows: 23; 30. The means have then been categorized into 31-34 (scored 80% and above) as Good knowledge; 26-30 (scored between 50%-79%) as Fair knowledge; and below 26(below 50%) as Poor knowledge. The figure shows that only 1.16% had good knowledge regarding patients' behaviors towards pain management, and 75.58% had fair knowledge yet 23.26% had poor knowledge.



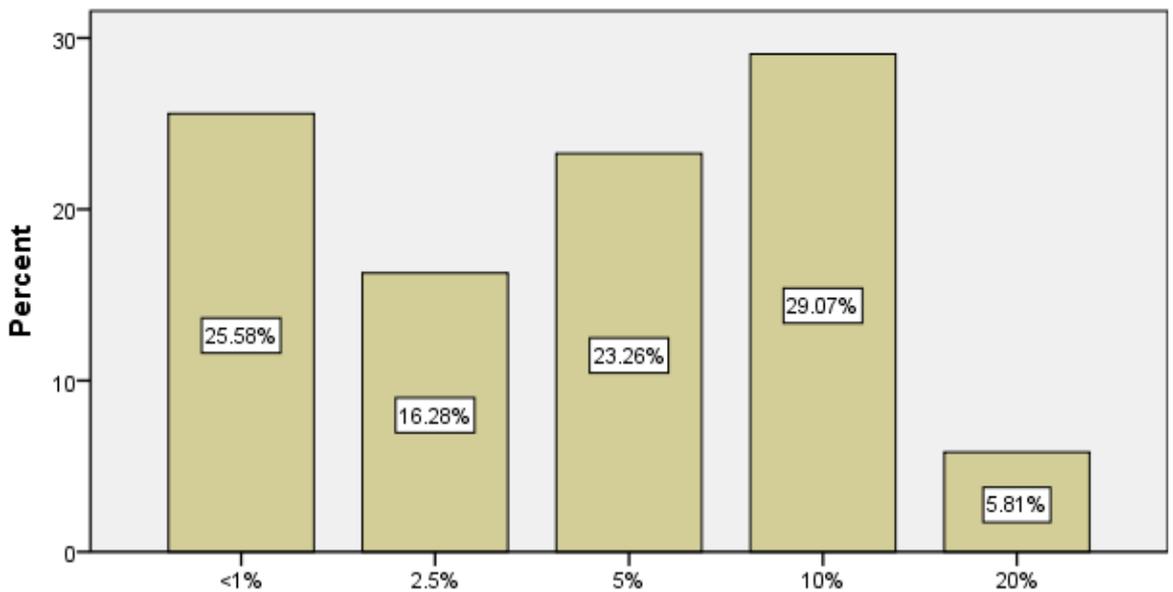
**Figure 3 Levels of knowledge of participants related to patient's behaviors towards pain management.**

The figure 4 shows that 17(19.8%) thought that patients over report pain at 60% and only 3(3.5%) thought that their patients don't over report their pain. 11.63% thought that 90% of their patients over report pain., and only 3.49% of respondents thought that their patients don't over report their pain.



**Figure 4 Attitudes of participants towards pain over report by patients.**

The figure 5 shows that 5.81% of participants thought that 20% of their patients being treated by opioid analgesics will develop addiction and 29.07% thought that only 10% will develop the addiction. It also shows that 25.58% of participants thought that only less than 1% of their patients being treated by opioids will develop addiction.



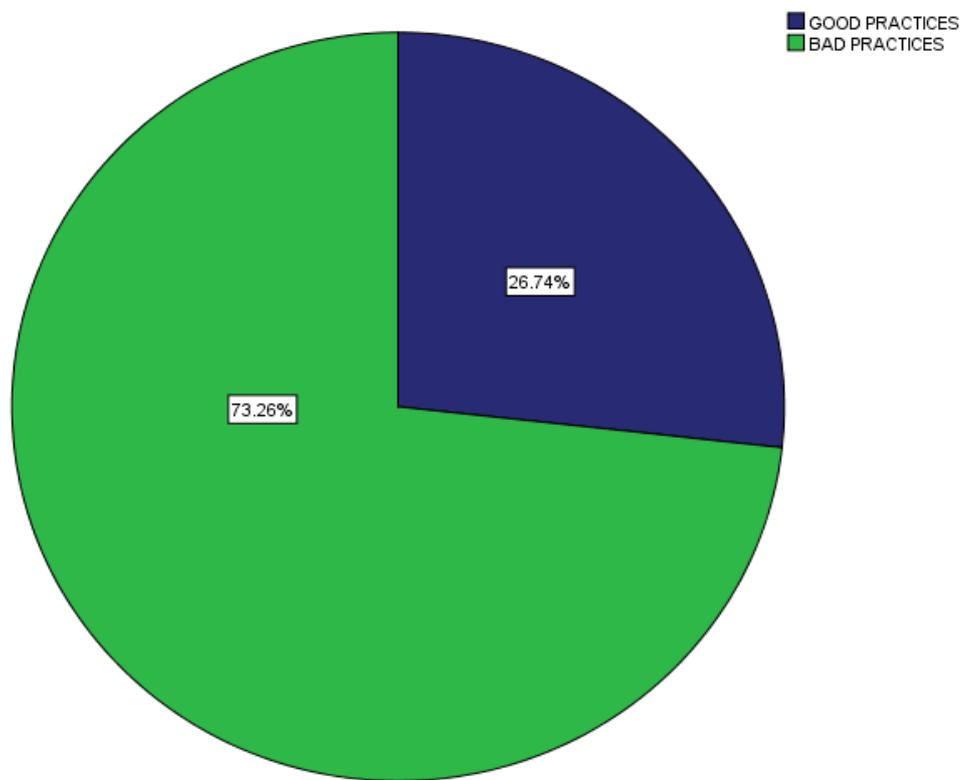
**Figure 5 Attitudes of participants towards opioid addiction among patients on opioid medications.**

The table 5 informs us that majority of participants have bad and poor practices regarding pain management as; only 15(17.4%) knew how to document pain assessment findings and only 8(9.3%) knew the correct intervention towards those findings. It shows only 63(73.3%) knew the WHO pain treatment ladder and 34(39.5%) thought that placebo can be useful to determine whether the patient’s pain is real or not. It shows only 69(80.2%) knew the recommended pain treatment guideline which is to combine NSAID with opioid.

**Table 5 Pain management practices of participants towards pain management for surgical patients**

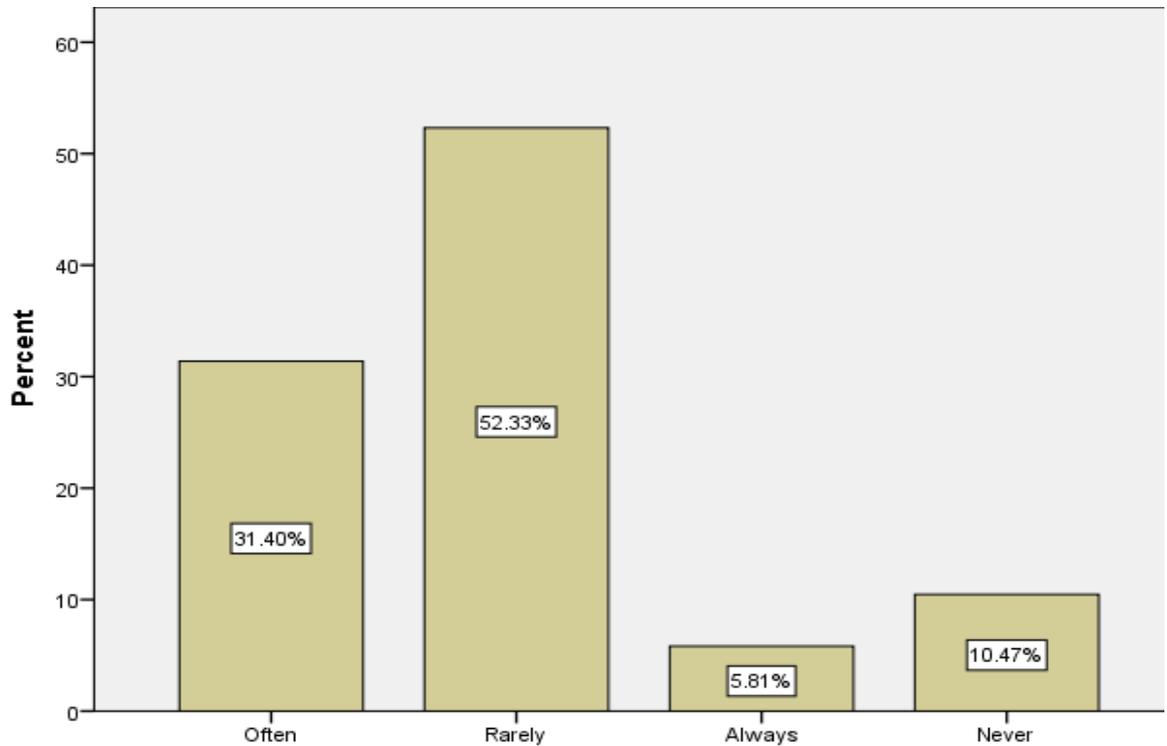
Questions items	Correct		Incorrect	
	n	%	N	%
Combining analgesics (e.g., combining an NSAID with an opioid) that work by different mechanisms may result in better pain control with fewer side effects than using a single analgesic agent (T)	69	80.2	17	19.8
Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real. (F)	34	39.5	52	60.5
The World Health Organization (WHO) pain ladder suggests combining classes of drugs (e.g., combining an opioid with a non-steroidal agent) rather than using single analgesic agents.(T)	63	73.3	23	26.7
On the patients record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain.(8)	15	17.4	71	82.6
Check the action you will take at this time.(Administer morphine 2mg IV now)	8	9.3	78	90.7

This figure 6 was obtained after computing all the mean scores of participants' practices towards pain management. The statements variables regarding participants' practices towards pain management were 6 and the highest and lowest means were as follows: 11; 7. Mean scores have then been categorized into 10-12 (scored 70% and above) as good practices; less than 10 (scored below 70%) as bad practices. The figure shows that majority (73.26%) had poor or bad practices towards pain management and only 26.74% had good practices regarding pain management among their patients.



**Figure 6 Categories of participants' practices towards pain management**

The figure 7 shows that use of pain measurement tool in pain assessment is at low level because only 5.81% use it; 52.33% rarely use it; 31.40% use it often and 10.47% never use it during their daily nursing practices.



**Figure 7 Use of pain measurement instrument by participants in their units**

The table 6 shows that several challenges have been identified as contributing to ineffective pain management like inadequate knowledge about pain assessment and management, ability to assess the pain, fear of other side effects and addiction. It also shows that pain management is given low priority among health care professionals. Respondents also reported lack of pain management in the curriculum during their studies and also shortage of staff that leads to work overload. There is also lack of equipments for patients' monitoring which leads to fear of administering opioids as pain medications.

**Table 6 Challenges towards pain management**

Challenge Questions	Not challenge		Minor challenge		Major challenge	
	N	%	N	%	n	%
Inadequate knowledge or information gap about pain assessment and management	30	34.9	20	23.3	36	41.9
My ability to assess pain	33	38.4	21	24.4	32	37.2
My concern of a patient becoming addicted	39	45.3	18	20.9	29	33.7
My concern about side effects of pain medications (other than addiction)	27	31.4	17	19.8	42	48.8
My concern about patient becoming tolerant to analgesics	31	36.0	21	24.4	34	39.5
Low priority given to pain management by medical staff	22	25.6	15	17.4	49	57.0
Low priority given to pain management by nursing staff	30	34.9	22	25.6	34	39.5
Inadequate or insufficient physician medication orders	23	26.7	23	26.7	40	46.5
Patients reluctance to report pain	33	38.4	14	16.3	39	45.3
Patients reluctance to take pain medications	46	53.5	9	10.5	31	36.0
Lack of courses related to pain in the under graduate classes	28	32.6	8	9.3	50	58.1
Lack of continuing training	17	19.8	12	14.0	57	66.3
Work overload and shortage of nursing staff	14	16.3	16	18.6	56	65.1
Role confusion	12	14.0	29	33.7	45	52.3

The table 7 shows that there is no relationship between socio-demographic characteristics of the participants and their knowledge related to drugs used in pain management and also their knowledge related to patient's behaviors towards pain management. It only shows us that the level of education had impact on knowledge of participants related to patient's behaviors towards pain management. This means that the more the participants increase their levels of education, the more they gain knowledge about patients' behaviors towards pain management. Further studies need to be conducted to find out other factors that contribute to the relationship between socio-demographic characteristics of participants and their knowledge related to pain management.

**Table 7 Relationships between participants' socio-demographic characteristics and their knowledge related to drugs used in pain management and their knowledge related to patient's behaviors towards pain management**

	Outcome 1				Outcome 2				
	Cat. B N (%)	Cat. C N (%)	Chi- square	P- value	Cat. A N (%)	Cat. B N (%)	Cat. C N (%)	Chi- square	P- value
<b>Age</b>			10.278	.045				10.349	.577
			(Fischer's Exact Test)					(Fischer's Exact Test)	
20-25 years	4 (100)	0 (0)			0 (0)	4 (100)	0 (0)		
26-30 years	10 (52.6)	9 (47.4)			0 (0)	14 (73.7)	5 (26.3)		
31-35 years	24 (70.6)	10 (29.4)			1 (2.9)	24 (70.6)	9 (26.5)		
36-40 years	15 (93.8)	1 (6.3)			0 (0)	13 (81.3)	3 (18.8)		
41-45 years	9 (90)	1 (10)			0 (0)	9 (90)	1 (10)		
46 years and above	3 (100)	0 (0)			0 (0)	1 (33.3)	2 (66.7)		
<b>Gender</b>			.258a	.627				.918	1.0
								(Fischer's Exact Test)	
Male	32 (78)	9 (22)			0 (0)	31 (75.6)	10 (24.4)		
Female	33 (73.3)	12 (26.7)			1 (2.2)	34 (75.6)	10 (22.2)		
<b>Level of education</b>			.930a	.502				8.838	.008
								(Fischer's Exact Test)	
Advanced diploma	53 (73.6)	19 (26.4)			0 (0)	52 (72.2)	20 (27.8)		
Bachelor's degree	12 (85.7)	2 (14.3)			1 (7.1)	13 (92.9)	0 (0)		
<b>Experiences in nursing</b>			5.880	.176				6.221	.825
			(Fischer's Exact Test)					(Fischer's Exact Test)	
1-2 years	14 (74.5)	9 (25.5)			0 (0)	9 (80)	3 (20)		
3-10 years	36 (76.9)	15 (23.5)			1 (2.7)	25 (67.6)	11 (29.7)		
Above 11 years	8 (57.1)	4 (42.9)			1 (15.3)	31 (71.4)	6 (13.3)		
<b>Units of work</b>			4.078	.251				9.455	.083
			(Fischer's Exact Test)					(Fischer's Exact Test)	
Surgical ward	21 (67.7)	10 (32.3)			1 (3.2)	23 (74.2)	7 (22.6)		
Operating theatre	18 (90)	2 (10)			0 (0)	15 (75)	5 (25)		
ICU	13 (81.3)	3 (18.8)			0 (0)	9 (56.3)	7 (43.8)		
Emergency	13 (68.4)	6 (31.6)			0 (0)	18 (94.7)	1 (5.3)		

N=86; Outcome 1: Knowledge of participants related to drugs used in pain management; Outcome 2: Knowledge of participants related to patient's behaviors towards pain management.  
Cat. A: Good knowledge; Cat. B: Fair knowledge; Cat. C: Poor knowledge.  
p<0.05.

The table 8 shows that there is no relationship between knowledge of participants related to drugs used in pain management, their knowledge related to patient's behaviors towards pain management and their practices.

**Table 8 Relationship between knowledge of participants related to drugs used in pain management, their knowledge related to patient's behaviors towards pain management and their levels of practices**

	Outcome 3		Chi-square	P-value
	Good practices	Poor practices		
	N (%)	N (%)		
Knowledge of nurses related to drugs used in pain management			.122	.786
Fair knowledge	18 (27.7)	47 (72.3)		
Poor Knowledge	5 (23.8)	16 (76.2)		
Knowledge of nurses related to patient's behaviors towards pain management			4.294 Fisher's Exact test	.098
Good knowledge	0 (0)	1 (100)		
Fair knowledge	21 (32.3)	44 (67.7)		
Poor knowledge	2 (10)	18 (90)		
N=86; Outcome 3: Practices of participants towards pain management among surgical patients; p<0.05				

## **CHAPTER 5. DISCUSSION OF RESULTS**

### **5.1 INTRODUCTION TO CHAPTER FIVE**

This chapter five is highlighting the research findings and their discussions comparing them with other studies done regarding pain management.

### **5.2 DISCUSSION OF THE RESEARCH FINDINGS**

The research found that majority of participants 34 (39.5%) are aged between 31-35 years old; 22.1% are ranged between 26-30 years and 18.6% are aged between 36-40 years. This means the majority of respondents are aged between 26-40 years old. Rwanda is young country but from other countries, 18-35 years are considered as young, 36-55 middle age, above 55 old. The genders represented in this sample are almost equal as 45 (52.3%) are female and 47.7% are male. This small difference may be due to the statistics that are available at CHUB, show that nursing profession is dominated by females. These findings are similar to the study done by Ufashingabire et al., (2016) who found that the most respondents in their study were female and very young.

The majority of participants 72 (83.7%, N=86) have advanced diploma and 16.3% only have bachelors degree; this is due to the fact that Rwanda has incorporated the Bachelors degree in general nursing recently, where it started in former KHI in 2006. This had an impact on ineffective pain management because they reported that it was not included in their curriculums during their undergraduates' studies.

The majority 61(70.9%) have attended in service training about pain management and 75(87.2%) did self-learning about pain management. This is because CHUB is in process of training all health care professionals in pain management and all staffs are involved in accreditation process in which there is a section of pain management. Majority of participants 37 (43%) have between 3-10 years of experience in nursing and they are at intermediate level; 35(40.7%) are novice in nursing, and only 14(12.3%) are seniors in nursing profession.

This study found that all the nurses have got experiences about pain management among patients and 76 nurses (88.4%) reported that they have usable pain measuring tool in their units. Materials to guide staff regarding pain management are almost in every ward and the staff trained regarding CHUB pain management program must provide feedback

to the others whom they met in their respective services. It also found that 72(83.7%) applied the knowledge they got from self-learning about pain management. 81(94.2%) had personal experiences with pain and 78(90.7%) reported that the personal experiences have affected the way they manage patients' pain. This shows that personal experiences about pain can affect someone's practices or the way he/she manages patient's pain.

It is believed that if health care professionals are equipped with adequate and sufficient knowledge and positive attitudes, they can provide optimal quality of health care to their patients because both knowledge and attitudes affect the nurses' ability to effectively manage pain. The criterion for minimally acceptable percentage score for good knowledge according to the Nurses Knowledge and Attitudes Survey Regarding Pain Tool (NKAS) is 80% (Miller, 2012). However the study found that participants have poor knowledge regarding drugs used in pain management and patients' behaviors towards pain management as they scored 80% and above in only six (6) questions only in pharmacological part and two (2) in patients' behaviors part. Among categorized variables, no group of participants has been found having good knowledge related to drugs used in pain management, and only 1.16% had good knowledge regarding patients' behaviors towards pain management. All these findings show the knowledge deficits among the participants/nurses which lead to poor practices regarding pain management. The study also found that pain assessment practices are poor yet this is critical component in pain management.

The study found that participants/nurses had poor knowledge regarding pharmacology or drugs used in pain management. These findings are similar to Yosef (2015) as he found that pharmacological knowledge of anesthetists regarding post operative pain management in Ethiopia were poor yet being knowledgeable about pharmacology of opioid analgesics was prerequisite for all health care professionals in the effective pain management.

The study found that the nurses have bad and negative attitudes towards pain management and their patients because majority of them thought that their patients over report their pain and also patients being treated with opioid are at high risk of developing addiction. This shows that the patients are undertreated and suffer for their pain because of those misconceptions of the nurses that patients over report their pain and fearing of

opioid addiction. This is supported by Yosef (2015) who found that respondents preferred for their patients to suffer pain than causing opioid analgesia related problems. These negative attitudes may be due to lack of motivation like low salary, lack of knowledge, role confusion as they have been mentioned as major barriers to effective pain management by majority of respondents. These findings are similar to those from the study done in Ethiopia by Kassa et al., (2015). The study found that the participants had knowledge deficits and bad attitudinal beliefs which lead to ineffective pain management among surgical patients. It is supported by study done by Craig (2014) and Basak, Wongchan Petpichetchian, & Kitrungrrote (2010) that found poor knowledge and bad attitudes of nurses towards pain management. The results are also supported by Shahriary et al., (2015) who found that oncology nurses lacked sufficient knowledge regarding pain management among cancer pain. The study was also supported by study done in Rwanda by Ufashingabire et al., (2016) who found that nurses working in ICU had poor knowledge and bad attitudes towards pain assessment and management.

Pain assessment is critical component in pain management and improvement of pain assessment requires the health care professionals to acknowledge, document, value and have faith in patients' report; and in some countries like Sweden, laws are available regarding pain management documentation (Yosef, 2015; Masood et al., 2009). However the study found that the use of pain measurement tools is at low level (5.81% use it; 52.33% rarely use it; 31.40% use it often and 10.47% never use it during their daily nursing practices) and only 35(40.7%) knew that the accurate judge of patient is him/herself; which means that pain assessment is not included in their routine activities, and there are no policies and guidelines guiding pain management in our hospital, which is the biggest challenge for effective pain management. It is also supported by study done by Yava et al. (2013) who found low incidence regarding use of pain assessment tool in the study done in Turkey.

The study has found that majority (73.26%) of participants/nurses has poor and bad practices towards pain management. This is due to deficits in knowledge and negative or bad attitudes towards pain management because you can't practice what you don't know and best clinical cases management depend on the way people transfer their theoretical knowledge into practices; therefore the knowledge deficiencies and attitudinal beliefs

regarding pain management can have impact to effective and optimal care we give to our patients who are having pain. It may also be due to poor pain assessment practices, lack of clear policies and guidelines regarding pain management and lack of pain management principles in the curriculum. These knowledge deficiencies, bad attitudes and poor practices regarding pain management may also be justified by the fact that they reported many barriers like lack of knowledge regarding pain management principles, lack of clear policies and monitoring of their implementation about pain management in the hospital, not being able to recognize and manage complications related to pain medications, shortage of staff, lack of equipments that help in monitoring patients before and after provision of pain medications. The study findings differ from the study done by Ojong, Ojong-alasia, & Nlumanze (2014) that found nurses had high level of pain management among surgical patients in Nigeria, and that high level was influenced by ability to assess pain.

The study found that several challenges have been identified as contributing to ineffective pain management like inadequate knowledge about pain assessment and management, ability to assess the pain, fear of other side effects and addiction. It also shows that pain management is given low priority among health care professionals. Respondents also reported lack of pain management in the curriculum during their studies and also shortage of staff that leads to work overload. There is also lack of equipments for patients' monitoring which leads to fear of administering opioids as pain medications. These findings are similar to the study done by Shahriary et al., (2015), and Yosef (2015) who found the inadequate assessment, and postoperative pain that was not being given priority by healthcare professionals, as major challenges to effective pain management. Shahriary et al., (2015) found that the knowledge of nurses about pain management was far from optimal and several challenges have been identified like lack of knowledge of nurses about opioid administration and monitoring, lack of time, work overload, and reluctance of clinicians to prescribe analgesia.

The study found that there is no relationship between gender (p-value: .627), level of education (p-value: .502), units of work (p-value: .251), years of experiences (p-value: .176) of the participants and their knowledge related to drugs used in pain management. The study found that there were relationship between the age of the participants (p-value:

.045) and their knowledge related to drugs used in pain management. It also revealed that only the level of education (p-value: .008) had impact on knowledge of participants/nurses related to patient's behaviors towards pain management. This means that the more participants/nurses increase their levels of education, the more they gain knowledge about patients' behaviors towards pain management and these findings inform us that knowledge increase through additional academic education trainings. These findings are supported by Ufashingabire et al., (2016). Further studies need to be conducted to find out other factors that contribute to the relationship between other socio-demographic characteristics of participants/nurses and their knowledge related to pain management.

The study found that there is no relationship between knowledge of participants/nurses related to drugs used in pain management, their knowledge related to patient's behaviors towards pain management and their practices (p-values: .786; .098). Therefore further studies are needed to investigate other factors that may be present so that knowledge and attitudes of the participants/nurses are translated into practices among nurses.

## **CHAPTER 6. CONCLUSION AND RECOMMENDATIONS**

### **6.1 INTRODUCTION TO CHAPTER SIX**

This chapter six is talking about the conclusion regarding the current research and also providing the recommendations in regard the findings from this study.

### **6.2 CONCLUSION**

The present study was aiming at describing the knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients at one referral hospital in Rwanda. The overall results show that participants/nurses have inadequate knowledge related to drugs used in pain management and poor knowledge related to patient's behaviors towards pain management. The results also show that the participants/nurses have poor and negative attitudes regarding patients experiencing pain and pain management principles. The study found that the practices of participants/nurses related to pain assessment and pain management are at low level. Ultimately these knowledge deficits, poor attitudinal beliefs and poor practices found in many key areas of pain management have impact on the provision of effective pain management and optimal care given to surgical patients. Several challenges have been identified in this current research by participants/nurses contributing to ineffective pain management. Among those challenges, there is inadequate knowledge about pain assessment and management, ability to assess the pain, fear of other side effects and addiction, pain management is given low priority among health care professionals, lack of pain management in the curriculum during their studies, shortage of staff that leads to work overload and lack of equipments for patients' monitoring which leads to fear of administering opioids as pain medications. The age was found to be in correlation with the knowledge of the nurses related to drugs used in pain management and the level of education was seen as contributing factor to nurses' knowledge related to patients' behaviors towards pain management.

### **6.3 RECOMMENDATIONS**

The study found that nurses caring for surgical patients have gap in knowledge, poor attitudes and poor practices towards pain assessment and management. Several challenges have been highlighted in the current study contributing to ineffective pain management. Therefore, guidelines and protocols must be designed and implemented to improve the nurses' knowledge, attitudes and practices related to pain assessment and management for better outcomes, satisfaction and well-being of the surgical patients and other patients in general.

Unit managers and Matrons in collaboration with training and research center and Director of nursing should encourage and organize the continuous professional developments, refresher in service trainings regarding pain assessment and pain management need to be encouraged and also advocate for upgrading the nurses' education levels. They have also to ensure that supervision and monitoring of daily nursing activities are done, ensuring that pain is assessed and documented together with other vital signs. They must ensure that their patients are educated about pain assessment and management and documentation is done. The hospital need to make sure of the development and implementation of pain assessment, management and documentation policies and standard guidelines and set up the measures to monitor the implementation through regular clinical audit quality improvement projects regarding pain management. The hospital should also take opportunity to establish effective committee of pain management involving all domains of health care professionals are included and set up the ways of reporting and follow up of pain management activities.

Pain management should be incorporated into nursing and other health related professions at under graduate studies and need to be reinforced in post graduates studies; further researches regarding use of opioids, beliefs of nurses regarding pain management, ways of overcoming different challenges available in pain management can be conducted among the health care professionals. The study can also be conducted at national level among all nurses in order to enhance generalization of findings.

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## **APPENDICES**

## **Appendix A. Consent form (English version)**

The consent form that will be signed by nurses working in surgical ward, emergency service, ICU, and operating theatre at CHUB as proof of agreement in participation of the study entitled: “Knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients in one referral hospital in Rwanda”.

### **First part**

#### **Introduction**

I am Oswald BENIMANA, student in Masters in Medical-surgical nursing track at University of Rwanda, College of medicine and health sciences. I am conducting the research about: “**knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients in one referral hospital in Rwanda**” for my Masters Degree. This research is supervised by Mr RUMENGE N. Alain and Dr Anita COLLINS.

The specific objectives of the study are: to determine pain management practices among nurses caring for surgical patients in one referral hospital in Rwanda, to determine the level of knowledge related to pain management among nurses caring for surgical patients in one referral hospital in Rwanda, to determine the attitudes of nurses caring for surgical patients towards pain management, to identify the barriers/challenges for pain management among nurses caring for surgical patients in one referral hospital in Rwanda, to identify the relationship between knowledge, attitudes and practices of the nurses about pain management and their demographic data.

#### **Data collection procedures**

The researcher will meet the respondents in their respective services early in the morning before the morning staff meeting (between 7-8am). The researcher will meet the nurses by services. He will introduce himself to them and then explain what the research is about. The respondents who will agree to participate in the study will sign the consent forms. After signing the consent forms the researcher will give them the questionnaires and assist them in answering some questions that will be raised by respondents and also to make sure that they all understand every question.

The researcher will request the participants to answer all questions in order to help the researcher to respond to the objectives of the study.

Once they will finish completing the questionnaires, they will put them in the box provided and then the completed questionnaires will be collected for analysis.

### **Recruitment of study participants**

All nurses working surgical ward, ICU, emergency service and operating theatre at CHUB meeting these criteria: (a) being a nurse working in surgical ward, operating theatre, emergency service and intensive care units at University Teaching Hospital of Butare (CHUB) and (b) Nurses who had worked at the above specified units/services for at least 6 months, (c) voluntarily participate in the study, (d) Nurses registered by the Rwanda Nurses and Midwives council, (e) Nurses who will consent to participate in the study, will be recruited in the current study.

### **The participation in this study is voluntary**

The researcher will ensure all participants that the participation in this study is voluntary, and their participation doesn't affect their status. The researcher will ensure the participants that whoever wants to withdraw from the study can do so and there may not be any impact.

### **Duration of data collection**

The researcher will inform the participants that completing the questionnaire will take at least 1 hour.

### **Consequences related to the participation in the study**

The researcher will ensure the participants that there are no expected consequences related to the participation in this study. The participants have the right to participate in this study or withdrawal from the study without consequences. The researcher will ensure the participants whenever they encounter consequences related to the study, the researcher is committed to intervene.

### **Study participant benefits from the study**

The researcher will ensure the participants that there are no immediate benefits to expect from the study but information and results will help to meet the objectives, therefore improving patients care about pain management

### **Bonus and wedges or financial allowances to participants in relation to the study**

There are no bonuses and wedges or financial allowances to participants in this study.

### **Confidentiality**

I will ensure the participants that the information they are providing will kept safely and confidentially. In order to ensure confidentiality, there will be no names on the questionnaires and only everyone will be given a code. The questionnaires will be accessed by the researcher and supervisors only. Everyone will complete the questionnaire independently.

### **Data dissemination**

After obtaining the research findings, they will be communicated and presented to UR-CMHS-SONM and to CHUB administration so that recommendations can be implemented. The research will be published in medical and nursing journals in Rwanda and the researcher and supervisors will find ways of publishing the research in International journals of medical and health sciences so that it can be accessible to everyone who wants to consult it.

### **Source of information**

Feel free to contact BENIMANA Oswald, the researcher. You can contact him face to face, through email: [benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr) or by cell phone: 0783065684/0722065684.

## Second part

I, .....,agree to participate in this research project on “**Knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients in one referral hospital in Rwanda**” conducted by BENIMANA Oswald, student in Masters in Medical-surgical track at University of Rwanda, College of medicine and health sciences, School of nursing and midwifery.

I understand that my participation in this study is entirely voluntary, and that if I wish to withdraw from the study, I may do so at any time, and I do not need to give reasons for doing so. If I withdraw from the study, I understand that, this will have no effect on any relations with the researchers.

I understand that I may not receive any direct benefit from participating in this study, but my participation may contribute to improve the quality of care through pain management and will help others in the future.

I understand that the information I give will be kept confidential to the extent permitted by law.

I have read and understood this information and agree to take part in this study.

Signature of the participant .....

CODE: .....

**Appendix B. Questionnaire reserved for nurses working in surgical ward, emergency, ICU and operating theatre at CHUB.**

**Instructions:**

1. The questionnaire is anonymous; please don't mention your name.
2. The questionnaire is individually answered.
3. Please respond to all questions.
4. Your honesty is strongly appreciated.

**Demographic information**

1. What is your level of education?

a. Advanced diploma

b. Bachelor's Degree

c. Master's Degree

d. Other to specify.....

2. What is your age? \_\_\_\_\_

3. Gender

a. Male

b. Female

4. How many years of nursing experience do you have? \_\_\_\_\_

5. What type of nursing unit do you work in?

a. Surgical

b. Operating theatre

c. ICU

d. Emergency

### **Knowledge, Attitudes and Practices about Pain Management**

#### **SECTION 1. True (T)/False (F) – Circle the correct answer**

T F 1. Do you have a usable pain measuring instruments available in your ward?

T F 2. Have you had earlier experience in managing pain among patients?

T F 3. Have you attended educational classes on pain management among the patients within the last 1 year?

T F 4. Have you read a journal or article on pain management?

T F 5. If you answered YES to question 4, have you applied the knowledge acquired practically?

T F 6. Have you had personal experience with pain?

T F 7. If you answered YES to question 6, was it acute or chronic pain?

T F 8. If acute or chronic, has it affected the way you manage pain on patients?

T F 9. Patients who can be distracted from pain usually do not have severe pain

T F 10. Patients may sleep in spite of severe pain

T F 11. Respiratory depression rarely occurs in patients who are receiving opioids

T T 12. Elderly patients cannot tolerate opioids for pain relief

T F 13. Combining analgesics (e.g., combining an NSAID with an opioid) that work by different mechanisms may result in better pain control with fewer side effects than using a single analgesic agent

T F 14. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.

T F 15. The patient in pain should be advised to use non- pharmacological means alone rather than use pain medications

T F 16. Pain is part of ageing process

T F 17. Vital signs are always reliable indicators of the intensity of a patient's pain.

T F 18. Because their nervous system is underdeveloped, children under two years of age have

decreased pain sensitivity and limited memory of painful experiences.

T F 19. Aspirin and other non steroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.

T F 20. The usual duration of action of IV Morphine Sulfate is 6-8 hours.

T F 21. Opioids should not be used in patients with a history of substance abuse.

T F 22. Patients should be encouraged to endure as much pain as possible before using an opioid.

T F 23. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.

T F 24. Patients' spiritual beliefs may lead them to think pain and suffering are necessary.

T F 25. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in

accordance with the individual patient's response.

T F 26. If the source of the patient's pain is unknown, opioids should not be used during the pain

evaluation period, as this could mask the ability to correctly diagnose the cause of pain.

T F 27. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.

T F 28. Benzodiazepines are not effective pain relievers and are rarely recommended as part of an analgesic regimen.

T F 29. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by

behaviors that include one or more of the following: impaired control over drug use, compulsive

use, continued use despite harm, and craving.

T F 30. The term 'equianalgesia' means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.

T F 31. Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression.

T F 32. If the child can be distracted from his or her pain this usually means that the child is NOT experiencing severe pain.

T F 33. Children may sleep in spite of severe pain.

T F 34. Different patients experiencing comparable stimuli will experience the same intensity of pain.

T F 35. Acetaminophen and nonsteroidal anti-inflammatory agents are effective analgesics for children's postoperative pain.

T F 36. Non-drug interventions (e.g., heat, music, imagery, etc.) are very effective for mild-moderate pain control but are rarely helpful for more severe pain.

T F 37. The World Health Organization (WHO) pain ladder suggests combining classes of drugs (e.g., combining an opioid with a non-steroidal agent) rather than using single analgesic agents.

T F 38. Children/adolescents in recovery from past substance abuse should not be given opioids for pain because they are at high risk for reoccurrence of addiction.

T F 39. Beyond a certain dosage of strong opioids (e.g., morphine), increases in dosage will NOT increase pain relief.

T F 40. Children generally can tolerate strong medications such as opioids for pain.

T F 41. The patient should be advised to use non-drug techniques along with pain medications.

T F 42. Heat or cold is only effective if applied to the painful area.

## **SECTION 2. Multiple Choice – Place a check by the correct answer**

43. What is the most likely reason a patient with pain would request increased doses of pain medication?

- a. The patient is experiencing increased pain
- b. The patient is experiencing increases anxiety or depression
- c. The patient is requesting more staff attention
- d. The patient's request are related to addiction

44. How often do you use pain measurement instruments in your ward?

- a. Often
- b. Always
- c. Rarely

d. Never

45. 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

46. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is

- a. intravenous
- b. intramuscular
- c. subcutaneous
- d. oral
- e. rectal

47. Which of the following analgesic medications is considered the drug of choice for the treatment of severe pain of sudden onset, e.g., trauma or postoperative pain:

- a. acetaminophen (Tylenol)
- b. codeine
- c. ibuprofen (Motrin)
- d. morphine
- e. meperidine (Demerol)

48. 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

49. Which of the following describes the best approach for cultural considerations in caring for patients in pain:

- a. There are no longer cultural influences in the Rwanda due to the diversity of the population.
- b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
- c. Patients should be individually assessed to determine cultural influences.
- d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).

50. The time to peak effect for morphine given IV is

- a. 15 min.
- b. 45 min.
- c. 1 hour
- d. 2 hours

51. The time to peak effect for morphine given orally is

- a. 5 min.
- b. 30 min.
- c. 1 – 2 hours
- d. 3 hours

52. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:

- a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.
- b. Impaired control over drug use, compulsive use, and craving.
- c. The need for higher doses to achieve the same effect.
- d. a and b

53. Which statement is true regarding opioid induced respiratory depression:

- a. More common several nights after surgery due to accumulation of opioid.
- b. Obstructive sleep apnea is an important risk factor.
- c. Occurs more frequently in those already on higher doses of opioids before surgery.
- d. Can be easily assessed using intermittent pulse oximetry.

54. Which of the following drugs are generally NOT recommended for treatment of children's postoperative pain?

- a. acetaminophen (Tylenol)
- b. codeine

- c. ibuprofen (Motrin)
- d. morphine
- e. meperidine (Demerol)

55. What do you think is the percent of patient who over report the amount of pain they have? Circle the number closest to what you consider the correct answer.

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

56. Narcotic/opioid addiction is defined as psychological dependence accompanied by overwhelming concern with obtaining and using narcotics for psychic effect, not for medical reasons.

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

< 1%      2.5%      5%      10%      20%

### SECTION 3. Case Study

**One patient case study is presented. You are asked to make decisions about pain and medication.**

**Directions: Please select one answer for each question.**

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

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

0   1   2   3   4   5   6   7   8   9   10

-----

No pain/discomfort Worst

Pain/discomfort

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

1. Administer no morphine at this time.
2. Administer morphine 1 mg IV now.
3. Administer morphine 2 mg IV now.
4. Administer morphine 3 mg IV now.

#### SECTION 4. Challenges to optimal pain management

Below are some challenges to optimal pain management that have been identified previously in the researches by Health Care Professionals.

On a scale of 0 to 10, with 0 being “Not a challenge” and 10 being “A major challenge” please circle the number that best rates these barriers to your optimal pain management of surgical patients:

58. Inadequate knowledge or information gap about pain assessment and management

0      1      2      3      4      5      6      7      8      9      10

Not a challenge

A major challenge

59. My ability to assess pain

0      1      2      3      4      5      6      7      8      9      10

Not a challenge

A major challenge

60. My concern of a patient becoming addicted

0      1      2      3      4      5      6      7      8      9      10

Not a challenge

A major challenge

61. My concern about side effects of pain medications (other than addiction)

0      1      2      3      4      5      6      7      8      9      10

Not a challenge

A major challenge

62. My concern about patient becoming tolerant to analgesics

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

63. Low priority given to pain management by medical staff

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

64. Low priority given to pain management by nursing staff

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

65. Inadequate or insufficient physician medication orders

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

66. Patient's reluctance to report pain

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

67. Patient's reluctance to take pain medications

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

68. Lack of courses related to pain in the under graduate classes,

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

69. Lack of continuing training,

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

70. Work overload and shortage of nursing staff,

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

71. Role confusion,

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

72. Lack of equipments for patient monitoring after and before pain medications,

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

73. Lack of motivation including low salary or working in stressful environment.

0 1 2 3 4 5 6 7 8 9 10

Not a challenge

A major challenge

## **Appendix C. icyemezo cy'uwemeza kugira uruhare mu bushakashatsi**

Iki cyamezo kirasinywa n'abaforomo, abaromokazi bakora mu ma shami y'indwara zibagwa, ahakirirwa indembe, aho babagira ndetse n'inzu y'indembe mu Bitaro bya Kaminuza bya Butare mu rwego rwo kugaragaza ko bemeye gukorerwaho ubushakashatsi bugamije: "Kureba ubumenyi, imyumvire, imikorere yabo ndetse n'imbogamizi bahura nazo mu mivurire y'uburibwe bw'abarwayi b'indwara zibagwa".

### **Igice cya mbere**

#### **Intangiriro**

Nitwa BENIMANA Oswald, Umunyeshuri mu cyiciro cya Gatatu cya Kaminuza mu ishami ry'indwara z'umubiri n'indwara zibagwa muri Kaminuza y'u Rwanda, Ishuri ry'Ubuvuzi n'ubumenyi bw'ubuzima. Ndi gukora ubushakashatsi bugamije: "Kureba ubumenyi, imyumvire, imikorere yabo ndetse n'imbogamizi bahura nazo mu mivurire y'uburibwe bw'abarwayi b'indwara zibagwa" kugira ngo mbashe kubona impamyabumenyi y'icyiciro cya gatatu cya Kaminuza. Ubu bushakashatsi buhagarariwe n'abarimu: RUMENGE N. Alain na Dogiteri Anita COLLINS.

Intego z'umwihariko z'ubu bushakashatsi ni: kureba ubumenyi bw'abaforomo, abaromokazi bavura abarwayi b'indwara zibagwa ku bijyanye n'imivurire y'uburibwe, kureba imyumvire yabo ku bijyanye n'imivurirwe y'uburibwe, kureba imikorere yabo ku mivurire y'uburibwe, kureba imbogamizi bahura nazo mu mivurire y'uburibwe, kureba niba hari isano iri hagati y'imyirondoro yabo n' ubumenyi, imyumvire ndetse n'imikorere yabo mu mivurire y'uburibwe bw'abarwayi b'indwara zibagwa.

#### **Uburyo amakuru azafatwa**

Umushakashatsi azahura n'abaforomo, abaromokazi bakorera mu mashami yavuzwe haruguru mu gitondo hagati ya saa moya na saa mbiri. Azabibwira hanyuma abasobanurire icyo ubushakashatsi bugamije. Uwemeye gukorerwaho ubushakashatsi azasinye urupapuro rwemeza ko abyemeye. Nyuma yo gusinye urwo rupapuro, umushakashatsi azabaha urupapuro rw'ibibazo bagomba gusubirizaho hanyuma abe hamwe nabo kugira ngo abafashe mu gusobanura ibibazo bitumvikanye neza kandi kubafasha gusubiza ibyo bumva neza.

Umushakashatsi azasaba buri wese wemeye gukorerwaho ubushakashatsi ko agomba gusubiza ibibazo byose kugira intego z'ubushakashatsi zigerweho neza.

Nibarangiza kuzuza impapuro z'ibibazo, bazazishyira mu gasanduku kazaba kagenwe hanyuma zijyanwe gusesengurwa.

### **Uko abitabira ubushakashatsi bazatoranywa**

Abazatoranywa mu gukorerwaho ubushakashatsi ni abujuje ibi bikurikira: a) Abaforomo, abaforomokazi bakorera mu nzu y'indembe, mu ishami ryakira indembe, ishami ry'ibagiro, ndetse n'ishami ry'indwara zibagwa mu bitaro bya kaminuza bya Butare bose; b) abaforomo, abaforomokazi bakoreye muri ayo mashami nibura amezi atandatu; c) abafite ubushake bwo gukorerwa ho ubushakashatsi; d) Abafite impushya zo gukora umwuga w'ubuforomo bahawe n'Urugaga rw'abaforomo, abaforomokazi n'ababyaza rwo mu Rwanda; e) abemeye gusinya urupapuro rwo kwemera gukorerwaho ubushakashatsi.

### **Gukorerwaho ubushakashatsi ni ubushake**

Umushakashatsi azizeza abakorerwaho ubushakashatsi ko kwemera kubukorerwaho ari ubushake kandi ko nta ngaruka byagira ku buzima ndetse n'akazi kabo. Azabizeza kandi ko uwashaka kubuvamo wese nta ngaruka byamugiraho.

### **Igihe gukusanya amakuru bizamara**

Umushakashatsi azabwira abakorerwaho ubushakashatsi ko kuzuza urupapuro rusaba amakuru bitwara isaha imwe kuri buri wese.

### **Ingaruka zo kwemera gukorerwaho ubushakashatsi**

Umushakashatsi azizeza bakorerwaho ubushakashatsi ko nta ngaruka bazagira haba ku buzima ndetse no mu kazi. Abakorerwa ho ubushakashatsi bafite uburenganzira bwo kubuvamo igihe icyaricyo cyose kandi nta ngaruka bayabgira ho. Azabizeza kandi ko uwagirira ikibazo mu bushakashatsi yakwegera umushakashatsi akamufasha.

### **Inyungu zo kwemera gukorerwa ho ubushakashatsi**

Umushakashatsi azizeza abitabira ubushakashatsi ko nta nyungu zidasanzwe bazabonera mu bushakashatsi ariko bazasobanurirwa ko amakuru azava mu bushakashatsi azafasha mu gutuma imivurire y'abarwayi bafite uburibwe yiyongera.

### **Ibijyanye n'ibanga muri ubu bushakashatsi**

Umushakashatsi azizeza abakorerwaho ubushakashatsi ko amakuru batanze azabikwa mu ibanga. Nta mazina agomba gushyirwa ku rupapuro rw'ibisubizo ahubwo hazakoreshwa umubare w'ibanga uzahabwa buri wese. Impapuro z'ibibazo n'ibisubizo zizaba zifitwe ho uburenganzira n'umushakashatsi ndetse n'abahagarariye ubushakashatsi. Buri muforomo, muforomokazi azuzuza urupapuro rw'ibibazo ku giti cye.

### **Uko ibyavuye mu bushakashatsi bizasakazwa**

Nyuma yo gusesengura ibyavuye mu bushakashatsi, ibyavuye mo bizashyikiriza Kaminuza y'u Rwanda, Ishuri ry'ubuvuzi ndetse n'ubumenyi bw'ubuzima n'ubuyobozi bw'ibitaro bya kaminuza bya Butare kugira ngo ibitekerezo byatanze bishyirwe mu bikorwa. Ubushakashatsi buzashyirwa ahagaragara ku mbuga nkoranya mbaga kuburyo uwari wese wakenera kubukoresha yabubona.

Ushaka ibindi bisobanuro

Wareba Umushakashatsi BENIMANA Oswald amaso ku maso cyangwa ukamwandikira kuri [benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr) cyangwa ukamuhamagara kuri 0783065684/0722065684.

## Igice cya Kabiri

Njyewe, ....., nemeye kugira uruhare mu bushakashatsi bugamije: “Gusuzuma ubumenyi, imyumvire, imikorere y’abaforomo, abaforomokazi bo mu bitaro bya Kaminuza bya Butare bavura abarwayi b’indwara zibagwa ku bijyanye n’imivurire y’uburibwe ndetse n’imbogamizi bahura nazo” burimo gukorwa na BENIMANA Oswald, Umunyeshuri mu cyiciro cya Gatatu cya Kaminuza muri Kaminuza Nkuru y’u Rwanda mu ishami ry’ubuvuzi ndetse n’ubumenyi bw’ubuzima.

Nasobanuriwe neza ko kugira uruhare muri ubu bushakashatsi ari ubushake, kandi ko igihe cyose nashaka kubuvamo nabikora igihe icyaricyo cyose kandi bidasabwe ngo ntange ibisobanuro cyangwa ngo bingireho ingaruka haba mu kazi cyangwa mu mibanire yanjye n’umushakashatsi.

Nasobanuriwe neza ko nta nyungu ntegereje muri ubu bushakashatsi ariko nasobanuriwe ko uruhare rwanjye rwatuma imivurire y’uburibwe yiyongera kandi bikazafasha mu bundi bushakashatsi ku bijyanye n’ubuvuzi bw’uburibwe.

Nijejwe ko amakuru ntanga azabikwa neza kandi akagirirwa ibanga.

Maze gusoma no gusobanurirwa neza ibisabwa byose muri ubu bushakashatsi nemeye kugira uruhare muri ubu bushakashatsi.

Umukono .....

CODE: .....

**Appendix D. Urupapuro rw'ibibazo rugenewe kuzuzwa n'abaforomo, abaforomokazi bakora mu mashami y'ahakirirwa indembe, inzu y'indembe, ibagiyo, ahavurirwa indwara zibagwa mu bitaro bya kaminuza bya BUTARE**

**Amabwiriza:**

1. Nta mazina yemerewe kwandikwa kuri izi mpapuro
2. Buri rupapuro rwuzuzwa n'umuntu umwe ku giti cye
3. Gusubiza ibibazo byose ni ngombwa kandi ni ingenzi
4. Kuvugisha ukuri ni ingenzi

**Imyirondoro**

1. Amashuri wize?
  - a. icyiciro cya mbere cya kaminuza
  - b. icyiciro cya kabiri cya kaminuza
  - c. icyiciro cya gatatu cya kaminuza
  - d. ibindi:.....
2. Imyaka ufite? \_\_\_\_\_
3. Igitsina?
  - a. Gabo
  - b. Gore
4. Umaze imyaka ingahe mu mwuga w'ubuforomo, ubuforomokazi? \_\_\_\_\_
5. Ukorera muri he shami?
  - a. Indwara zibagwa
  - b. Ibagiro
  - c. Inzu y'indembe
  - d. Ahakirirwa indembe

**Ibijyanye n'ubumenyi, imyumvire ndetse n'imikorere mu kuvura uburibwe.**

**IGICE CYA 1. Hitamo YEGO (T) cyangwa OYA (F)**

T F 1. Mufite igikoresho mwifashisha mu gupima uburirwe mu ishami mu vuriramo?

T F 2. Mwaba mwarigeze kuvura umurwayi ufite uburibwe?

T F 3. Mwaba mwarigeze kwigishwa ibijyanye no kuvura uburibwe mu ishuri cyangwa mu mahugurwa muri uyu mwaka ushize?

T F 4. Mwaba mwarigeze gusoma ibitabo bivuga ku kuvura uburibwe?

T F 5. Niba ari yego ku kibazo cya 4, mwaba mwarakoresheje ubumenyi mwakuyemo neza mu kuvura abarwayi?

T F 6. Mwaba mwarigeze mugira ikibazo cy'uburibwe?

T F 7. Niba ari yego ku kibazo cya 6, bwamaze igihe gito cyangwa kirekire?

T F 8. Niba ari yego ku kibazo cya 6, byaba byaragufashije mu buryo uvura abarwayi bafite uburibwe?

T F 9. Abarwayi bashobora kugira ibibahuza ntabwo baba bafite uburibwe bwinshi.

T F 10. Abarwayi bashobora gusinzira nubwo baba bafite uburibwe bwinshi.

T F 11. Kudakora neza ku buhumekero biba ho gake ko abarwayi bahawe imiti ihanitse igabanya uburibwe.

T T 12. Abarwayi bakuze cyane ntabwo babasha kwihanganira imiti ihanitse igabanya uburibwe.

T F 13. Gufatanya imiti myinshi igabanya uburibwe ariko ikora mu buryo butandukanye bifasha mu gutuma uburibwe buvurwa neza kandi ingaruka zikaba nke ugereranije no gukoresha umuti umwe.

T F 14. Guha umurwayi amazi ucishije mu mutsi byagufasha kureba niba koko afite uburibwe.

T F 15. Umurwayi uri kuribwa yashishikarizwa gukoresha uburyo butari ubw'imiti kurusha guhabwa imiti.

T F 16. Uburibwe ni ikimenyetso cy'izabukuru

T F 17. Ibimenyetso by'ibanze by'ubuzima ni bimwe mu bintu byizewe byadufasha kumenya uko uburibwe bw'umurwayi bunagana.

T F 18. Kubera ko igice cy'umubiri gicunga imitekerereze n'ubwonko by'abana bo muni y'imyaka ibiri kiba kitarakura neza, ntabwo bumva uburibwe.

T F 19. Imiti nka aspirine n'indi biri mu bwoko bumwe ntabwo byagabanya uburibwe neza ku barwayi bafite cancer yageze mu magufwa.

T F 20. Igihe umuti nka morufine watanzwe mu mutsi umara mu muntu urimo gukora ni hagati y'amasaha 6 - 8.

T F 21. Imiti igabanya uburibwe ihambaye ntabwo igomba gukoresha kubantu bazwi ho gukoresha ibiyobyabwenge.

T F 22. Abarwayi baraburirwa kumanza kumva ko uburibwe bwabo bukaze mbere yo gukoresha imiti igabanya uburibwe ihambaye.

T F 23. Abana bari muni y'imyaka 11 ntabwo bashobora kuvuga uko uburibwe bafite bungana, bityo abavuzi bagomba kugendera kubyo ababyeyi babo bavuze.

T F 24. Imyemerere y'abarwayi ishobora gutuma batekereza ko kubabara cyangwa uburibwe ari ngombwa.

T F 25. Nyuma y'uko umurwayi amaze guhabwa ishuro imwe umuti, izindi zigenda zitangwa hakurikije uko umurwayi arimo kumera.

T F 26. Igihe inkomoko y'uburibwe itazwi, imiti ihambaye ntabwo igomba gukoreshwa kubera ko ishobora guhisha ibimenyetso bigatuma inkomoko yabwo itagaragara.

T F 27. Imiti irinda kugagara nka gabapentin (Neurontin) igabanya uburibwe ku rwego rwo hejuru iyo itanzwe inshuri imwe.

T F 28. Imiti ikora ku gice gikoresha umubiri w'umuntu nka Benzodiazepines ntabwo ivura uburibwe kandi ntabwo ikunzwe gukoreshwa.

T F 29. Kuba imbata y'imiti igabanya uburibwe bisobanuye kudashobora kwicunga kubijyanye no gukoresha imiti, gukomeza kuyikoresha nubwo yaba ikugiraho ingaruka cyangwa kugira ibibazo byo mutwe bitewe no kuyikoresha kandi nta burwayi umurwayi afite.

T F 30. Ijambo 'equianalgesia' bivuze imiti igabanya uburibwe itangwa ku gipimo kingana kugira ngo itange kugabanya uburibwe bingana.

T F 31. Gusuzuma ko umurwayi adasinziye ni ingenzi cyane mugihe ari ku miti ihambaye igabanya uburibwe kuko gusinzira bikabije ku murwayi uri kuri iyo miti bibanziriza ibibazo byo mu buhumekero biterwa n'iyi miti.

T F 32. Igihe cyose umwana ashobora kugira ikimurangaza bisobanuye ko nta buribwe bukomeye afite.

T F 33. Abana bashobora gusinzira nubwo baba bafite uburibwe bukabije.

T F 34. Abarwayi bahuje igitera uburibwe bagira uburibwe bunganya ingano.

T F 35. Imiti igabanya uburibwe nka Acetaminophen n'indi buhije ubwoko ntabwo igabanya uburibwe neza ku bana bamaze kubagwa.

T F 36. Kuvura uburibwe hadakoreshejwe imiti (urugero: gukoresha ubukonje, umuziki,...) bigabanya uburibwe bugereranije ku rugero rushimishije ariko ntabwo bukunze kubugabanya ku buribwe buhambaye.

T F 37. Umuryango w'abibumye wita ku buzima (OMS) itegeka gukoresha urwego rugaragaza kuvanga imiti myinshi ku rusha gukoresha umuti umwe mu kuvura uburibwe.

T F 38. Abana cyangwa abangavu n'ingimbi bavuye mu ibagiro ariko bakaba bazwi ho gukoresha ibiyobyangenge, ntabwo bagomba guhabwa imiti igabanya uburibwe ihambaye kuko bafite amahirwe menshi yo kubatwa nayo (addiction).

T F 39. Imiti ihambaye nka morufine igabanya uburibwe iyo itanzwe ku rugero rwo hejuru, iyo yongerewe ntabwo igabanya uburibwe.

T F 40. Abana bihanganira imiti ihambaye ku kuvura uburibwe.

T F 41. Abarwayi bashishikarizwa gukoresha ubundi buryo butari imiti hamwe n'imiti mu kugabanya uburibwe.

T F 42. Ubushyuhe cyangwa ubukonje ni byiza mu kugabanya uburibwe iyo bikoze ahantu hari kuribwa.

### **IGICE cya 2. Guhitamo igisubizo kiri cyo.**

43. Ni iyihe mpamvu umurwayi urimo kuribwa ashobora kwaka kongererwa ingano y'umuti ugabanya uburibwe?

- a. Umurwayi ari kumva uburibwe bwiyongera
- b. Umurwayi ari kugira umuhangayiko ukabije
- c. Umurwayi ashaka kwitabwaho n'abavuzi bihambaye
- d. Umurwayi ari kubatwa n'imiti

44. Ni kangahe mukoresha igipimo gipima ububabare aho mukorera?

- a. Gake
- b. Buri gihe
- c. Gake gashoboka
- d. Nta na rimwe

45. Umuntu wizewe ushobora kumenya ingano y'uburibwe bw'umurwayi ni:

- a. Umuganga
- b. Umuforomo uri kumwe n'umurwayi
- c. Umurwayi
- d. Ushinzwe iby'imiti muri pharmacy
- e. Uwo bashakanye, umwe mu muryngo we.

46. Uburyo busabwa mu gutanga imiti ihambaye igabanya uburibwe ku murwayi ufite uburibwe buhambaye nka nyuma yo kubagwa ni:

- a. Mu mutsi
- b. Mu nyama
- c. Muni y'uruhu
- d. Mu kanwa
- e. Mu kibuno/ mu nnyo

47. Mu miti ikurikira, ni uwuhe ukoreshwa mu kuvura uburibwe buhambaye nka nyuma yo kubagwa,.....:

- a. acetaminophen (Tylenol)
- b. codeine
- c. ibuprofen (Motrin)
- d. morphine
- e. meperidine (Demerol)

48. Imiti igabanya uburibwe nyuma yo kubagwa igomba gutangwa:

- a. Ku isaha yagenwe ku gutanga uwo muti
- b. Igihe umurwayi yatse uwo muti
- c. Igihe umuforomo abona ko umurwayi atameze neza.

49. Ni ikihe muri ibi bikurikira kigaragaza icyakitabwaho mu muco igihe harimo kuvurwa umurwayi ufite uburibwe?

- a. Nta kongera kwita ku by'umuco mu Rwanda kubera ko hasigaye hatuye abantu b'ingeri zose n'imico yose.
- b. Iby'umuco bigendana n'amoko y'abantu cyangwa aho baturuka (urugero: abataliyani baravuga cyane iyo bafite ikibazo,.....).
- c. Abarwayi bagomba gusuzumwa neza kugira ngo umenye imico yabo
- d. Imico igaragazwa cyangwa irangwa n'imibereho y'abantu

50. Igihe bisaba ngo morphine yatanzwe mu mutsi ikore neza ni:

- a. Iminota 15.
- b. Iminota 45.
- c. Isaha 1.
- d. Amasaha 2.

51. Igihe bisaba ngo morphine yatanzwe mu mukanwa ikore neza ni

- a. Iminota 5.
- b. Iminota 30.
- c. Hagati y'isaha 1 n'abiri
- d. Amasaha 3.

52. Bitewe no guhagarika bitunguranye imiti ihambaye igabanya uburibwe, umurwayi wagize ububata agira ibi bimenyetso:

- a. Kubira ibyuya, kwayura, gucibwamo, gushikagurika
- b. Kudashobora kwicunga ku gukoresha imiti.
- c. Akenera ingano nini kugira ngo uburibwe bugabanuke.
- d. a na b

53. Ni ikihe kiri cyo kubijyanye n'umurwayi wagize ibibazo mu buhemekero byatewe n'imiti igabanya uburibwe ihambaye?

- a. Bikunda kubaho kenshi nijoro nyuma yo kubagwa kubera kuba byinshi mu mubiri.
- b. Kudahumeka kubera ubuhumekero bwifunze nibyo bibitera cyane.
- c. Bikunda kubaho ku bafashe ingano nyinshi y'umuti mbere yo kubagwa.
- d. Bishobora gusuzumwa hakoreshejwe gupima ingano y'umwuka mu maraso.

54. Muri iyi miti igabanya uburibwe ni uwuhe utemerewe guhabwa abana nyuma yo kubagwa?

- a. acetaminophen (Tylenol)
- b. codeine
- c. ibuprofen (Motrin)
- d. morphine
- e. meperidine (Demerol)

55. Mukeka ko abarwayi bavuga ko uburwayi bwayo burenze bangana bate ugereranije n'abarwayi bese? Hitamo umubare.

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

56. Kuba imbata y'imiti igabanya uburibwe bisobanura kumva umurwayi yahora arimo kubona imiti kandi agahora asaba iyo miti atari ukubera ko uburwayi bwe buyimwemerera.

Ugendeye kuri ibi bisobanuro, ukeka ko uko kuba imbata byaba kangaha ku barwayi bari gufata iyo miti? Hitamo umubare.

< 1% 2.5% 5% 10% 20%

### IGICE cya 3. Urugero rw'umurwayi

**Musabwe guhitamo uko mubyumva ku bijyanye no gufata ingamba mu buvuzi bw'uyu murwayi.**

**Hitamo igisubizo kimwe.**

57. Umurwayi A: afite imyaka 25, ni umunsi we wa mbere nyuma yo kubagwa mu nda. Ugeze mu cyumba arimo usanze arimo guseka, avuga neza kandi arimo kuganira n'abamusuye. Mu kumusuzuma, ibimenyetso bye by'ubuzima byibanze bigaragaje: umuvuduko w'amaraso: 120/80, uko umutima utera: 80, uko arimo guhumeka: 18. Ku gipimo cy'uburibwe cyo kuva kuri 0 kugeza 10 (0=nta buribwe, 10= uburibwe bukabije) akubwiye ko afite 8.

A. Ugendeye ku byo ubonye umusuzuma, erekana aho uburibwe bwe buri uhitamo umubare nyawo.

0 1 2 3 4 5 6 7 8 9 10

-----  
No pain/discomfort Worst

Pain/discomfort

B. Ibyo ubonye urimo kumusuzuma bibonetse nyuma nyuma y’uko amaze kubona morphine 2 mg mu mutsi. Buri minota 30 nyuma yo guterwa imiti igabanya uburibwe bigaragara ko uburibwe bwe buba hagati ya 6 na 8 kandi nta bibazo by’ubuhumekero, gusinzira cyangwa ikindi kintu arimo kugira. Umurwayi akubwiye ko kuri we uburibwe buri kuri 2 ntacyo bumutwara. Umuganga yamwandikiye kumuha morphine mu mutsi 1 – 3 mg buri saha kubera uburibwe bwe. Ni iki kigomba gukorwa:

1. Nta morphine agomba guhabwa
2. Kumuha morphine 1mg mu mutsi
3. Kumuha morphine 2mg mu mutsi
4. Kumuha morphine 3mg mu mutsi

#### **IGICE cya 4. Imbogamizi mu kuvura abarwayi bafite uburibwe**

Hano hari imbogamizi zagaragaye mu bundi bushakashatsi bwakozwe kubijyanye n’imivurire y’abarwayi bafite uburibwe.

Kuri iki gipimo kiva kuri 0 kugeza 10, aho 0 ari “ntabwo ari mbogamizi” naho 10 “imbogamizi ikomeye”, hitamo umubare ugaragaza urwego ibyavuzwe ari imbogamizi kuri wowe.

58. Ubumenyi budahagije ndetse no kutabona amakuru ahagije kubijyanye no gusuzuma uburibwe no kubuvura

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

59. Ubushobozi n'akamenyero mu gusuzuma uburibwe

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

60. Kugira ikibazo ko umurwayi ashobora kubatwa n'imiti

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

61. Kugira ikibazo ko umurwayi aragira izindi ngaruka ku miti

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

62. Kugira ikibazo ko umurwayi azajya akenera umuti mwinshi ngo uburibwe bugabanuke

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

63. Kuvura uburibwe bihabwa agaciro gake n'abaganga

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

64. Kuvura uburibwe bihabwa agaciro gake n'abaforomo, abaformokazi

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

65. Abaganga ntibandikira abarwayi imiti igabanya uburibwe

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

66. Abarwayi banga kuvuga ko bafite uburibwe

0 1 2 3 4 5 6 7 8 9 10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

67. Abarwayi banga gufata imiti igabanya uburibwe

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

68. Kubura cyangwa kudahabwa amasomo ku bijynaye no kuvura uburibwe mu mashuri yo hasi

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

69. Kutabona amahugurwa ku bijyanye no kuvura uburibwe

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

70. Akazi kenshi ndetse n'abaforomo, abaformokazi bake,

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

71. Kutamenya akamaro ka buri wese mu buvuzi bw'uburibwe

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

72. Kubura ibikoresho bidufasha gusuzuma no kuvura abarwayi mbere na nyuma yo kubaha imiti igabanya uburibwe

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

73. Kubura igitera umuntu imbaraga cyangwa igituma anyurwa nk' umushahara muto, akazi kenshi, imikorere inaniza.

0      1      2      3      4      5      6      7      8      9      10

Ntabwo ari mbogamizi

Imbogamizi ikomeye

**Appendix E. To whom it may concern**



UNIVERSITY OF  
**RWANDA**

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

Kigali, on 30 / 01 / 2017

Ref. No: 46./UR-CMHS/SoNM/17

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam,

Re: Request to collect data

Referring to the above subject, I am requesting for permission for BENIMANA OSWALD, a final year student in the Masters of Science in Nursing at the University of Rwanda/College of Medicine and Health Science to collect data for his/her research dissertation entitled "KNOWLEDGE, ATTITUDES AND PRACTICES ABOUT PAIN MANAGEMENT AMONG SURGICAL PATIENTS, CHUB".

This exercise that is going to take a period of 2 months starting from 13<sup>th</sup> February 2017 to 12<sup>th</sup> April 2017 will be done at "UNIVERSITY TEACHING HOSPITAL OF BUTARE, CHUB".

We are looking forward for your usual cooperation

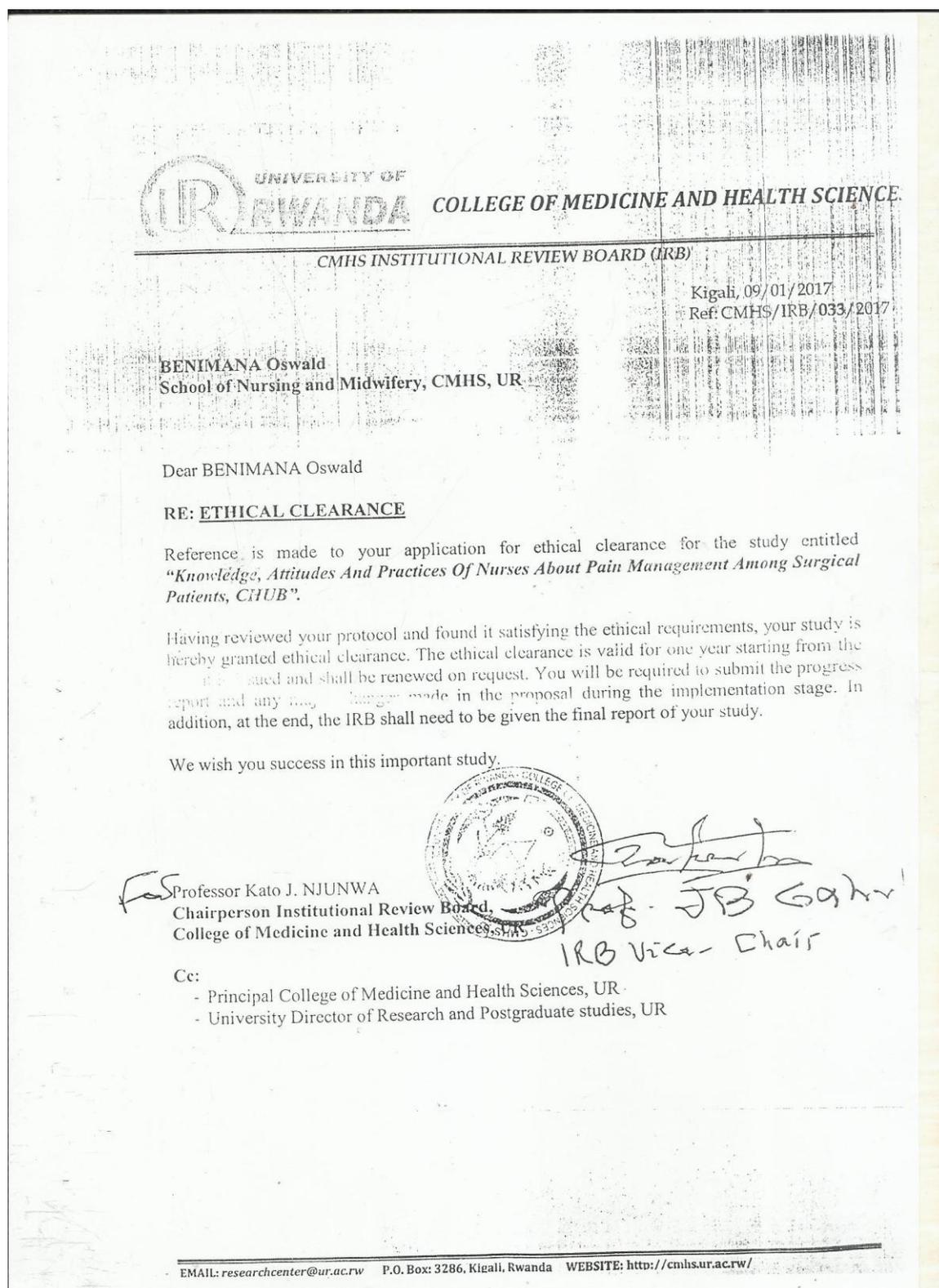
Sincerely,



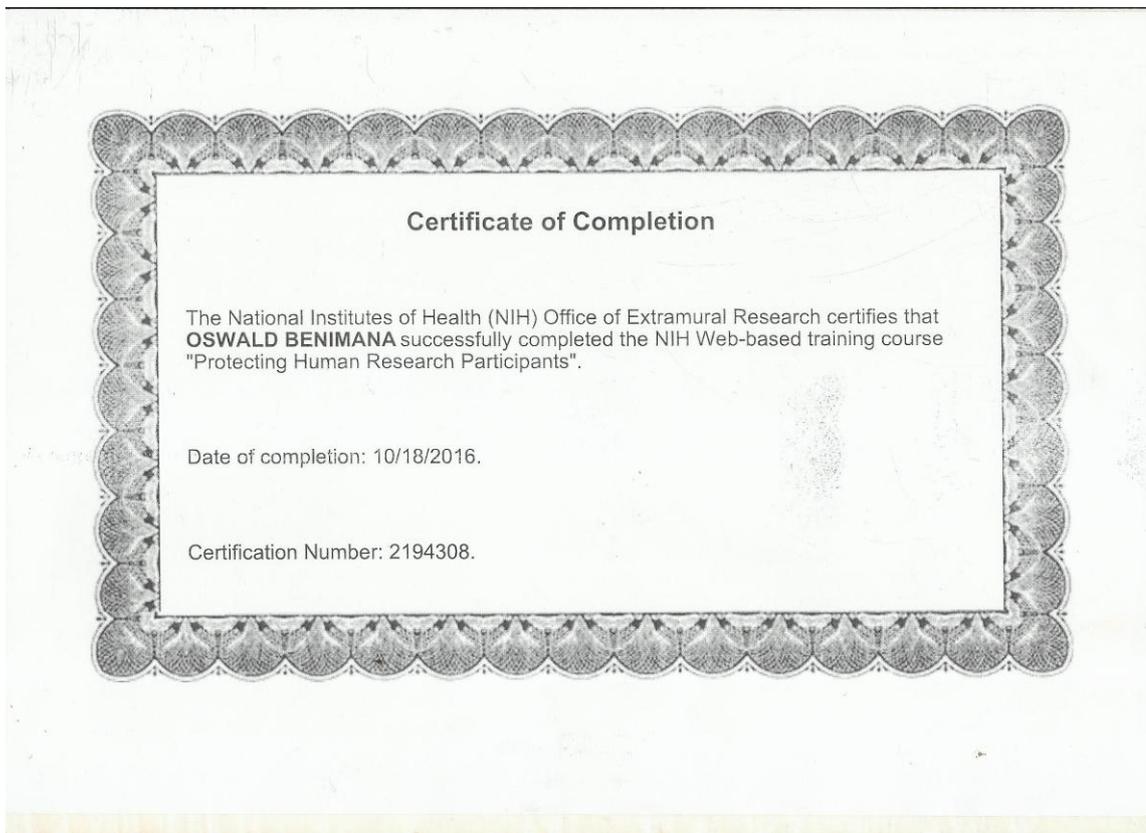
Dr. Donatilla MUKAMANA, RN, PhD  
Dean, School of Nursing and Midwifery  
College of Medicine and Health Sciences

Email: schoolofnursingandmidwifery@ur.ac.rw, P.O.Box: 3286 Kigali-Rwanda, Website: www.ur.ac.rw

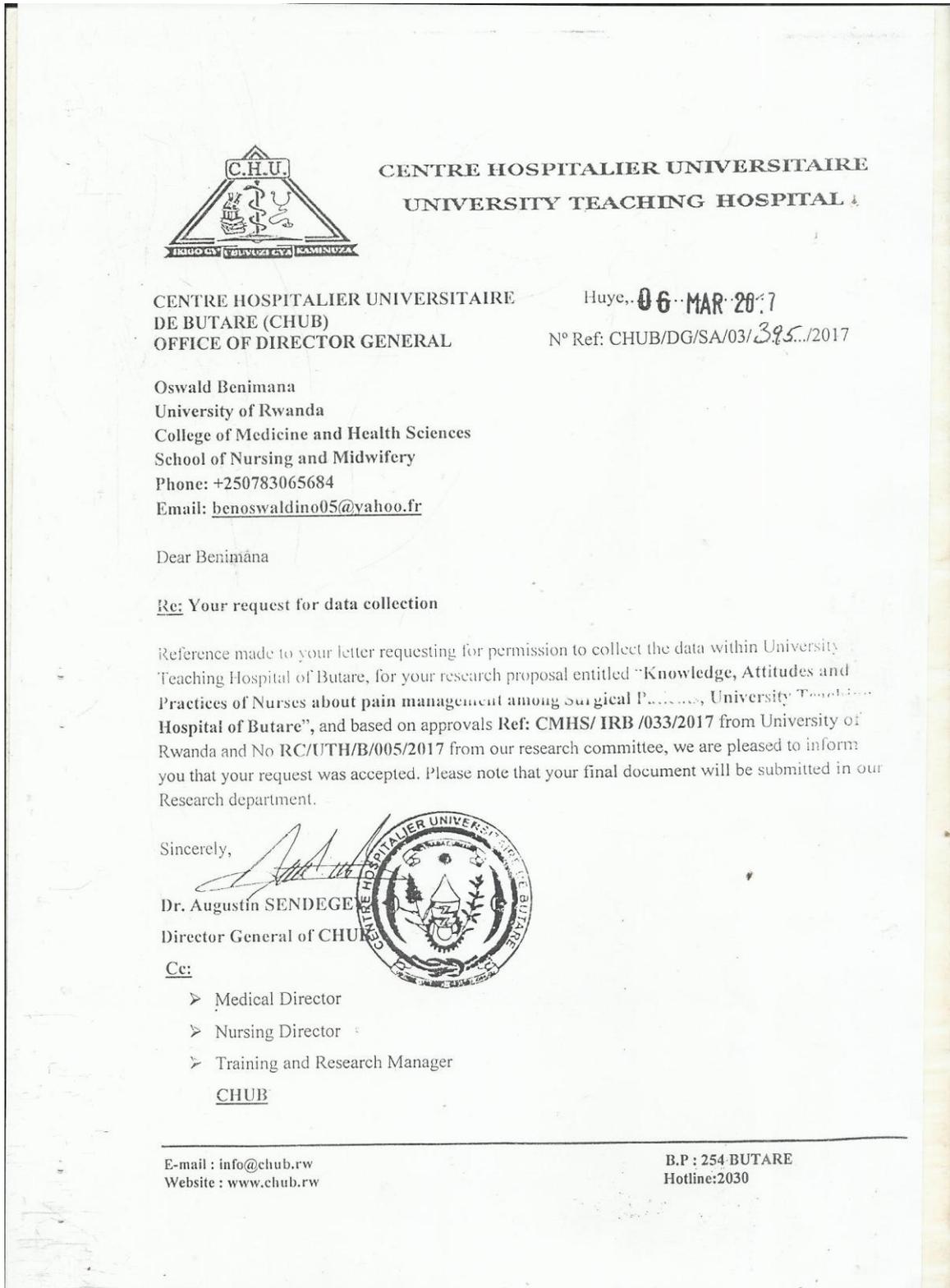
**Appendix F. Ethical clearance approval from IRB/CMHS**



**Appendix G. NIH (National Institutes of Health) Web-based training course  
"Protecting Human Research Participants" Certificate**



**Appendix H. Ethical clearance and approval for data collection from CHUB ethics committee**



## Appendix I. Request and approval of use of data collection tool, and the original data collection tools

- Ayla YAVA <ayla.yava@hku.edu.tr> 05/24/16 à 9:12 AM

À

- oswald benimana

Corps du message

I added the original NKASRP from the official web site. I hope it will be usefull for your study.

**Prof. Dr. Ayla YAVA, RN, PhD**  
**HKU, Sağlık Bilimleri Enstitüsü Müdürü (Director of Health Sciences Institute)**

Hasan Kalyoncu University  
Havalimanı Yolu 8. Km.  
Şahinbey/GAZİANTEP  
Tel: (0342) 211 80 80  
Fax: (0342) 211 80 81

2016-05-16 16:46 GMT+03:00 oswald benimana <[benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr)>:

Thank you so much Dear Ayla.

I will be in touch with you always and thank you so much for helping with quick reply.

Oswald BENIMANA  
MATRON OF SURGERY DEPARTMENT/CHUB  
Phone: (250)783065684, 722065684  
E-mail: [benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr)

"In Life You Have to Keep Trying, Every Thing Is Possible if You Believe In You"

-----  
En date de : Lun 16.5.16, Ayla YAVA <[ayla.yava@hku.edu.tr](mailto:ayla.yava@hku.edu.tr)> a écrit :

Objet: Re: REQUESTING FOR DATA COLLECTION TOOL AND PDF DOCUMENT

À: "oswald benimana" <[benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr)>

Date: Lundi 16 mai 2016, 13h19

Hi

Oswald, I am enclosing the article published in the journal and it includes the tool. If you need further

assistance please do not hesitate to contact me.  
Good luck and best  
wishes

Prof. Dr. Ayla  
YAVAHKU, Sağlık  
Bilimleri Enstitüsü Müdürü (Director of Health Sciences  
Institute)  
Hasan Kalyoncu Üniversitesi  
Havalimanı Yolu 8.  
Km. Şahinbey/GAZİANTEP Tel: (0342) 211 80 80 Fax: (0342) 211 80 81

2016-05-16 12:38 GMT+03:00  
oswald benimana <[benoswaldino05@yahoo.fr](mailto:benoswaldino05@yahoo.fr)>:

Dear AYL A,  
I am called Oswald BENIMANA, a student in Masters in  
medical-surgical nursing at University of Rwanda, School of  
nursing and midwifery. I am conducting my thesis  
about: "Nurses Knowledge and Attitudes Regarding Pain  
Management at University Teaching Hospital of Butare,  
Rwanda". I would like to request you to send me the PDF  
document and the tool you have used in your study "  
Nurses Knowledge and Attitudes Regarding Pain  
Management" so that I can use the documents in my  
research.

I assure you that you will be acknowledged in my research.

I am really interested in this because there is no pain  
management committee and even active palliative care  
committee at my hospital and also there are always  
Surgeons' complaints regarding administration of  
painkillers prescribed. Even the nurses always administer  
the analgesics according to patients request.

I am really waiting for your feedback and I assure you  
will be acknowledged.

Thx so much.

Oswald BENIMANA



July 2014

The "Knowledge and Attitudes Survey Regarding Pain" tool can be used to assess nurses and other professionals in your setting and as a pre and post test evaluation measure for educational programs. The tool was developed in 1987 and has been used extensively from 1987 - present. The tool has been revised over the years to reflect changes in pain management practice.

Regarding issues of reliability and validity: This tool has been developed over several years. Content validity has been established by review of pain experts. The content of the tool is derived from current standards of pain management such as the American Pain Society, the World Health Organization, and the National Comprehensive Cancer Network Pain Guidelines. Construct validity has been established by comparing scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise. Test-retest reliability was established ( $r > .80$ ) by repeat testing in a continuing education class of staff nurses ( $N=60$ ). Internal consistency reliability was established ( $\alpha > .70$ ) with items reflecting both knowledge and attitude domains.

Regarding analysis of data: We have found that it is most helpful to avoid distinguishing items as measuring either knowledge or attitudes. Many items such as one measuring the incidence of addiction really measures both knowledge of addiction and attitude about addiction. Therefore, we have found the most benefit to be gained from analyzing the data in terms of the percentage of complete scores as well as in analyzing individual items. For example, we have found it very helpful to isolate those items with the least number of correct responses and those items with the best scores to guide your educational needs.

Enclosed for your use is a copy of our instrument and an answer key. You may use and duplicate the tool for any purpose you desire in whole or in part. References to some of our studies which have included this tool or similar versions are included below. We have received hundreds of requests for the tool and additional use of the tool can be found in other published literature. We also acknowledge the assistance of several of our pain colleagues including Judy Paice, Chris Pasero, and Nessa Coyle in the revisions over the years. If using or publishing the tool results please cite the reference as "**Knowledge and Attitudes Survey Regarding Pain**" developed by **Betty Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN, (<http://prc.coh.org>), revised 2014.**

We hope that our tool will be a useful aid in your efforts to improve pain management in your setting.

Sincerely,

Handwritten signature of Betty R. Ferrell in cursive.

Betty R. Ferrell, RN, PhD, FAAN  
Research Scientist

Handwritten signature of Margo McCaffery in cursive.

Margo McCaffery, RN, MS, FAAN  
Lecturer and Consultant

7/14

References:

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**Knowledge and Attitudes Survey Regarding Pain**

**True/False – Circle the correct answer.**

- T F 1. Vital signs are always reliable indicators of the intensity of a patient's pain.
- T F 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.
- T F 3. Patients who can be distracted from pain usually do not have severe pain.
- T F 4. Patients may sleep in spite of severe pain.
- T F 5. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.
- T F 6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.
- T F 7. Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.
- T F 8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.
- T F 9. Opioids should not be used in patients with a history of substance abuse.
- T F 10. Elderly patients cannot tolerate opioids for pain relief.
- T F 11. Patients should be encouraged to endure as much pain as possible before using an opioid.
- T F 12. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.
- T F 13. Patients' spiritual beliefs may lead them to think pain and suffering are necessary.
- T F 14. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.
- T F 15. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.
- T F 16. Vicodin (hydrocodone 5 mg + acetaminophen 300 mg) PO is approximately equal to 5-10 mg of morphine PO.
- T F 17. If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.
- T F 18. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.
- T F 19. Benzodiazepines are not effective pain relievers and are rarely recommended as part of an analgesic regimen.
- T F 20. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.
- T F 21. The term 'equianalgesia' means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.
- T F 22. Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression.

Multiple Choice – Place a check by the correct answer.

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is
- a. intravenous
  - b. intramuscular
  - c. subcutaneous
  - d. oral
  - e. rectal
24. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is
- a. intravenous
  - b. intramuscular
  - c. subcutaneous
  - d. oral
  - e. rectal
25. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?
- a. codeine
  - b. morphine
  - c. meperidine
  - d. tramadol
26. A 30 mg dose of oral morphine is approximately equivalent to:
- a. Morphine 5 mg IV
  - b. Morphine 10 mg IV
  - c. Morphine 30 mg IV
  - d. Morphine 60 mg IV
27. Analgesics for post-operative pain should initially be given
- a. around the clock on a fixed schedule
  - b. only when the patient asks for the medication
  - c. only when the nurse determines that the patient has moderate or greater discomfort
28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is
- a. less than 1%
  - b. 1-10%
  - c. 11-20%
  - d. 21-40%
  - e. > 41%
29. The most likely reason a patient with pain would request increased doses of pain medication is
- a. The patient is experiencing increased pain.
  - b. The patient is experiencing increased anxiety or depression.
  - c. The patient is requesting more staff attention.
  - d. The patient's requests are related to addiction.
30. Which of the following is useful for treatment of cancer pain?
- a. Ibuprofen (Motrin)
  - b. Hydromorphone (Dilaudid)
  - c. Gabapentin (Neurontin)
  - d. All of the above
31. The most accurate judge of the intensity of the patient's pain is
- a. the treating physician
  - b. the patient's primary nurse
  - c. the patient
  - d. the pharmacist
  - e. the patient's spouse or family

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32. Which of the following describes the best approach for cultural considerations in caring for patients in pain:
- a. There are no longer cultural influences in the U.S. due to the diversity of the population.
  - b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
  - c. Patients should be individually assessed to determine cultural influences.
  - d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).
33. How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem?
- < 1%                       5 - 15%                       25 - 50%                       75 - 100%
34. The time to peak effect for morphine given IV is
- a. 15 min.
  - b. 45 min.
  - c. 1 hour
  - d. 2 hours
35. The time to peak effect for morphine given orally is
- a. 5 min.
  - b. 30 min.
  - c. 1 - 2 hours
  - d. 3 hours
36. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:
- a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.
  - b. Impaired control over drug use, compulsive use, and craving.
  - c. The need for higher doses to achieve the same effect.
  - d. a and b
37. Which statement is true regarding opioid induced respiratory depression:
- a. More common several nights after surgery due to accumulation of opioid.
  - b. Obstructive sleep apnea is an important risk factor.
  - c. Occurs more frequently in those already on higher doses of opioids before surgery.
  - d. Can be easily assessed using intermittent pulse oximetry.

**Case Studies**

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

**Directions:** Please select one answer for each question.

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

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

0    1    2    3    4    5    6    7    8    9    10

-----

No pain/discomfort Worst  
Pain/discomfort

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

- 1. Administer no morphine at this time.
- 2. Administer morphine 1 mg IV now.
- 3. Administer morphine 2 mg IV now.
- 4. Administer morphine 3 mg IV now.

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

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

0    1    2    3    4    5    6    7    8    9    10

No pain/discomfort

Worst  
Pain/discomfort

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

- 1. Administer no morphine at this time.
- 2. Administer morphine 1 mg IV now.
- 3. Administer morphine 2 mg IV now.
- 4. Administer morphine 3 mg IV now.

**Answer Key**

**Knowledge and Attitudes Survey Regarding Pain**

**True/False – Circle the correct answer.**

- F 1. Vital signs are always reliable indicators of the intensity of a patient's pain.
- F 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.
- F 3. Patients who can be distracted from pain usually do not have severe pain.
- T 4. Patients may sleep in spite of severe pain.
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- F 12. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.
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- T 20. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.
- T 21. The term 'equianalgesia' means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.
- T 22. Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression.

7/14

Answer Key

Knowledge and Attitudes Survey Regarding Pain

Multiple Choice – Place a check by the correct answer.

23. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is  
 a. intravenous  
 b. intramuscular  
 c. subcutaneous  
 d. oral  
 e. rectal
24. The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset, such as trauma or postoperative pain is  
 a. intravenous  
 b. intramuscular  
 c. subcutaneous  
 d. oral  
 e. rectal
25. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?  
 a. codeine  
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 c. meperidine  
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28. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is  
 a. less than 1%  
 b. 1-10%  
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 d. 21-40%  
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29. The most likely reason a patient with pain would request increased doses of pain medication is  
 a. The patient is experiencing increased pain.  
 b. The patient is experiencing increased anxiety or depression.  
 c. The patient is requesting more staff attention.  
 d. The patient's requests are related to addiction.
30. Which of the following is useful for treatment of cancer pain?  
 a. Ibuprofen (Motrin)  
 b. Hydromorphone (Dilaudid)  
 c. Gabapentin (Neurontin)  
 d. All of the above



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

- 1. Administer no morphine at this time.
- 2. Administer morphine 1 mg IV now.
- 3. Administer morphine 2 mg IV now.
- 4. Administer morphine 3 mg IV now.

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

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

0    1    2    3    4    5    6    7    8    9    10

No pain/discomfort

Worst

Pain/discomfort

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

- 1. Administer no morphine at this time.
- 2. Administer morphine 1 mg IV now.
- 3. Administer morphine 2 mg IV now.
- 4. Administer morphine 3 mg IV now.

### Barriers to Optimal Pain Management Survey

C. Vincent

Below are some barriers to optimal pain management that have been identified previously by Health Care Professionals

On a scale of 0 to 10, with 0 being "Not a barrier" and 10 being "A major barrier" please **circle** the number that best rates these barriers to **your** optimal pain management of children over the past year.

**1. My knowledge of pain management**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**2. My ability to assess pain**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**3. My concern of a child becoming addicted**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**4. My concern about side effects of medications (other than addiction)**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**5. My concern about children becoming tolerant to analgesics**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**6. Competing demands on my time**

0 1 2 3 4 5 6 7 8 9 10  
Not a barrier A major barrier

**7. Low priority given to pain management by medical staff**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**8. Low priority given to pain management by nursing staff**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**9. Low priority given to pain management by nursing management**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**10. Inadequate or insufficient physician medication orders**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**11. Children's reluctance to report pain**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**12. Children's reluctance to take pain medications**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier

**13. Parents' reluctance to have children receive medication**

0	1	2	3	4	5	6	7	8	9	10
Not a barrier										A major barrier