ASSESSMENT OF NURSES' KNOWLEDGE AND PRACTICES TOWARDS PAIN ASSESSMENT IN CRITICALLY ILL PATIENTS AT CHUK (2016-2017)

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Masters Level in NURSING SCIENCES

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By

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A. DECLARATION

I do hereby declare that this Project with title: Assessment of nurses' information and practices towards pain in seriously ill patients at CHUK, submitted in partial fulfilment of the requirement for Masters degree in Nursing sciences ,tract of critical care and Trauma at UR/ CMHS Nyarugenge Campus, 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.

TUYISHIMIRE Marie Louise

B. DEDICATION

To the supreme God who enabled us to accomplish this work

To my supervisors, Prof Bhengu BUSISIWE, Mrs Renee Puyburn, Mrs MUSABIREMA Priscilla; RHH /RWANDA, Who have provided this program of Masters in nursing in Rwanda.

My appreciation is also offered to my best friend, parents, relatives and others friends who provided help to accomplish this work,

To my colleagues for moral and spirit support.

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D. SUMMARY

Critically ill patients have the habit to develop moderate to severe pain related to trauma or recent surgery, which reduces their well being. When they are ineffectively treated, acute pain can be complicated into severe pain including the development of chronic pain syndromes. Pain is the principal symptom that leads people to seek health care. Many disciplines are involved in pain assessment and management; however, nurses play a crucial role in pain assessment, relief and evaluation of pain.

Many critically ill adult patients experience significant pain during hospitalization. In the intensive care unit (ICU), for example, more than 30% have significant pain at rest, and more than 50% have significant pain during routine care, such as turning, endotracheal suctioning, and wound care (Herr & Mcaffery 2011). Similar to other aspects of care, adequate pain management is of particular importance to ICU and ER patients (Onwong, 2014), to achieve ultimate comfort.
Methodology: descriptive cross-sectional study design was used. The study used a quantitative, convenient methods have been used; data was analyzed using IBM SPSS statistic 20. Results were abridged using frequencies and percentages, and presented using figures, tables and text, cross tabulation was made to see the correlation between data.
Results presentation and discussion: the results have been presented in tables,

The total score knowledge is on the mean of 98%, 58 out of 61 participants have got the knowledge beyond 14 to 26 of mean. And the total marks were 26, only 2out of 26 have got under 13 which considered as the low marks.

The majority of respondent (67.2%) do not have adequate current knowledge on pain assessment, only 32.8% have said that they have adequacy of current knowledge on pain assessment. The majority (86.9%) assess that patients are able to communicate; in addition (86.3%) said that they use pain assessment tools. Majority of respondents (68.9%) did not received education on pain assessment and management.

The majority of respondents 78% have the low practices scores as 44 out 57 of respondents have the marks which are under 18 out 35 marks, only 22% have got the marks beyond 18 out 35.

Conclusion and recommendations: Pain assessment and management of critically patients is one of the responsibilities of a nurse. Nurses of CHUK have information on pain assessment but majority of them (67.2%) do not have adequate current knowledge on pain assessment. Nurses know very well the importance of using an assessment tool however few (44%) of them do not consider pain assessment tool during the management of the patients.

There is need to continue to increase professional development on pain assessment, training and continuous training are need so that nurses have full information on pain assessment and management.

The ministry of education and health have to have to ensure that the policy on pain assessment and management is strengthened and well known.

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F. LIST OF SYMBOLS AND ABBREVIATIONS/ACRONYMS

CHUK: Centre Hospitalier de Kigali.

EDs: Emergency Departments

ICUI: Intensive care unit

MOH: Ministry of Health in Rwanda

RWF**:** Rwandan francs

PRN: as needed

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CHAPTER 1: INTRODUCTION

1.1. Introduction

Nurses working in Emergency Room (ER) and Intensive care unities (ICU) meet every day critically ill patients suffering from pain. When pain is not well assessed it can lead to patients discomfort and delay patients recovering. This study is intended to assess nurses' knowledge and practices towards pain assessment in critically ill patients at CHUK in ICU and ER

1.2 Background to the study

It has been seen that, critically ill patients experience simple to extreme acute pain related to trauma or recent surgery, which reduces their comfort level. When insufficiently, acute pain can lead to dangerous physiological and psychosomatic complication including the development of chronic pain syndromes (Craig, 2014). The principal role of nurse working in critical care services is to ensure patient are without pain, which is impossible if the patients experience pain, without adequate control, during their stay in ICU and ER.

Pain in the critically ill can be grouped as acute or chronic. Onwong (2014) define acute pain as having a known source and can be resolved within a given period, whilst chronic pain is caused by physiological mechanisms, which are not well understood and may last for long periods. Most critically ill patients experience acute pain as it has an identified or known cause, for instance pain experienced during endotracheal suctioning is expected to end when the procedure is over (Carr, 2000).

Many studies have found that ICU patients are likely to have pain during admission, by virtue of their illness pattern (Onwong,2014). Therapeutic interventions and routine procedures are subjects key to be performed. Sometimes a patient experiences pain from different sources presenting a challenge for Intensive Care nurses, depending on the individual's condition. Other causes of pain include medico-surgical conditions treated in ICU such as myocardial infarction,

thoracic related conditions, angina, neuro-surgical conditions, multiple trauma conditions and extensive burns.

Pain can compromise recovery and negatively affect both morbidity and mortality because of such effects. The delayed recovery of these patients results in increased demand on the hospital resources. Increasing evidence points to the development of chronic pain syndromes in individuals (both adult and paediatric) where acute pain is unrelieved because it elicits pathophysiologic neural sensitization, including peripheral and central neurons of the nervous system (Kizza , 2012).

Some barriers have been identified in pain assessment and management which are knowledge deficits regarding pain assessment and management principles, failure to assess and acknowledge the existence of pain, personal and cultural bias, and communication difficulties between the patient and the health-care team. These barriers, contribute considerably to suboptimal pain management among critically ill patients (Craig, 2014).

The study conducted by Kizza (2012) in Uganda shows that there was a poor documentation of pain assessment and management reported by more than three quarters (78%) of nurses as a barrier to pain assessment and management. This may be attributed to lack of a designated area for charting pain and low priority set on pain assessment. The low priority set on pain may be reflected by the findings showing that almost half of the nurses (47%) who did not document assessment findings said that it is not part of routinely documented data. In addition to this, almost all nurses (96%) reported that pain assessment findings are not discussed during nurse –to – nurse reports.

This is supported by another study carried out in Tanzania which results show that there is no documentation for pain assessment or reassessment at Emergency Department. Slightly above half (54%; 135/250) of patients were not given analgesics (Haonga et al. 2011). Another study performed in Rwanda on management of pain in post- operative patients also found some challenges such as on-the-job training, use of protocols, routine pain assessment, and participation in resource allocation decisions (Johnson et al. 2015)

The results of American Journal of Critical Care show that Pain documentation in medical files is incomplete or inadequate. The lack of a pain assessment tool may contribute to this situation (Georgiou et al. 2015). Research is still needed to investigate assessment of nurses' knowledge and practices towards pain assessment in critically ill patients. Therefore, this study will be conducted in Rwanda at CHUK in ICUs and ER departments, to provide more information on how pain is assessed by nurses working in those units.

1.3 Problem Statement

Many critically ill adult patients experience significant pain during hospitalization. In the intensive care unit (ICU), for example, more than 30% have significant pain at rest, and more than 50% have significant pain during routine care, such as turning, endotracheal suctioning, and wound care (Herr & Mccaffery 2011). Similar to other aspects of care, adequate pain management is of particular importance to ICU and ER patients as cited by Onwong (2014), to achieve ultimate comfort.

Nurses have the greatest responsibility of assessing critical care patients' pain, as they are the most proximal in care; they continuously make decisions relating to the patients' pain intensity and assess the need for analgesia (Onwong & Health 2014), as said by (Naser et al, 2005); pain assessment and management of critically patients is one of the critical responsibilities of a nurse, despite the availability of effective analgesics and new technologies in drug administration, studies continue to demonstrate a suboptimal pain management in the hospital. Regular intervals of pain assessment help establish the presence of pain, therapeutic effectiveness, any side effects and need for dose adjustment. Observations on nurses' management of pain appear to show that there is little prior assessment of pain as well as proof of documentation of pain assessment and intervention strategies. Therefore there could be problems related to knowledge and practice regarding pain assessment.

Little is known about nurses' knowledge and practice about pain assessment, even though some of the research conducted on pain assessment in Rwanda did not give access on their results, there is need to make a study on assessment of nurses' knowledge and practices towards pain

assessment in critically ill patients at CHUK in ICU and ER and give information on pain assessment.

1.4. The aim of the study

This study focuses on pain assessment as independent intervention. It aim is to describe information on nurses' knowledge and practice towards pain assessment in CHUK ICU and ER.

1.5 Objectives

1.5.1 Main Objective

To assess nurses' knowledge and practices towards pain assessment in critically ill patients at CHUK.

1.5.2 Specific Objectives

1.5.1. To examine the level of knowledge related to pain assessment among nurses caring for critically ill patients at CHUK.
1.5.2. To determine pain assessment practices among nurses caring for critically ill patients at CHUK.
1.5.3. To identify factors associated with pain assessment among nurses caring for critically ill patients at CHUK.

1.6 Research questions

1.5.1 What is the level of knowledge related to pain assessment among nurses caring for critically ill patients at CHUK?

1.5.2. What are the pain assessment practices among nurses caring for critically ill patients at CHUK?

1.5.3 What are factors associated with pain assessment among nurses caring for critically ill patients at CHUK?

1.7 Significance of the study

Significance to the nursing profession and nursing practice: The findings of this study will contribute towards strengthening the existing body of nursing knowledge regarding pain assessment. Therefore this study is significant to nursing as a discipline. With the identified gaps in knowledge and practice regarding pain assessment by nurses, the hospitals may now develop strategies to strengthen the areas of weakness among nurses. This makes the study significant to nursing practice.

Significance to nursing education: Nurse Educators will use the study findings to improve the existing content for instruction of student nurses as well as trained nurses through in-service training programs that result in the awarding of CPDs.

Significance to nursing research the results of this study can be used for further research using bigger populations and multiple sites to enhance generalizability of the findings. In addition, since the overall pain assessment practice is low, there is need for further research to determine the factors influencing the poor practice when knowledge is at acceptable levels.

Personal interest: As critical care nurse, this study generates evidence about information on strategies to improve pain assessment of pain in critically ill patients.

Scientific interest: This study is a resource for further researches in the same domain and it will help researchers, medical scientists and ministry of health to do further research on pain assessment.

The Ministry of health: Based on the findings, strategies to improve the knowledge and practices of pain assessment among nurses will be designed, implemented and evaluated ultimately reducing or preventing patients' suffering through improved nursing practice. Also protocols and policy guidelines may be formulated to improve nursing practice. Approaches to strengthen enablers and reduce identified barriers may be implemented. This study help CHUK and other Rwandan hospital to gain information that may be necessary in better management of pain, and improve the comfort of critically ill patients.

1.8 Definitions of Concepts

Pain: Is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (MOH, 2012). Pain is an individual and subjective experience modulated by physiological, psychological and environmental factors such as previous events, culture, prognosis, coping strategies, fear and anxiety (Rwanda, 2012).

Intensive care unit: The specialized care of patients whose conditions are life-threatening and who require comprehensive care and constant monitoring, usually in intensive care units (Medicine Net, 2016).

Emergency Room: The emergency room is the room or department in a hospital where people who have severe injuries or sudden illnesses are taken for emergency treatment. (Collins, 2010)

Critical Care Nursing

Critical care nursing is that specialty within nursing that deals specifically with human responses to life-threatening problems (American Association of Critical-Care Nurses, 2016)

A critical care nurse

A critical care nurse is a licensed professional nurse who is responsible for ensuring that acutely and critically ill patients and their families receive optimal care (American Association of Critical-Care Nurses, 2016)

A Critically Ill Patient

Critically ill patients are defined as those patients who are at high risk for actual or potential life-threatening health problems. The more critically ill the patient is, the more likely he or she is to be highly vulnerable, unstable and complex, thereby requiring intense and vigilant nursing care (Comeau et al. 2015).

1.9. Conclusion to chapter one

Chapter on give a details on the summary of the in general, by reading chapter on , individual can know what the study mean according to the background of the study, problem statement, study's objectives, and definition of key terms.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Critically ill patients experience discomfort when having pain. Kolcaba, Tilton & Drouin (2006) defined comfort as a personal holistic enhanced feeling of well-being with a sense of being strengthened. One of the major stressors, or experiences, that alter patients' comfort in the Intensive Care Unit (ICU) is pain in whatever intensity: mild, moderate or severe. The pain perception in patients is diverse and may be altered by factors such as culture, environment, mood, pathology and experience (Morton & Fontaine, 2013).

2.2 Theoretical Literature

2.2.1 Expected Practice and Nursing Actions

American Association of Critical Care Nurses (2013) has given guidelines on pain assessment:

1. Attempt to obtain the patient's self-report of pain using validated pain assessment tools or simple questions. (Level B)

• Ensure your unit has implemented a pain assessment policy for all critically ill adults, using validated tools that are appropriate to each patient's capacity to communicate.

• Teach patients to use self-report pain scales and communicate in verbal and nonverbal ways, such as numerical rating scales, pointing, and head nodding.

• Perform and document pain assessments routinely, including a baseline evaluation at the beginning of shifts, evaluations during activities or procedures known to be painful, and before and after administration of analgesics. Communicate assessments during patient handoffs.

2. Perform a pain assessment for critically ill adults who are unable to self-report, using a validated behavioral pain scale, such as the Behavioral Pain Scale (BPS) or the Critical Care Pain Observation Tool (CPOT). (Level B)

• Ensure that your unit provides education and clinical support on the use of behavioral pain scales and interpretation of the scores.

• Develop a pain management protocol that includes appropriate use of pharmacologic and non pharmacologic strategies according to pain assessment findings.

3. Avoid referring primarily to vital signs for pain assessment of critically ill adult patients. (Level C)

• Perform pain assessment with validated tools when significant fluctuations in vital signs are noted. Consider, as a proxy, asking someone who knows the patient well to identify behavior that indicate pain. (Level C)

• Encourage comprehensive pain assessments that combine different strategies, such as behavioral pain scales and proxy reporting by family members or caregivers (Americas Association of Critical -Care Nurses 2013)

Validated pain assessment tools should be used as standard practice when caring for critically ill adult patients. Among pain intensity scales, patients prefer the 0-10 Numeric Rating Scale in vertical and enlarged format (NRS-V); it is usually the best discriminative tool for use in the adult ICU (Chanques, 2007).Similarly, the 0-10 Faces Pain Thermometer shows reliable and valid results in adult patients in a postoperative ICU (Gélinas, 2007).

When a patient cannot concentrate on a pain intensity scale, ask a simple question about the presence of pain. A "yes" or "no" answer, indicated by head nodding, head shaking, or other signs, should be considered a valid self-report of pain (Herr K, 2011). In more unstable, critically ill adults, a self-report on the presence of pain is easier to obtain than a self-report on the intensity of pain (Gélinas, 2007).

2.2.2 Assessment by PQRST Checklist

This is Pain Assessment and Measurement checklist , recommended by the Ministry of H ealth in Rwanda, this assessment checklist may be used for general assessment or specifically for pain(MOH, 2012),

Also the MOH(2012) state other pain assessment tools which are **Verbal Descriptor Scale** (VDS) which Ranges pain on a scale between mild, moderate and severe(see them in appendix 3). **Wong-Baker Faces Scale** (FACES) Shows different facial expression where the client is asked to choose the face that best describes the intensity or level of pain being experienced; this works well with paediatric clients (see them in appendix 4). **Numeric Rating Scale** (NRS)

Rates pain on a scale from 0 to 10 where 0 reflects no pain and 10 reflects pain at its worst (see in appendix 5). **Visual Analog Scale** (VAS) Rates pain on a 10 cm continuum numbered from 0 to 10 where 0 reflects no pain and 10 reflects pain at its worst (Fig. 8-4).

Table 1.2.3.1 Pain Assessment and Measurement checklist

P=provocation and palliation	**Q**= Quality and Quantity	**R**= Region and Radiation	**S** = Severity and Scale	**T** = Timing and Type of Onset
What causes it? What makes it better? What makes it worse?	• How does it feel, look or sound? • How much of it is there?	• Where is it? • Does it spread?	• Does it interfere with activities? • How does it rate on a severity scale of 1 to 10?	•When did it begin? •How often does it occur? •Is it sudden or gradual?

2.3 Empirical, Critical Review and Research Gap identification

2.3.1 Knowledge related to pain assessment and management among critically ill patients

According to on pain management by Craig, the overall average correct response rate for the knowledge scale was 72.2%, indicating poor knowledge of pain management. Knowledge of pain management was significantly and negatively related to perceived barriers to pain management. Knowledge of pain was not correlated by nurses' education level or years of experience (Craig, 2014)

Naser, Sinwan, and Bee (2005) used a descriptive study to investigate the pain management knowledge of registered nurses in a restructured hospital, among intensive care nurses to establish if they had a better knowledge of pain management than nurses from other units. Data was collected using a convenience sample of 237 registered nurses in a restructured hospital. The questionnaire used was the Nurses' Knowledge and Attitude Survey Regarding Pain. A

total of 198 questionnaires were returned, giving a response rate of 84%. A passing score on the survey was noted to be 80%. The overall general knowledge on pain assessment was poor. Nurses with longer working experience did not score better than those with shorter working experience. Education level also did not show a significant difference. Intensive care nurses scored better, likely due to the exposure to different pain control methods. In general, the findings implicated a strong need to provide more education on pain management for nurses.

Wang and Tsai (2010) used a cross-sectional study to explore nurses' knowledge and barriers regarding pain management in intensive care units. A total of 370 intensive care nurses were recruited from 16 hospitals chosen by layered sampling across Taipei County in Taiwan. Data was collected on nurses' knowledge of pain management using the Nurses' Knowledge and Attitudes Survey-Taiwanese version, on perceived barriers to pain management using a researcher-developed scale, and on background information. The overall average correct response rate for the knowledge scale was 53·4%, indicating poor knowledge of pain management.

More than a quarter of the participants (35.5%) did not know that assessing for pain among sedated patients is important, majority of the participants knew that pain assessment tool (90%), assessment and documentation (92.9%) of pain are important. Almost three quarters 125 (73.5%) felt that their knowledge is not adequate and only 45 (26.5%) felt that it is adequate. More than a quarter of the participants 52(30.6%) had never had any training on pain assessment and management. Of the 118 participants who had received some training, majority 99 (83.9%) were not satisfied with the training. Only 19 (16.1%) were satisfied with the training they received, majority of the participants had never had training on; pain physiological mechanisms (74.7%), pain assessment methods and tools in critically ill patients (72.9%), practice recommendations/guidelines (78.8%) and physiological consequences of unrelieved pain (60.6%). Of the 170 participants, 155 (91.1%) had never read any guidelines of pain assessment and management (Kituyi et al. 2012)

Al-Shaer, Hill, and Anderson (2011) used a non-experimental, descriptive study to investigate nurses' knowledge of pain assessment and interventions. A convenience sample of 129 registered nurses participated from 10 separate nursing units in a Midwestern metropolitan hospital. Data was collected using a modified-with-permission version of the Nurses' Knowledge and Attitude Survey Regarding Pain (NKASRP) and a demographic tool developed for this study. Out of a possible 32 points, the average knowledge score was 25.9. Overall, nurses continue to demonstrate inadequate knowledge of pain assessment and pain management interventions. Although the results of this study indicated relatively high knowledge scores, some nurses were not prepared adequately to care for patients who experience pain. Knowledge of pain management principles and interventions were insufficient.

Kituyi (2011) in the study on postoperative pain management: clinicians' knowledge and practices on assessment and measurement at Moi teaching and referral hospital have also found a result on nurses' knowledge about pain; he found that fifty seven percent of the participants indicated that they had inadequate knowledge regarding the tools that may be employed for pain assessment and measurement. Those who had never had any formal teaching in relation to pain evaluation and management constituted 21% (Kituyi et al. 2012)

2.3.2 Practices related to pain assessment among nurses for critically ill patients

The study made by Kizza (2012) in Uganda, on assessment of practice related to pain assessment found that 153 (90%) reported that they assess for pain among adult patients who are able to report pain while 17(10%) did not. Responses to an open-ended question revealed that among those who reported that they did not assess for pain, the commonest reason for not assessing was because patients are able to report pain 9(53%); so there is no need to assess for it. Other reasons included: lack of guidelines for pain assessment4 (24%), lack of pain assessment tools 3(18%) and heavy nursing workload 1(5%). Majority 147(96%) of the participants who assessed for pain did not use any pain assessment tools. Among those who reported to use a tool majority 5(83.3%) used it sometimes, which is 26 to 50% of the time. The tools used included; numerical rating scale, FACES and Visual analogue. Also she found that about the reason why nurses did

not the pain are lack of guidelines for pain assessment and management 3(9.4%), no need to document because patients can report pain 1(3.1%), lack of pain charts for documentation 19 (59.4%), pain assessment is not part of routinely documented data 15 (46.9%) and nursing workload 7(21.9%).

The majority of nurses had poor pain assessment practices. The most commonly performed pain assessment practices were documenting assessment findings, discussing pain assessment and management during nurse-to-nurse reports, and assessing for analgesics need before wound care. The main barriers to pain assessment were workload; lack of education and familiarity with assessment tools; poor documentation and communication of pain assessment priorities. The only reported enabler was physician's prescriptions for analgesia. Pain assessment practices were significantly associated with perceived workload and priority given to pain assessment (Kituyi et al. 2012, p.1)

2.3.2 Factors associated with pain assessment in critically ill patients

Wang and Tsai (2010) used a cross-sectional study to explore nurses' knowledge and barriers regarding pain management in intensive care units; The top barrier to managing pain identified by these nurses was 'giving proper pain medication needs the doctor's approval.' Knowledge of pain management was significantly and negatively related to perceived barriers to pain management. In addition, scores for knowledge and perceived barriers differed significantly by specific intensive care unit. Knowledge also differed significantly by nurses' education level, clinical competence level (nursing ladder), and hospital accreditation category. Results indicated an urgent need to strengthen pain education in these nurses. Also pain education should target knowledge deficits and barriers to changing pain management approaches for Taiwanese nurses in intensive care units.(Wang & Craig 2014)

Residents believed that although some pain management protocols have been developed, "they are not regularly employed". Others indicated that "they should be displayed on walls in all units (ICU, recovery room, wards) and clearly indicate the responsibilities of the different groups of personnel: nurses, technicians, anaesthesiologists and surgeons"(Johnson et al. 2015).

The lack of availability of pain assessment tools (17.8%, n=14), lack of a designated area for charting pain assessment (17.7%, n=14) and lack of protocols/ guidelines for pain assessment (16.9%, n=13) were considered the greatest barriers to pain assessment and management. Sedation was considered a barrier but less frequent (<50% of the time) (Onwong & Health 2014). The same factors have been seen in the study on pain assessment in critically ill patients The reasons for not documenting pain assessment were lack of guidelines (9.1%), lack of pain charts (59.4%), pain assessment not being part of routinely documented patient care data (46.9%) and patient load (21.9%). Other acute pain assessment practices that were mostly performed by nurses were discussing pain assessment and management during nurse-to-nurse reports (76.5%), assessing analgesics need before wound care (64.1%), agreeing with patients' statements about their pain (56.5%) and discussing pain scores and management during unit rounds (55.9%) (Kituyi et al. 2012)

Johnson (2015), conducted a study on perspectives, perceptions and experiences in postoperative pain management in developing countries: A focus group study conducted in Rwanda, have found that the responses were related to five general areas: general patient and medical practice management; knowledge base regarding postoperative pain management; pain evaluation; institutional/system issues related to protocol implementation; and perceptions about resource allocation. Within these areas, challenges (e.g., communication among stakeholders and with patients) and opportunities (e.g., on-the-job training, use of protocols, routine pain assessment, and participation in resource allocation decisions) were identified.

Elcigil (2011) investigated Nurses' Perceived Barriers to Assessment and Management of Pain in a University Hospital, using a self-report questionnaire. The study was answered by 114 nurses working at the internal medicine, oncology, and surgery clinics and revealed that the most commonly perceived barriers to pain management were system-related barriers. Lack of psychosocial support services and patient-to-nurse ratio received the highest ratings. Institutional and governmental attempts are needed to increase the number of nurses in the clinics and to establish support services. Nurse-related barriers were less perceived as an obstacle when compared with the other barriers. A small percentage of the nurses agreed that nurses' inadequate knowledge of pain management (10%) and nurses' indifference (8%) were barriers to pain

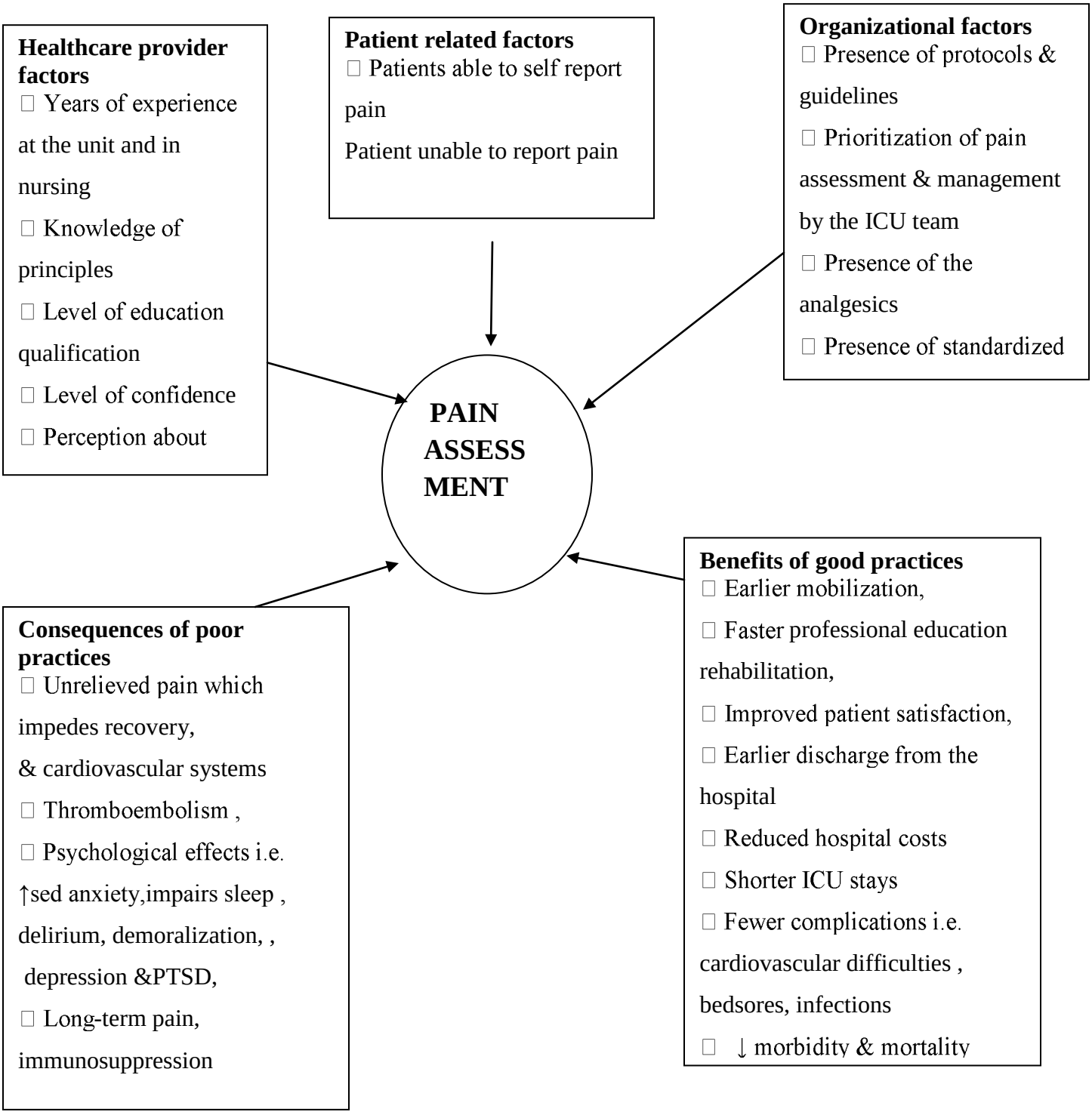
management. Inadequate time for health teaching with patients was agreed on by 65% of the nurses. Most commonly rated physician-related barriers were inadequate assessment of pain and pain relief by doctors (63%) and physicians' indifference (47%). Patients' difficulty with completing pain scales (56%) and consumers not demanding results (53%) were the most commonly reported patient-related barriers. A significant percentage of the participating nurses indicated that they had no idea about patient-related barriers.

According on the study conducted by Louise Rose (2012), which title was critical care nurses' pain assessment and management practices: a survey in Canada and she have founded in regards to education on pain assessment during professional development, pain assessment methods and tools was the topic covered for the greatest number of ICU nurses (522 of 796 nurses; 66%). Next, in order, were pharmacological pain management principles (518 of 799 nurses; 65%) and pain neuro-pathophysiology (504 of 794 nurses; 63%). Fewer nurses had education on practice recommendations (353 of 792 nurses; 45%), non pharmacological pain management (423of 799 nurses; 53%) and psychological consequences (443 of 795 nurses; 56%) of unrelieved pain(Rose et al. 2012).

2.4 Conceptual framework

Figure 1.2.3.1: Conceptual frame work

The research adapted the conceptual frame work developed by Irene Kizza which concerned with nursing' knowledge and practices about assessment of pain, enablers, barriers and consequences of pain assessment for critically ill patients


Healthcare provider factors
 Years of experience at the unit and in nursing
 Knowledge of principles
 Level of education qualification
 Level of confidence
 Perception about
Patient related factors
 Patients able to self report pain
Patient unable to report pain
Organizational factors
 Presence of protocols & guidelines
 Prioritization of pain assessment & management by the ICU team
 Presence of the analgesics
 Presence of standardized
PAIN ASSESS MENT
Consequences of poor practices
 Unrelieved pain which impedes recovery,
& cardiovascular systems
 Thromboembolism ,
 Psychological effects i.e. ↑sed anxiety,impairs sleep , delirium, demoralization, , depression &PTSD,
 Long-term pain, immunosuppression
Benefits of good practices
 Earlier mobilization,
 Faster professional education rehabilitation,
 Improved patient satisfaction,
 Earlier discharge from the hospital
 Reduced hospital costs
 Shorter ICU stays
 Fewer complications i.e. cardiovascular difficulties , bedsores, infections
 ↓ morbidity & mortality

This conceptual framework has four parts:

Healthcare provider factors by showing years of experience at the unit and in nursing, knowledge of principles **,** kevel of education qualification some information will be related on knowledge **,** level of confidence **,** perception about pain & opiods cultural issues continuous professional education, as this study is intended to assess nurses' knowledge, it will help in his study because it will come into demographic data which are essential to any study, no study can be performed without having any general information on respondents.

Patient related factors: Patients able to self report pain, patient unable to report pain, this is very important in this study on pain assessment, the study was working with patient able to communicate.

Organizational factors: Presence of protocols & guidelines**,** prioritization of pain assessment & management by the ICU team**,** presence of the analgesics**,** presence of standardized tools the organisations factors was used in conceptual framework to guide the researcher in enables factors that affecting pain assessment.

Consequences of poor practices Unrelieved pain which impedes recovery, & cardiovascular systems, thromboembolism , psychological effects i.e. increased anxiety, impairs sleep , delirium, demoralization, depression &PTSD, Long-term pain, immunosuppression, in this study the research need to find the information on consequences associated with bad management of pain, the conceptual framework on this point help to develop.

Benefits of good practices: Earlier mobilization, faster professional education rehabilitation, improved patient satisfaction, earlier discharge from the hospital Reduced hospital costs Shorter ICU stays Fewer complications i.e. cardiovascular difficulties , bedsores, infections decreased morbidity & mortality Less disability (pain with activities), the benefits will help in conclusions and recommendation by compelling with the consequences of poor assessment and management of pain.

2.5.Conclusion to chapter two

The chapter two has described the theory around pain assessment, study results on pain assessment and conceptual frame work on the topic adopted from the study conducted by Irene Kizza in Uganda on pain assessment in 2012.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter presents details of the research methods used in the study to collect and analyze data. It emphasizes on the research design, study population, study area, research tool, instrument for data collection, sampling methods, data collection procedure, study limitations and problems and ethical considerations.

3.2. Research approach

This research is a quantitative research. A quantitative approach was been chosen because it enables the researcher to collect numerical data and perform quantitative analysis using statistical procedures, in order to determine the level of knowledge and describe practices related to pain assessment for critically ill patients among nurses at CHUK Hospital in Emergency and ICU.

3.3. Research design

This study was using a descriptive cross-sectional study design. A cross-sectional design was the most appropriate design. This was because it was enabling the researcher to systematically determine and report the level of knowledge and practices just the way they are among a cross section of the nurses at one point in time.

3.4. Research setting

The Centre Hospitalier Universitaire de Kigali (CHUK), a public university hospital in Kigali, Rwanda located in Nyarugenge District, near Kigali Serena hotel, in Gitega sector. CHUK was built in 1918 and has 509 beds. Its main priorities are patient care, education, research and community service. This university teaching hospital, located in the centre of Kigali (District of Nyarugenge), is the main public health institution in Rwanda, and serves >1.2 million individuals from a primarily urban region. CHUK is one of four referral hospitals in Rwanda (the others include the Centre Hospitalier Universitaire de Butare in Butare [Faculty of Medicine; National University of Rwanda, University Laboratory], King Faisal Hospital in Kigali [public-

private hospital providing highly specialized services to private patients, patients with private insurance and patients referred from the other referral hospitals] and Rwanda Military Hospital). Patients in Rwanda are assessed through an organized network that includes local health districts, district hospitals and these four referral hospitals. CHUK is unique in that it is the only public general hospital serving a largely urban community located in Kigali. Even though Kanombe Miltary Hospital is also a public hospital which is located in Kigali city, CHUK is still a big referral hospital in Rwanda. The study will be based in Emergency and ICU where mostly critically ill patients are admitted and hospitalized.

3.5. Population

The study population of this study included nurses who are caring for critically ill patients in Emergency and ICU at CHUK. The nurses working in ER are 46 nurses and 21 nurses working in ICU, the ER and ICU are chosen because those are the units were critically ill patients are hospitalised mostly.

3.6. Sampling

The nurses who were available on the day of data collection in Emergency department and ICU in CHUK were the participants to this study.

3.6.1. Sampling strategy

The convenience sampling method was used. In convenience sampling, the participants are selected because they are accessible to the researcher on the day of data collection.

3.6.2. Sample size

The sample size was all nurses working in ER and ICU, therefore, the total number of nurses working in ICU and ER are 67 nurses.

3.7. Data Collection

3.7.1. Data Collection instruments

Quantitative data was collected using a questionnaire (see Appendix I). It was an instrument developed and piloted in five ICUs and re-evaluated by ten experts in pain, critical care and

research methodology in Canada (Rose et al, 2011). Test-retest reliability was evaluated by using the Cohen κ statistic; a value of 0.4 or greater was considered to represent moderate reported by the expert, also she had rated the instrument's clarity, content validity and comprehensiveness based on the method described by Burns and colleagues (2008). The tool has been used in Canada and found to be reliable (Rose et al. 2012). The researcher got permission to make modifications in the questionnaire to be relevant to the setting (see Appendix III). Specifically, the researcher modified the tool by changing the responses to some of the closed questions on practice and knowledge from the likert style (for example not at all, minimally, somewhat, moderately and extremely) to Yes or No format. Rearrangement of questions and dividing some into two parts was also done. The division of some questions was done in such a way that the participant needed to select either no or yes to continue or not with the second part. Questions about patients who are unable to self-report pain were removed as the researcher selected to first concentrate on pain assessment for patients who can report pain.

For both the knowledge and practice sections of the tool, scores were awarded. Highest scores were given for the best knowledge and practice. Score for knowledge ranged from 0 to 26, zero representing the lowest knowledge level. Scores were further categorized into low knowledge (0-13), moderate knowledge (14-19) and high knowledge (20-26). For practice scores, the range was 0 to 35. Low practice meant scores between 0and 17, moderate practice (18-27) and high practice (28-37).

A few open and closed questions were added. Since the tool was used in a setting different from Africa and with the modifications made, the researcher established the reliability and validity of the questionnaire. Internal consistency reliability was assessed by obtaining coefficient alpha (Cronbach's alpha).This test is used as the index to estimate the extent to which different subparts of the instrument were reliably measuring knowledge about pain assessment principles for critically ill patients. Internal consistency reliability was chosen because the measure of knowledge levels involved summing item scores (Polit & Beck, 2008). Data was collected by a single researcher. Same data was entered twice by two different individuals to ensure appropriate data consistency and quality. The researcher have been pre-test the instruments for

evaluation and refining among 10 nurses caring for critically ill patients at Rwanda Military Hospital in ER and ICU.

3.7.2. Data collection procedure

Convenient sampling method was used; in convenient sampling, the sampling methods the samples are selected because they are accessible to the researcher, also the variables are easy to recruit. After obtaining ethical clearance, the researcher have gone to the site and introduce herself to the Director of Research at CHUK and nurses in-charges of selected units. The researcher was made brief meetings with unit managers to explain the purpose and procedures of the study and obtain permission to conduct the study from them. Brief introduction to the prospective participants will be done at individual level and consent forms provided by the researcher to the eligible participants during day, evening and night shifts. The researcher was let the nurses have enough time to read the consent form and ask questions about the study. Signed consent forms have been gotten from the nurses willing to participate and then a copy of the questionnaire will be given to each. Each participant have been given time to fill the questionnaire and return it when filled. Filled questionnaires were checked for completeness and legibility by the researcher immediately and clarification sought when necessary. Data was collected over a period of one month.

3.8. Data analysis

Each completed questionnaire was checked for errors, completeness and legibility immediately and missing or unclear data retrieved from the participant. Filled questionnaires were stored safely in a cupboard under lock and key. Pre-coded data was directly entered onto a computer file to create a data set. For questions with possibility of more than one response, each response was coded as though the item was a separate question. Codes were assigned to the responses. Data from open-ended questions and other unstructured formats was coded after reviewing a sizable portion of data to understand the content. There after the researcher was using descriptive statistics (i.e. mean, standard deviation, etc.), graphs, tables, manual analysis of data, use of computer with named software (programmes) e.g. Excel, SPSS for management of data analyses,

in addition, the cross tabulation and Chi square test were done to determine the association between factors associated with pain assessment and demographic data.

3.9. Ethical considerations

The permission to conduct this research was guaranteed by UR/CMHS/Nyarugenge Campus and the CHUK. To participate in this research will be the full consent of participants. The consent form is written in simple English, and a copy of consent form will be presented to each participant and is attached in Appendix 2), it have been signed before participation in the study .The researcher was explaining to the respondents the objectives and the values of being taken as one of the participants. Confidentiality and honesty have been observed. The participant has rights of participants and right to withdraw any time, in the whole study if needed.

3.10. Data management

Filled questionnaires were stored safely in a cupboard under lock and key. Pre-coded data was directly entered into a computer file to create a data set. Data have been saved in computer and secured by a password which will only be known by the researcher. Data have been stored in both hard and soft copies, for example, soft copies using a password controlled personal computer. The data will be store in period of 5 years in soft ware. The data will continue to be stored as other researchers can use them in the future.

3.11. Data Presentation and Dissemination

Results will be presented in the report using descriptive statistics, text, frequency tables and figures.

A research report will be presented to CMHS/ Nyarugenge Campus the as partial fulfilment of the requirements for the award of Master's degree in nursing, track of critical care and Trauma Nursing. The results of the study will be communicated to CHUK and UR/CMHS and to the Ministry of Health in Rwanda. The researcher will hold a dissemination meeting with nurses at CHUK. Efforts will be made to publish the results in a peer reviewed scientific journal and make presentations at seminars, workshops and scientific conferences. Hard and soft copies will be availed to CMHS/ Nyarugenge Campus

3.12. Limitations and challenges

This study failed to capture all nurses as planned because some nurses were on leave. There were challenges in reaching those nurses who were on leave. This became a limitation because the sample size was cut down to 61.

3.13. Conclusion to chapter three

The chapter three emphasise on methodology, the researcher will use to have information on participant, the size, where the research will be conducted; as this research will be conducted at CHUK in ICU and ER, all available nurses in ER and ICU will be eligible to participate in this study on their choice. The prepared and pre-tested questionnaire will be administered to them, after data collection the filled questionnaire will be entered in computer using SPSS program, data analysing and presentation will be made into tables, chart and figures.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.0. Introduction

This part of research finding and discussion is going to respond on the research objectives which were to examine the level of knowledge related to pain assessment among nurses caring for critically ill patients at CHUK, to determine pain assessment practices among nurses caring for critically ill patients at CHUK, to determine the factors that promote pain assessment among nurses caring for critically ill patients at CHUK, to identify the barriers to pain assessment among nurses caring for critically ill patients at CHUK.

4.1. Demographic data

The table below show that the majority of respondents (67.2%) were working in Emergency room, most of them (59%) were female, with age between30-34 (45.9%). All respondents have been registered in Nursing Council; most of them (98.4) work in full time condition, and work in rotation shift, near a half of them (42.6%) have an experience in working which is between 6 to 10 years. The majority of respondents (85.2%) have been get diploma level of education.

Table 1: Demographic characteristics of respondents (N=61)

Variable	Frequency	Percentage
Working Unit		
ER	41	67.2
ICU	20	32.8
Sex		
Male	25	41
Female	36	59
Usual Shift Rotation		
Day only	2	3.3
Night only	1	1.6
Rotation Shift	58	95.1
Experience as a Registered Nurse		
Below 2 Years	13	21.3
2-5 years	16	26.2
6-10 years	26	42.6
Above 10 Years	6	9.8
Qualifications		
Certificate	1	1.6
Diploma	52	85.2
BSNS	7	11.5
Masters	1	1.6

4.2. Knowledge related to pain assessment

4.2.1 Distribution of participants by their knowledge on pain assessment concepts

The table below show that the provider of the most accurate rating of pain intensity is physicians on the rate of (39.3%), the second who provide the most accurate rating of pain intensity is nurses a on the rate of 34.4% of respondents, the relatives are not forgotten those provide information on the rate of (18%), patients did not show any things in rating. On the question asking on the important of a pain assessment TOOL, the majority of respondents (54.1%) find that is extremely important, (24.6%) of respondents find is moderately important, (16.4%) of respondents find it minimally important, (4.9%) find not at all important.

Majority of the participants knew that is important to assess for pain among; post operative patient (82%), medical (83.6.4%), patients with Glasgow Coma Scale < 8 (86.9%), trauma patients (86.9%), and Burns (85.2. %). More than a quarter of the participants (32.8%) did not know that assessing for pain among sedated patients is important.

Table 2: Participants' knowledge on pain assessment concepts (N=61)

Variables	Frequency N (61)	percentages
The provider of the most accurate pain intensity		
Relatives	11	18.0
Physicians	25	41.0
Nurses	24	39.3
Missing	1	1.6
Importance to assess pain for post-operative patients		
Yes	50	82.0
Non	11	18.0
Importance to assess pain for medical patient		
Yes	51	83.6
Non	10	16.4
Importance to assess pain for patients with GCS less than 8		
Yes	53	86.9
Non	8	13.1
Importance to assess pain for trauma patients		
Yes	53	86.9
Non	8	13.1
Importance to assess pain for burns patient		
Yes	52	85.2
Non	9	14.8
Importance to assess pain for end of life patient		
Yes	44	72.1
No	16	26.2
Missing	1	1.6
Importance to assess pain for patient receiving sedatives		
Yes	41	67.2
Non	20	32.8

4.2.2 Distribution of participants by other knowledge on pain assessment concept

The table 3 below show that nurses did not have enough information on assessment for the need of analgesic is important. More than a quarter of the participants did not know that assessment for the need of analgesics before the following procedures is important; repositioning (31.1%) , endo-tracheal suctioning (52.5%) , drain removal (47.5%), invasive line placement (67.2.%) and spontaneous breathing trials (77.0%)

Table 3: Distribution of participants by other knowledge on pain assessment concept

Variables	Frequency	Percent
Patient repositioning		
Yes	19	31.1
No	42	68.9
Endo-tracheal suctioning		
Yes	29	47.5
No	32	52.5
Wound Care		
Yes	42	68.9
No	19	31.1
Drain removal		
Yes	32	52.5
No	29	47.5
Invasive line placement		
Yes	19	31.1
No	41	67.2
Spontaneous breathing (weaning) trial		
Yes	13	21.3
No	47	77.0
Missing	1	1.6

4.2.3 Distribution of participants by adequacy of current knowledge on pain assessment

Table 4, show that the majority of respondent (67.2%) do not have adequate current knowledge on pain assessment, only 32.8% have said that they have adequacy of current knowledge on pain assessment.

Table 4. Distribution of participants by adequacy of current knowledge on pain assessment

Adequacy of current knowledge	Frequency	Percent
Yes	20	32.8
Non	41	67.2
Total	61	100.0

4.2.4 Knowledge scores of nurses related to pain assessment principles.

According to the statistics, the total score knowledge is on the mean of 98%, 58 out of 61 participants have got the knowledge beyond 14 to 26 of mean. And the total marks were 26, only 2out of 26 have got under 13 which considered as the low marks.

4.3. Practice related to pain assessment

4.3.1.Distribution of respondents by whether their assessment pain for patients able to communication

The results show that majority (86.9%) said that they assess that patients are able to communicate, as indicated in table below, also the majority (86.3%) said that they use pain assessment tools. The respondents have reported that they use a pain assessment tool on the rate of (86.3%), only (13.7%) did not use a pain assessment tool.

Table 5: Distribution of respondents by whether their assessment pain for patients able to communication (N=61)

Variables	Frequency	Percentage
Assessment of pain for patient able to communicate		
Yes	53	86.9
No	8	13.3
Use of pain assessment tool		
Yes	44	86.3
No	7	13.7

Table 6: Distribution of participants by other methods used to assess pain

Methods	Frequency	Percent
Observations	56	91.8
observe the client	1	1.6
patients expressions	1	1.6
the patient communication if he has pain or not	1	1.6
verbal expression / facial expression	1	1.6
Total	61	100.0

The majority of respondents (91.8%) who didn't use pain assessment tool observe the client, other methods used are patients expressions, patients communication if he has or not having pain, verbal expression, facial expression.

4.3.3 Distribution of participants by the way they use assessment tool.

Table 7, shows that on the frequency they use a pain assessment tool, a quarter often use a pain assessment tool (39.2%), (29.4%) of respondents sometimes use a pain assessment tool, (17.6%) seldom use a pain assessment tool, only 4% use a pain assessment tool routinely.
The majority of respondents (86.9%) said that they document findings after pain assessment, and (13.1%) did not document findings after pain assessment.

Table 7. Distribution of participants by the way they use assessment tool.

Frequency	Frequency	Percent
Seldom (1- 25%)	9	17.6
Sometimes (26 - 50%)	15	29.4
Often (51 - 75%)	20	39.2
Routinely (>75%)	4	7.8
Total	48	94.1
Missing	3	5.9
System		
Total	51	100.0

4.3.4 Distribution of participants by other practices related to pain assessment

The majority of respondents are above 60% on assessment and documentation of pain for patient able to report pain, and few below 30%.

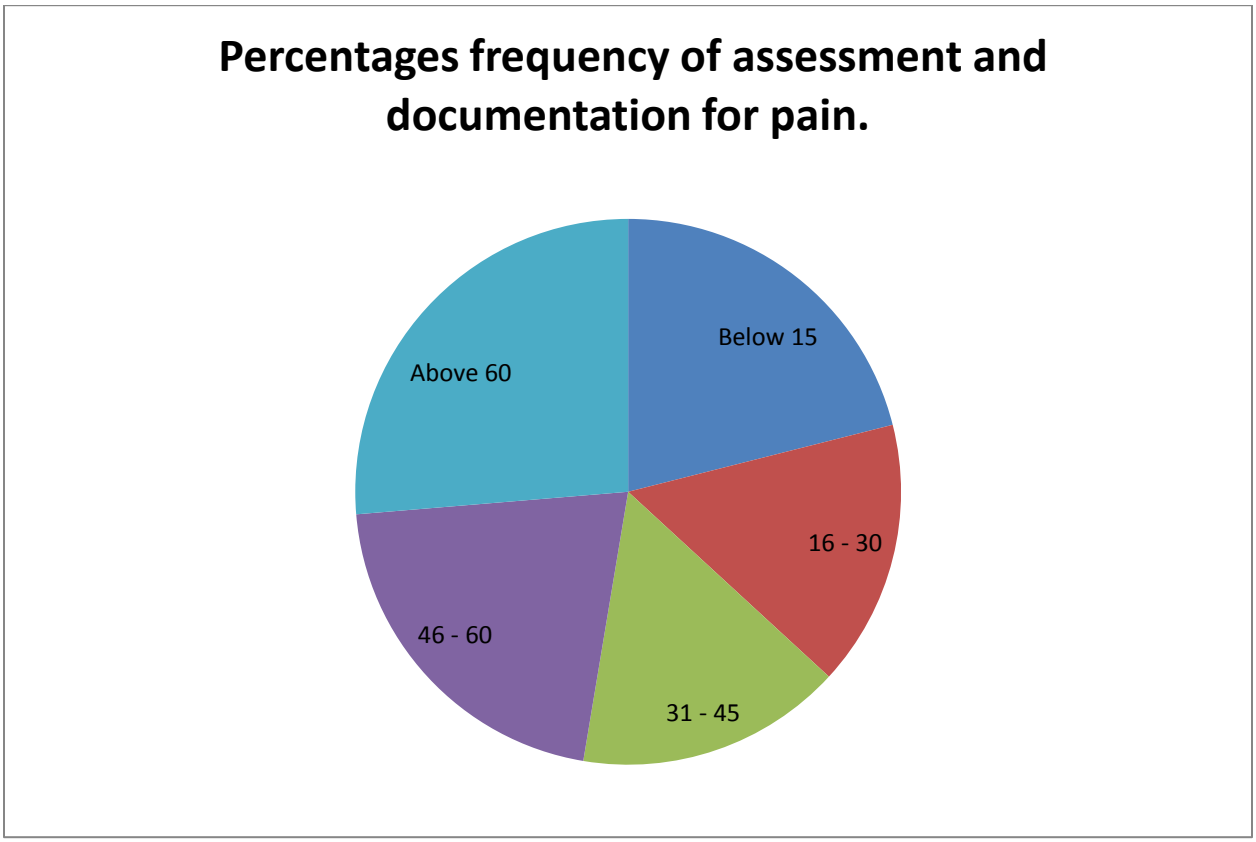


Figure 2. Distribution of participants by other practices related to pain assessment

4.3.5 Distribution of participants by other practices related to pain assessment

Table 10, show that the frequency they assess and document pain the majority said on 5-8 Hours the rate is (32.8%), the interval of 1-4 Hours the rate is (19.7%), those who record <1H the rate is (16.4%), prn is on the rate of (18%), those who never record the rate is on (3.3%)

Table 8: Distribution of participants by other practices related to pain assessment

Frequency (hours)	Frequency	Percent
<Q1H	10	16.4
Q1H - Q4H	12	19.7
Q5 - Q8H	20	32.8
Once Q12H Shift	6	9.8
Never	2	3.3
prn only	11	18.0
Total	61	100.0

4.3.6Distribution of participants by importance and documentation of pain.

Figure 3, show that a half (54.1%) said that it is extremely important of frequent assessment and documentation of pain in patients, (18%) find moderate important,(14.8%)find minimally important,(9.8%) find somewhat important and only (3.3%) find not at all important.

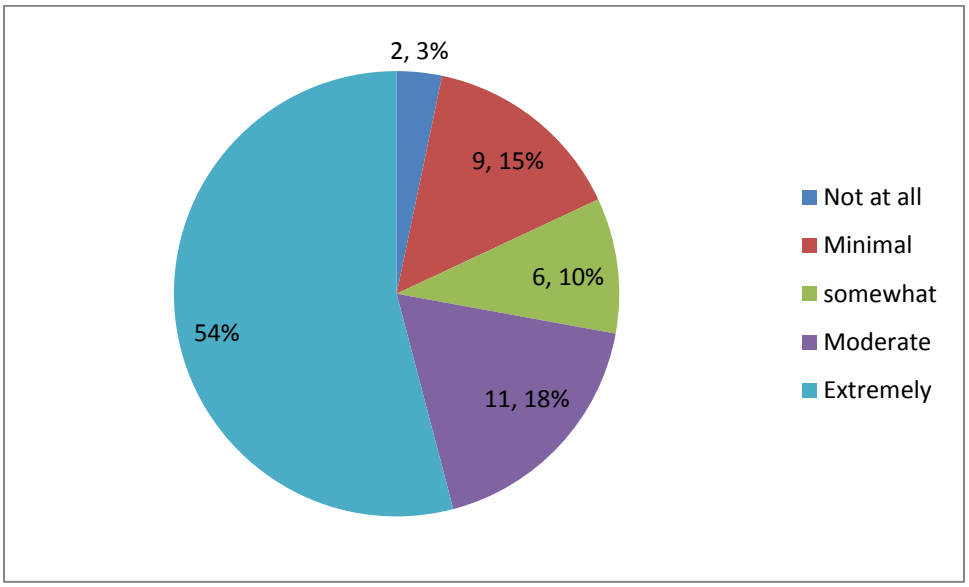


Figure 3 Importance of assessment and documentation of pain

4.3.7: Distribution of participants by other practices related to pain assessment

Table 9 shows that the majority of respondents (73.8%) discuss pain score and management during nurse to nurse report, only (26.2%) said that they do not discuss that. Almost a quarter (34.4%) of respondent did not discussed pain score and management during unity rounds, a half of respondents (49.2%) did not feel competent in effectively assessing patients for having pain. Also a half of respondents (50.8%) did not agree with patient's statements about their pain

Table 9: Distribution of participants' pain assessment practices (N=61)

VARIABLES	Frequency	Percent
Pain scores and management discussed during nurse-to-nurse report		
Yes	45	73.8
No	16	26.2
Pain scores and management discussed during unit rounds		
Yes	40	65
No	21	34.4
Total	61	100.0
Feel competent in effectively assessing patients for having pain		
Yes	31	50.8
No	30	49.2
Always agree with patient's statements about their pain		
Yes	30	49.2
No	31	50.8

4.3.7 Total practices score related to pain assessment

The majority of respondents 78% have the low practices scores as 44 out 57 of respondents have the marks which are under 18 out 35 marks, only 22% have got the marks beyond 18 out 35.

4.4. Perceived barriers to pain assessment and management.

4.4.1. Distribution of participants by perceived barriers to pain assessment and management.

As shown in Table 12 below, majority of the participants reported the following as barriers to pain assessment ; nursing workload (85.2%), lack of availability of assessment tools (62.3%), lack of education on assessment tools (67.2%) , lack of familiarity with tools (55.7%) , lack of protocols and guidelines on pain assessment and management (54.1%), poor documentation of pain assessment and management (50.8%) and poor communication of pain assessment priorities at the unit (59.0%), low priority of pain management by unity team (57.4%), no designed area for charting pain (60.7%), sedation interfering with pain assessment (52.5%), insufficient analgesia dosage prescribed (62.3%).

Table 10. Distribution of participants by perceived barriers to pain assessment and management.

Variables	Frequency	Percentages
nursing workload		
Yes	52	85.2
Non	9	14.8
Lack of availability		
Yes	38	62.3
Non	23	37.7
lack of education		
Yes	41	67.2
Non	20	32.8
Familiarity with assessment tools		
Yes	34	55.7
Non	27	44.3
patients instability		
Yes	40	65.6

Non	21	34.4
patients inability to communicate		
Yes	31	50.8
Non	30	49.2
lack of protocols		
Yes	33	54.1
Non	28	45.9
Low priority		
Yes	35	57.4
Non	26	42.6
no designed area for charting pain		
Yes	37	60.7
Non	24	39.3
Sedation interfering		
Yes	32	52.5
No	28	45.9
Poor documentation		
Yes	31	50.8
Non	30	49.2
poor communication		
Yes	36	59.0
Non	25	41.0
Insufficient analgesia dosage prescribed		
Yes	38	62.3
Non	23	37.7

4.5. Factors enable delivery of effective pain practice

4.5.1. Distribution of participants according to factors enables delivery of effective pain practice

As shown in Table 12 below, majority of the participants reported the following as factors enables delivery of effective pain practice, pain assessment and management is a unit priority (70.5%), interested and motivated staff (78.7%), Standardized assessment tools are in use (72.1%), protocols and guidelines are in use (67.2%), physicians prescribe adequate doses of analgesia (73.8%), ongoing education on pain is provided (62.3%), advanced practice nurses are employed on the unit (62.3%), hospital pain service consults in the unit (65.6%).

Table 11: Distribution of participants according to factors enables delivery of effective pain practice

Variable	Frequency	Percentage
Pain assessment and management is a unit priority		
Yes	43	70.5
No	18	29.5
Interested and motivated staff		
Yes	48	78.7
No	13	21.3
Standardized assessment tools are in use		
Yes	44	72.1
No	17	27.9
Protocols and guidelines are in use		
Yes	41	67.2
Non	20	32.8
Physicians prescribe adequate doses of analgesia		
Yes	45	73.8
Non	16	26.2
Ongoing education on pain is provided		
Yes	38	62.3
Non	23	37.7
Advanced practice nurses are employed on the unit		
Yes	38	62.3
Non	23	37.7
Hospital pain service consults in the unit		
Yes	40	65.6
Non	21	34.4

4.6. Pain education

4.6.1.Distribution of participants by pain education

Figure 4, show that the majority of respondents (68.9%) did not received education on pain assessment and management, only 31.1% have received education on pain assessment and management.

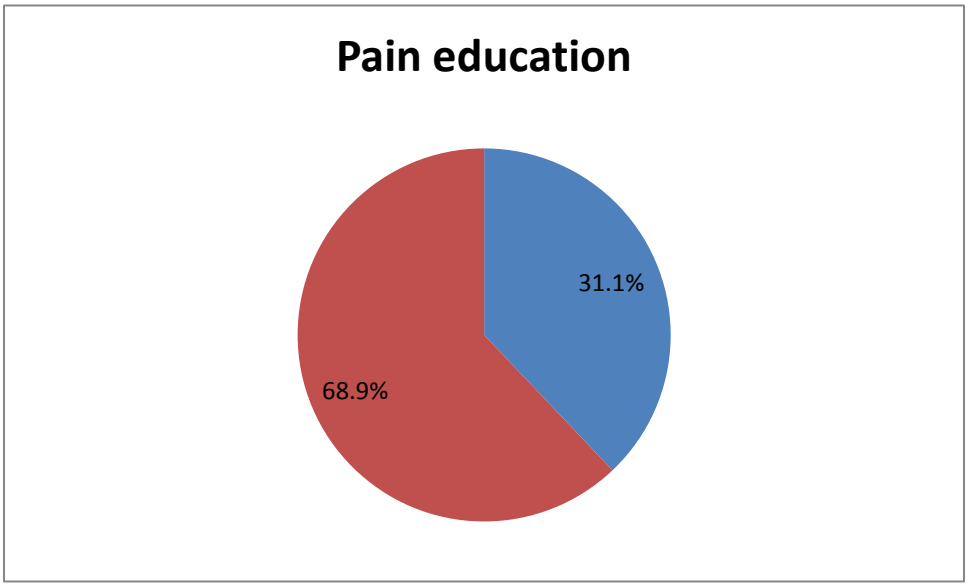


Figure 3. Distribution of participants by pain education

4.7. Topics covered during continuing professional education.

4.7. Distribution of participants by topics covered during continuing professional education.

As shown in Table 12 below, majority of the participants had never had training on; pain assessment methods and tools in critically ill patients (67.2%), pain physiological mechanisms (86.9%), practice recommendations/guidelines (85.5.%) and physiological consequences of unrelieved pain (86.9%), painful conditions and procedures (77%), pharmacological pain

management principles/strategies (85.2%), non pharmacological pain management principles/strategies (88.5%).

Table 12 Distribution of participants by topics covered during continuing professional education.

Pain assessment methods and tools in critically ill patients		
Yes	20	32.8
Non	41	67.2
Psychological consequences of unrelieved pain		
Yes	8	13.1
Non	53	86.9
Painful conditions and procedures		
Yes	14	23.0
Non	47	77.0
Pharmacological pain management principles/strategies		
Yes	9	14.8
Non	52	85.2
Non pharmacological pain management principles/strategies		
Yes	7	11.5
Non	54	88.5
Practices ,recommendations and guidelines		
Yes	9	14.8
Non	52	85.2

4.8. Consequences of unrelieved pain.

The majority of respondents has said that chronic pain and depression are the most complication of unrelieved pain where 22in 61 participants have reported that, other consequences are cardiac arrest of 61 participants 5have said that, hypertension on the rate of 7%, respiratory problem on the rate of 9%, severe pain on the rate of 9%, shock on the rate of 3%, other reported consequence on the rate below 2% are agitation, anxiety, conflict with health personnel, sleep disturbance, depression, psychological trauma, status aggravation, tachycardia, loose of appetite and uncomfort .

4.9. Experience as a Registered Nurse * Poor communication of pain assessment priorities at the unit

Table 13, shows a big association between nurse experience and poor communication of pain assessment priorities at the unities, due to significant since p-value=0.037<0.05

Table 13. Experience as a Registered Nurse * Poor communication of pain assessment priorities at the unit

Variable		Poor communication of pain assessment priorities at the unit patients for pain		Chi-Square test
		Yes	No	
Experience as a Registered Nurse	Below 2	4	9	0.30*
	2 – 5	8	8	
	6 - 10	16	9	
	Above 10	6	0	

This is significant since p-value=0.030<0.05

4.10 Experience as a Registered Nurse * Received education on Pain physiology mechanisms during professional development as a nurse who cares for critically ill patients

Table 14, show a big correlation between Experience as a Registered Nurse and Received education on Pain physiology mechanisms during professional development as a nurse who cares for critically ill patients

Table 14: Experience as a Registered Nurse * Received education on Pain physiology mechanisms during professional development as a nurse who cares for critically ill patients

Count

Variables		Received education on Pain physiology mechanisms during professional development as a nurse who cares for critically ill patients		**Chi-Square Tests**
		Yes	No	
Experience as a Registered Nurse	Below 2	2	11	.037*
	2 - 5	5	11	
	6 - 10	9	16	
	Above 10	5	1	
Total		21	39	

This is significant since p-value=0.037<0.05

4.9. Conclusion to chapter four

Chapter four has given the detailed findings on pain assessment, the study was conducted in CHUK (ICU and ER), and the total of respondents was 61in 68 working nurses in those two unities. The result was recorded and analysed using SPSS IBM statistic 20 ex5.

CHAPTER FIVE: DISCUSSION

5.0 Discussion of results

The chapter discusses practices, knowledge and factors and barriers on pain assessment among nurses caring for critically ill patients at CHUK.

5.1 Demographic characteristics of respondents

The majority of respondents (67.2%) were working in Emergency room I think that the high rate of nurses working in Emergency room is due to the ER has too many bed than ICU in CHUK; most of them (59%) were female. The high percentage of female nurses in the study is due to the dominance of females in the nursing profession in Rwanda, with age between30-34 (45.9%). All respondents have been registered in Nursing Council; most of them (98.4) work in full time condition, and work in rotation shift, near a half of them (42.6%) have an experience in working which is between 6 to 10 years. The majority of respondents (85.2) have been get diploma level of education. This is due to the Ministry of health has tried to make effort in increasing the number of trained nurses, and it is mandatory to have a job in Referral hospital setting at least holding diploma level and presenting a certificate of being registered in National Nursing Council in Rwanda.

5.2. Knowledge related to pain assessment

The total score knowledge is on the mean of 98%, 58 out of 61 participants have got the knowledge beyond 14 to 26 of mean. And the total marks were 26, only 2out of 26 have got under 13 which considered as the low marks.The provider of the most accurate rating of pain intensity is physicians on the rate of (39.3%),
the second who provide the most accurate rating of pain intensity is nurses a on the rate of rate 34.4% of respondents, the relatives are not forgotten those provide information is on the rate (18%), patients did not show any things in rating. This is a big problem where patients did not knew the responsibility of patients in rating their pain score.

Nurses did not have enough information on assessment for the need of analgesic is important. More than a quarter of the participants did not know that assessment for the need of analgesics before the following procedures is important; repositioning (31.1%) , endo-tracheal suctioning (52.5%) , drain removal (47.5%), invasive line placement (67.2.%) and spontaneous breathing trials (77.0%)

The majority of respondent (67.2%) do not have adequate current knowledge on pain assessment, only 32.8% have said that they have adequacy of current knowledge on pain assessment. This also have been founded in the study made by Naser, Sinwan, and Bee (2005) used a descriptive study to investigate the pain management knowledge of registered nurses in a restructured hospital, among intensive care nurses to establish if they had a better knowledge of pain management than nurses from other units, who have found that the overall general knowledge on pain assessment was poor. Similar to the results founded by Wang and Tsai (2010) used a cross-sectional study to explore nurses' knowledge and barriers regarding pain management in intensive care units, the results have shown that the overall average correct response rate for the knowledge scale was 53·4%, indicating poor knowledge of pain management. The similar results have been found by Al-Shaer, Hill, and Anderson (2011) used a non-experimental, descriptive study to investigate nurses' knowledge of pain assessment and interventions. Out of a possible 32 points, the average knowledge score was 25.9. Overall, nurses continue to demonstrate inadequate knowledge of pain assessment and pain management interventions. Although the results of this study indicated relatively high knowledge scores, some nurses were not prepared adequately to care for patients who experience pain. Knowledge of pain management principles and interventions were insufficient.

The most accurate rating of pain intensity is nurses on the rate of (44.3%), the second who provide the most accurate rating of pain intensity is a patient on the rate of 34.4% of respondents, the physicians are not forgotten those provide information on the rate of (19.7%), relatives also sometime can provide information on the rate of (1.6%). On the question asking on the important of a pain assessment tool, the majority of respondents (54.1%) find that is

extremely important, (24.6%) of respondents find is moderately important, (16.4%) of respondents find it minimally important, (4.9%) find not at all important.
Majority of the participants knew that is important to assess for pain among; post operative patient (82%), medical (83.6.4%), patients with Glasgow Coma Scale < 8 (86.9%), trauma patients (86.9%), and Burns (85.2%). More than a quarter of the participants (32.8%) did not know that assessing for pain among sedated patients is important. This also have been founded by Ikizza (2012) in Uganda, who have reported that more than a quarter of the participants (35.5%) did not know that assessing for pain among sedated patients is important

5.3 Practice related to pain assessment

The results show that majority (86.9%) said that they assess that patients are able to communicate, as indicated in table below, also the majority (86.3%) said that they use pain assessment tools. The respondents have reported that they use a pain assessment tool on the rate of (86.3%), only (13.7%) did not use a pain assessment tool. This also have been seen in the study conducted by Ikizza (2012) in Uganda, on assessment of practice related to pain assessment found that 153 (90%) reported that they assess for pain among adult patients who are able to report pain while 17(10%) did not. The majority of respondents (91.8%) who didn't use pain assessment tool observe the client, other methods used are patients expressions, patients communication if he has or not having pain, verbal expression, facial expression.

In this study, the frequency they use a pain assessment tool, a quarter often use a pain assessment tool (39.2%), (29.4%) of respondents sometimes use a pain assessment tool, (17.6%) seldom use a pain assessment tool, only 4% use a pain assessment tool routinely. The majority of respondents (86.9%) said that they document findings after pain assessment, and (13.1%) did not document findings after pain assessment. The majority of respondents are above 60% on assessment and documentation of pain for patient able to report pain, and few below 30%.

The frequency they assess and document pain the majority said that on 5-8 Hours the rate is (32.8%), the interval of 1-4 Hours the rate is (19.7%), those who record <1H the rate is (16.4%), PRN is on the rate of (18%), those who never record the rate is on (3.3%)

A half (54.1%) said that it is extremely important of frequent assessment and documentation of pain in patients, (18%) find moderate important (14.8%) find minimally important (9.8%) find somewhat important and only (3.3%) find not at all important.
The majority of respondents (73.8%) discuss pain score and management during nurse to nurse report, only (26.2%) said that they do not discuss that. Almost a quarter (34.4%) of respondent did not discussed pain score and management during unity rounds, a half of respondents (49.2%) did not feel competent in effectively assessing patients for having pain.
Also a half of respondents (50.8%) did not agree with patient's statements about their pain.
The majority of respondents 78% have the low practices scores as 44 out 57 of respondents have the marks which are under 18 out 35 marks, only 22% have got the marks beyond 18 out 35.

5.4. Factors associated to pain assessment and management.

Majority of the participants reported the following as barriers to pain assessment ; nursing workload (85.2%), lack of availability of assessment tools (62.3%), lack of education on assessment tools (67.2%) , lack of familiarity with tools (55.7%) , lack of protocols and guidelines on pain assessment and management (54.1%), poor documentation of pain assessment and management (50.8%) and poor communication of pain assessment priorities at the unit (59.0%), low priority of pain management by unity team (57.4%), no designed area for charting pain (60.7%), sedation interfering with pain assessment (52.5%), insufficient analgesia dosage prescribed (62.3%). The similar results have been founded by Ikizza (2012) in Uganda, also she found that about the reason why nurses did not the pain are lack of guidelines for pain assessment and management 3(9.4%), no need to document because patients can report pain 1(3.1%), lack of pain charts for documentation 19 (59.4%), pain assessment is not part of routinely documented data 15 (46.9%) and nursing workload 7(21.9%).

The same results have been founded by (Onwong & Health 2014) who has found also some barriers on pain assessment like the lack of availability of pain assessment tools (17.8%, n=14), lack of a designated area for charting pain assessment (17.7%, n=14) and lack of protocols/ guidelines for pain assessment (16.9%, n=13) were considered the greatest barriers to pain assessment and management. Sedation was considered a barrier but less frequent (<50% of the

time) (Onwong & Health 2014). This also have been talked by Johnson (2015), conducted a study on perspectives, perceptions and experiences in postoperative pain management in developing countries: A focus group study conducted in Rwanda, have found that the responses were related to five general areas: general patient and medical practice management; knowledge base regarding postoperative pain management; pain evaluation; institutional/system issues related to protocol implementation; and perceptions about resource allocation. Within these areas, challenges (e.g., communication among stakeholders and with patients) and opportunities (e.g., on-the-job training, use of protocols, routine pain assessment, and participation in resource allocation decisions) were identified.

Also the same barriers have been founded by Johnson et al.(2015)perspectives, perceptions and experiences in postoperative pain management in developing countries: a focus group study conducted in Rwanda and revealed that lack of resources available for pain management: Residents noted a general lack of resources available for pain management. General lack of resources listed by participants included "drugs, equipment and personnel". They universally remarked that "this limitation of resources constitutes a barrier to implementing postoperative pain management".

5.5. Factors enable delivery of effective pain practice

Majority of the participants reported the following as factors enables delivery of effective pain practice, pain assessment and management is a unit priority (70.5%), interested and motivated staff (78.7%), Standardized assessment tools are in use (72.1%), protocols and guidelines are in use (67.2%), physicians prescribe adequate doses of analgesia (73.8%), ongoing education on pain is provided (62.3%), advanced practice nurses are employed on the unit (62.3%), hospital pain service consults in the unit (65.6%).

5.6 .Pain education on pain assessment

Majority of respondents (68.9%) did not received education on pain assessment and management, only 31.1% have received education on pain assessment and management. The similar result has been founded by the study conducted by Ikizza, (2012) at Mulago Hospital in

Uganda where she said that more than a quarter of the participants 52(30.6%) had never had any training on pain assessment and management. Of the 118 participants who had received some training, majority 99 (83.9%) were not satisfied with the training. The similar results have been founded by Kituyi (2011) in the study on postoperative pain management: clinicians' knowledge and practices on assessment and measurement at Moi teaching and referral hospital have also found a result on nurses' knowledge about pain; he found that fifty seven percent of the participants indicated that they had inadequate knowledge regarding the tools that may be employed for pain assessment and measurement. Those who had never had any formal teaching in relation to pain evaluation and management constituted 21% (Kituyi et al. 2012)

5.7. Topics covered during continuing professional education.

Majority of the participants had never had training on; pain assessment methods and tools in critically ill patients(67.2%),pain physiological mechanisms (86.9%),practice recommendations/guidelines (85.5.%) and physiological consequences of unrelieved pain (86.9%), painful conditions and procedures (77%), pharmacological pain management principles/strategies (85.2%), non pharmacological pain management principles/strategies (88.5%). The result was been controversial with the one founded by Louise Rose (2012), who was conducted a study critical care nurses' pain assessment and management practices: a survey in Canada and she have founded in regards to education on pain assessment during professional development, pain assessment methods and tools was the topic covered for the greatest number of ICU nurses (522 of 796 nurses; 66%). Next, in order, were pharmacological pain management principles (518 of 799 nurses; 65%) and pain neuro-pathophysiology (504 of 794 nurses; 63%).Fewer nurses had education on practice recommendations (353 of 792 nurses; 45%), non pharmacological pain management (423of 799 nurses; 53%) and psychological consequences (443 of 795 nurses; 56%) of unrelieved pain

5.8 Consequences of unrelieved pain.

The majority of respondents has said that chronic pain and depression are the most complication of unrelieved pain where 22in 61 participants have reported that, other consequences are cardiac arrest of 61 participants 5have said that, hypertension on the rate of 7%, respiratory problem on

the rate of 9%, severe pain on the rate of 9%, shock on the rate of 3%, other reported consequence on the rate below 2% are agitation, anxiety, conflict with health personnel, sleep disturbance, depression, psychological trauma, status aggravation, tachycardia, loose of appetite and uncomfort .

5.9. Conclusion to chapter five

The chapter five has given discussion on findings based on the objectives, and compared with other findings in literature review.

CHAPTER SIX CONCLUSION AND RECOMMENDATIONS

6.1. CONCLUSION

Pain assessment and management of critically patients is one of the responsibilities of a nurse. The total score knowledge is on the mean of 98%, nurses of CHUK have information on pain assessment but majority of them (67.2%) do not have adequate current knowledge on pain assessment. Nurses know very well the importance of using an assessment tool however few (44%) of them do not consider pain assessment tool during the management of the patients.

Regarding the assessment and management of pain, the majority of respondents (73.8%) discuss it's during nurse to nurse report, and almost a quarter (34.4%) of respondents did not discuss its during unity rounds. It is noteworthy that a half of respondents (49.2%) did not feel competent in assessing patients for having pain. In addition, this study revealed that a half of respondents (50.8%) did not agree with patient's statements about their pain.
The majority of respondents 78% have the low practices scores as 44 out 57 of respondents have the marks which are under 18 out 35 marks, only 22% have got the marks beyond 18 out 35.

This study have shown some barriers on pain assessment including; nursing workload (85.2%), lack of availability of assessment tools (62.3%), lack of education on assessment tools (67.2%) , lack of familiarity with tools (55.7%) , lack of protocols and guidelines on pain assessment and management (54.1%), poor documentation of pain assessment and management (50.8%) and poor communication of pain assessment priorities at the unit (59.0%), low priority of pain management by unity team (57.4%), no designed area for charting pain (60.7%), sedation interfering with pain assessment (52.5%)and insufficient analgesia dosage prescribed (62.3%).

6.2. RECOMMENDATIONS

There is need to continue to increase professional development on pain assessment by concentrating on having sufficient knowledge on pain physiology, mechanisms, pain assessment, management, pharmacology and non pharmacology management of pain. The ministry of health have to emphasise on methods of assessment, guidelines, how to use assessment tools, protocols

and charts for proper documentation for critically ill patients, introduction of tools, so that the assessment and documentation will be improved.

Training and continuous training are need so that nurses have full information on pain assessment and management. The setting has to ensure that pain guidelines are well known in their setting, continue the measures to improve that.

The Ministry of health have to ensure that the policy on pain assessment and management is strengthened, by encouraging the initiative on pain assessment, by putting pain assessment team so that to keep active knowledge, practices on pain assessment.

The Ministry of Education and educational institutional has to introduce pain guidelines, protocols and recommendation on pain assessment in nursing program so that they finish their level of education have information on pain assessment.

There is need to increase research on pain assessment so that the information will be disseminated and be accessible to every. Also there is need to extend the study to different setting so that findings on pain assessment will be known.

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APPENDIX I: QUESTIONAIRE

PAIN ASSESSMENT FOR THE CRITICALLY-ILL PATIENTS

Date_____ unit code _____

Instructions: Read each question carefully and tick (√) against the option that best suits your response.

SECTION I questions related to what the provider know about pain assessment and management)

1. In your opinion, who provides the most accurate rating of pain intensity? (Please select only one response)

Physicians ☐ Nurses ☐ Patients ☐ Relatives ☐

2. In your opinion, how important is a pain assessment TOOL (e.g. numerical rating score)?

1. Not at all important ☐ 2.Minimally important ☐

3. Moderately important ☐ 4. Extremely important ☐

3. In your opinion, how important are frequent assessment and documentation of pain in patients able to communicate? ☐

1. Not important ☐ 2.Minimally important

3. Moderately important ☐ 4. Extremely important ☐

4. Is it important to assess pain for the following classifications of critically ill patient?

a. Post-operative patient 1. Yes ☐ 2. No ☐

b. Medical (nonsurgical) patients 1. Yes ☐ 2. No ☐

c. Patients with a Glasgow Coma Scale less than 8 1. Yes ☐ 2. No ☐

d. Trauma patients 1. Yes ☐ 2. No ☐

e. Burns patients 1. Yes ☐ 2. No ☐

f. End-of-life patients 1. Yes ☐ 2. No ☐

g. Patients receiving sedatives 1. Yes ☐ 2. No ☐

5. Do you think it is important to assess for pain and need for analgesia before, during, and after to the following procedures?

a. Patient repositioning 1.Yes ☐ 2. No ☐

b .Endotracheal suctioning 1.Yes ☐ 2. No ☐

c. Wound care 1.Yes ☐ 2.No ☐

d. Drain removal 1.Yes ☐ 2. No ☐

e. Invasive line placement 1. Yes ☐ 2 No ☐

f. Spontaneous breathing (weaning) trial 1. Yes ☐ 2. No ☐

6. To your knowledge, what are the consequences of unrelieved pain?

_____

_____

_____

_____

7. Do you feel your current knowledge about pain assessment is adequate?

Yes ☐ 2 No ☐

Section II (Questions related to what a nurse does for pain assessment)

The following questions relate to patients able to communicate verbally or by other means.

8. Do you assess for pain for patient able to communicate pain?

1 Yes ☐ 2 No ☐

9. If yes, do you use a pain assessment tool?

1 Yes ☐ 2 No ☐

(If no, please go to question 10)

10. If **yes**, how frequently do you use a pain assessment tool for patients?

Seldom (1-25%) sometimes (26-50%)

Often (51-75%) Routinely (> 75%)

Please name the tool(s) you use .....

11. If you do **not** use a pain assessment tool, please describe your method of assessing pain for patients able to report pain:

_____

_____

_____

12. Do you document the findings after pain assessment for patients able to communicate?

1 Yes ☐ 2 No ☐

12b) If **yes**, how frequently do you assess and document pain for a patient ABLE to report pain?

13. How frequently do you assess AND document pain for a stable patient ABLE to report pain?

□ ≤ Q1H □ > Q1H - ≤4QH □ > Q4H - ≤ Q8H □ Once Q12H shift □ Never □ prn only

14. In your opinion, how important are frequent assessment and documentation of pain in patients **ABLE** to communicate?

Not at all important □	Minimally important □	Somewhat important □	Moderately important □	Extremely important □

15. Do you assess the need for administration of analgesia before the following procedures are done?

a. Patient repositioning 1 Yes ☐ 2 No ☐

b. Endotracheal suctioning 1 Yes ☐ 2 No ☐

c. Wound care 1 Yes ☐ 2 No ☐

d. Drain removal 1 Yes ☐ 2 No ☐

e. Invasive line placement 1 Yes ☐ 2 No ☐

f. Spontaneous breathing (weaning) trial1 1Yes ☐ 2 No ☐

16. Are pain scores and management discussed during nurse-to-nurse report?

1 Yes ☐ 2 No ☐

17. Are pain scores and management discussed during unit rounds?

Yes ☐ 2 No ☐

18. Do you feel competent in effectively assessing patients for having pain?

Yes ☐ 2 No ☐

19. Do you always agree with patients' statements about their pain?

Yes ☐ 2 No ☐

Section III (Question about barriers and enablers factors to pain assessment and management)

20. Please indicate whether or not an item affects your ability to assess patients for pain by ticking (√) yes or no.

a. Nursing workload 1Yes ☐ 2 No ☐

b. Lack of availability of pain assessment tools 1 . Yes ☐ 2. No ☐

c. Lack of education

d. Lack of familiarity with assessment tools 1. Yes ☐ 2. No ☐

e. Patient instability e.g. unstable hemodynamics 1. Yes ☐ 2. No ☐

f. Patient inability to communicate 1.Yes ☐ 2. No ☐

g. Lack of protocols for pain assessment 1. Yes ☐ 2. No ☐

h. Low priority of pain management by unit team 1. Yes ☐ 2. No ☐

i. No designated area for charting pain 1. Yes ☐ 2. No ☐

j. Sedation interfering with pain assessment 1. Yes ☐ 2. No ☐

k. Poor documentation of pain assessment and management 1. Yes ☐ 2. No ☐

l. Poor communication of pain assessment priorities at the unit 1. Yes ☐ 2. No ☐

m. Insufficient analgesia dosage prescribed 1. Yes ☐ 2. No ☐

n. Others (please identify)

_____

_____

21. Please indicate whether or not each of the following enables your delivery of effective pain practices by ticking (√) yes or no.

a. Pain assessment and management is a unit priority 1. Yes ☐ 2. No ☐

b. Interested and motivated staff 1. Yes ☐ 2. No ☐

c. Standardized assessment tools are in use 1. Yes ☐ 2. No ☐

d. Protocols and guidelines are in use 1. Yes ☐ 2. No ☐

e. Physicians prescribe adequate doses of analgesia 1. Yes ☐ 2. No ☐

f. Ongoing education on pain is provided 1. Yes ☐ 2. No ☐

g. Advanced practice nurse(s) are employed on the unit 1. Yes ☐ 2. No ☐

h. Hospital pain service consults in the unit 1. Yes ☐ 2. No ☐

i. Others (please identify)

_____

_____

_____

Section iv (related to pain education)

22. Have you read the any Guidelines for pain assessment & management for critically ill patients?

If yes, please specify

_____

23. Have you received education on the following topics during your professional development as a nurse who cares for critically ill patients?

a. Pain physiology mechanisms 1. Yes ☐ 2. No ☐

b. Pain assessment methods and tools in the critically ill patient 1. Yes ☐ 2. No ☐

c. Psychological consequences of unrelieved pain 1. Yes ☐ 2. No ☐

d. Painful conditions and procedures 1. Yes ☐ 2. No ☐

e. Pharmacological pain management principles/strategies 1. Yes ☐ 2. No ☐

f. Non-pharmacological pain management principles/strategies 1. Yes ☐ 2. No ☐

g. Practice recommendations/ guidelines 1. Yes ☐ 2. No ☐

DEMOGRAPHIC DATA

24. Gender

1. Male ☐
2. Female ☐

25. Age: ---------- years

26. Rank

1. Enrolled ☐
2. Registered ☐

27. How many years of experience do you have as a nurse registered by the Council?

Less than 2 years ☐ More than 5-10 years ☐

2-5 years ☐ More than 10 years ☐

28. How many years of experience do you have as a nurse on this unit or caring for critically ill patients?

Less than 2 years ☐ More than 5-10 years ☐

2-5 years ☐ More than 10 years ☐

29. Qualifications (tick all that apply)

Certificate ☐ BSCNS / BNS ☐

Diploma ☐ Masters ☐

Others.....

30. Employment status

Full - time ☐ Part - time ☐

31. Usual shift rotation

Days only ☐ Evening only ☐ Night only ☐ Rotating Shift ☐

Thank you for participation, may God bless you.

APPENDIX 2: INFORMATION DOCUMENT.

TITLLE OF THE PROJECT: **NURSES' KNOWLEDGE AND PRACTICES TOWARDS PAIN ASSESSMENT IN CRITICALLY ILL PATIENTS AT CHUK**

You are invited to take part in our study about nurses' knowledge and practices towards pain assessment in critically ill patients at CHUK, in Emergency department and ICU, your participation in this study is voluntary. Your decisions to participate in this study will not affect the services normally provided by you during the period of data collection.

Your participation in this study will not lead to the loss of any benefits to which you are otherwise entitled, even if you participate , you may withdraw and discontinue participation at any time without penalty, indeed you are free to refuse to participate in the study.

The information obtained in this study will remain confidential .Confidentiality will be maintained by means of describing coding procedures and plans to safeguard data, including where data will be kept.

This consent form may contain words that are new to you; if you read any words that are not clear, please ask for more details.

Thank you for accepting to participate.

INFORMED CONSENT

I ..... agree to participate in the study entitled “nurses’ knowledge and practices towards pain assessment in critically ill patients at CHUK” conducted by TUYISHIMIRE Marie Louise student in UR/CMHS/Nyarugenge Campus.

I understand that the information I will provide will be kept confidential; it will be used only for the purpose of the current study. I also understand that I have the right to withdraw from this study at any time and ask clarification if there is any difficult.

Signature of participants: .....

Date: .....

Names of the researcher: .....

APPENDIX 3.AUTHORITY TO USE QUESTIONNAIRE

Dr. Louise Rose, PhD

TD Nursing Professor in Critical Care Research, Sunnybrook Health Sciences Centre

Associate Professor, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto

Adjunct Scientist Institute for Clinical Evaluative Sciences

CIHR New Investigator

Director of Research, Provincial Centre of Weaning Excellence, Toronto East General Hospital

Adjunct Scientist, Mount Sinai Hospital, Li Ka Shing Institute, St Michael's Hospital, West Park Healthcare Centre

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Dear Marie

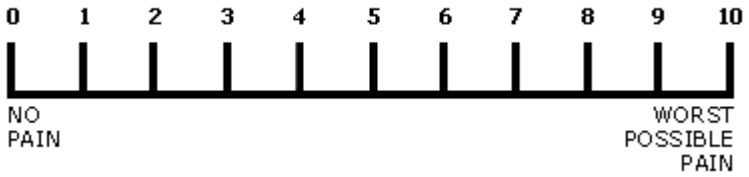
Thank you for our inquiry into our questionnaire. Of course you may use it and adapt as you see fit. We ask everyone that requests a copy to acknowledge us as the source in any presentations or publications arising from the work. Please do not hesitate to contact me with further questions and I would love to see the results of your work in the future. Best of luck with your studies.

Kind regards

Louise

Pain Scale Tools for Patients *Able* to Self-Report Pain

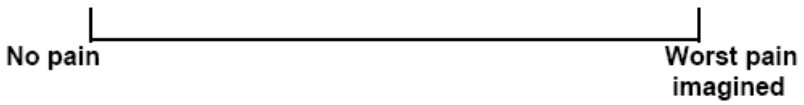
Numerical Rating Scale (NRS)



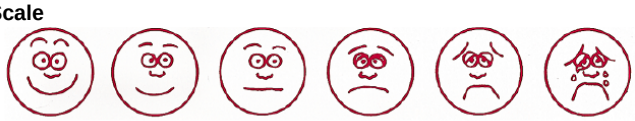
Verbal Rating Scale (VRS)

Pain Scale	Description
0	No Pain
1	Mild Pain
2	Moderate Pain
3	Severe Pain

Visual Analog Scale (VAS)



FACES Scale



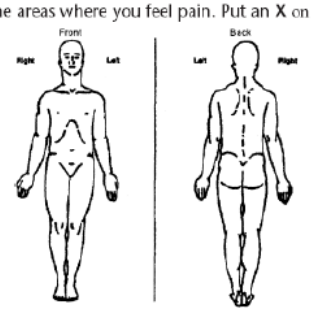
0 No Hurt | 1 Hurts Little Bit | 2 Hurts Little More | 3 Hurts Even More | 4 Hurts Whole Lot | 5 Hurts Worst

Brief Pain Inventory (Wisconsin)

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain during the last week?

   ☐ Yes ☐ No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by circling the one number that best describes your pain at its *worst* in the last week.

   0 1 2 3 4 5 6 7 8 9 10

   No Pain — Pain as bad as you can imagine

4. Please rate your pain by circling the one number that best describes your pain at its *least* in the last week.

   0 1 2 3 4 5 6 7 8 9 10

   No Pain — Pain as bad as you can imagine

5. Please rate your pain by circling the one number that best describes your pain on the *average*.

   0 1 2 3 4 5 6 7 8 9 10

   No Pain — Pain as bad as you can imagine

6. Please rate your pain by circling the one number that tells how much pain you have *right now*.

   0 1 2 3 4 5 6 7 8 9 10

   No Pain — Pain as bad as you can imagine

7. What treatments or medications are you receiving for your pain?

McGill Pain Questionnaire (short-form)

SHORT-FORM McGILL PAIN QUESTIONNAIRE

RONALD MELZACK

PATIENT'S NAME: _____ DATE: _____

	NONE	MILD	MODERATE	SEVERE
THROBBING	0)	1)	2)	3)
SHOOTING	0)	1)	2)	3)
STABBING	0)	1)	2)	3)
SHARP	0)	1)	2)	3)
CRAMPING	0)	1)	2)	3)
GNAWING	0)	1)	2)	3)
HOT-BURNING	0)	1)	2)	3)
ACHING	0)	1)	2)	3)
HEAVY	0)	1)	2)	3)
TENDER	0)	1)	2)	3)
SPLITTING	0)	1)	2)	3)
TIRING-EXHAUSTING	0)	1)	2)	3)
SICKENING	0)	1)	2)	3)
FEARFUL	0)	1)	2)	3)
PUNISHING-CRUEL	0)	1)	2)	3)

NO PAIN — WORST POSSIBLE PAIN

PPI

0 NO PAIN _____
1 MILD _____
2 DISCOMFORTING _____
3 DISTRESSING _____
4 HORRIBLE _____
5 EXCRUCIATING _____

Pain Scale Tools for Patients *Unable* to Self-Report Pain

Adult Nonverbal Pain Scale (Ohdner)

Categories	0	1	2
Face	No particular expression or smile	Occasional grimace, tearing, frowning, wrinkled forehead	Frequent grimace, frowning, wrinkled forehead
Activity (Movement)	Lying quietly, normal position	Seeking attention through movement or slow, cautious movement	Restless, excessive activity and/or withdrawal reflexes
Guarding	Lying quietly, no positioning of hands over areas of body	Splinting areas of the body, tense	Rigid, stiff
Physiologic I (Vital Signs)	Stable vital signs (no change in past 4 hrs)	Change over past 4 hrs in any of the following: SBP >20 mm HG, HR >20/min, RR >10/min	Change over past 4 hrs in any of the following: SBP >30 mm HG, HR >25/min, RR > 20/min
Physiologic II	Warm, dry skin	Dilated pupils, perspiring, flushing	Diaphoretic, pallor

Pain Behaviour Assessment Tool (Puntillo, 2004)

Facial Responses	Verbal Responses	Body Movement
• Grimace	• Moaning	• No movement
• Frown	• Screaming	• Rigid
• Wince	• Whimpering	• Arching
• Eyes closed	• Crying	• Clenched fists
• Eyes wide open with eyebrows raised	• Using protest words	• Shaking
• Looking away in opposite direction of the pain	• Verbal complaints of pain	• Withdrawing
• Grin/smile	• None	• Splinting
• Mouth wide open to expose teeth and tongue	• Unable to assess	• Flailing
• Clenched teeth exposing slightly open mouth	• Other	• Picking/touching site
• None		• Restlessness
• Unable to assess		• Rubbing/massaging
• Other		• Defensive grabbing
		• Pushing
		• Guarding
		• Unable to assess
		• Other

Directions: Observe behaviours for up to 1 min, focusing on facial responses. Mark all behaviours observed.

Behavioural pain Scale (BPS) (Payen)

Item	Description	Score
Facial Expression		
	Relaxed	1
	Partially tightened (e.g., brow lowering)	2
	Fully tightened (e.g., eyelid closing)	3
	Grimacing	4
Upper limbs		
	No movement	1
	Partially bent	2
	Fully bent with finger flexion	3
	Permanently retracted	4
Compliance with ventilation		
	Tolerating movement	1
	Coughing but tolerating Ventilation for most of the time	2
	Fighting ventilator	3
	Unable to control ventilation	4

Checklist of Non-Verbal Pain Indicators (Feldt)

Nonverbal behaviour	At rest	With Movement	Total
Vocalizations			
Grimaces			
Bracing			
Rubbing			
Restlessness			
Verbal complaint			

Behavioural Pain Rating Scale (Mateo)

Pain Behaviours	Pain Scale 0	1	2	3
Restless	Quiet	Slightly restless	Moderatley restless	Very restless
Tense muscles	Relaxed	Slight tenseness	Moderate tenseness	Extreme tenseness
Frowning or grimacing	No frowning or grimacing	Slight frowning or grimacing	Moderate frowning or grimacing	
Patient Sounds	Talking in normal tone or no sound	Sighs, groans, moans softly	Groans, moans loudly	Cries out or sobs

The Critical-care Observation Tool (CPOT) (Gelinas)

Indicator	Description	Score	
Facial expression	No muscular tension observed	Relaxed, neutral	0
	Presence of frowning, brow lowering, orbit tightening, and levator contraction	Tense	1
	All of the above facial movements plus eyelid tightly closed	Grimacing	2
Body movements	Does not move at all (does not necessarily mean absence of pain)	Absence of movements	0
	Slow cautious movements, touching or rubbing the pain site, seeking attention through movements	Protection	1
	Pulling tube, attempting to sit up, moving limbs/thrashing, not following commands, striking at staff, trying to climb out of bed	Restlessness	2
Muscle tension	No resistance to passive movements	Relaxed	0
Evaluation by passive flexion	Resistance to passive movements	Tense, rigid	1
And extension of upper extremities	Strong resistance to passive movements, inability to complete them	Very tense or rigid	2
Compliance with the ventilator (intubated patients)	Alarms not activated, easy ventilation	Tolerating ventilator or movement	0
	Alarm stops spontaneously	Coughing but tolerating	1
	Asynchrony: blocking ventilation, alarms frequently activated	Fighting ventilator	2
OR			
Vocalization (extubated patients)	Talking in normal tone or no sound	Talking in normal tone or no sound	0
	Sighing, moaning	Sighing, moaning	1
	Crying out, sobbing	Crying out, sobbing	2
Total, range			0-8

PAIN Algorithm (Puntillo, 1997)

Are potential pain-related behaviors present?

Movements	yes	no
No movement		
Slow, decreased, hesitant, cautious		
Restlessness		
Seeking attention through movements		
Vocalizations		
Facial Indicators		
Grimacing, frowning, wincing		
Drawn around mouth and eyes		
Teary/crying		
Wrinkled forehead		
Posturing / Guarding		
Rigid		
Splinting		
Tense, stiff		

Are potential physiological pain indicators present?

Physiological Indicators	yes	no
Increased heart rate		
Decreased heart rate		
Increased blood pressure		
Decreased blood pressure		
Increased respiratory rate		
Decreased respiratory rate		
Perspiration		
Pallor		

UNIVERSITY OF RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

Kigali, on 30 / 01 /2017

Ref. No: ..11/ 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 **TUYISHIMIRE Marie Louise,** 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 **ASSESSMENT OF NURSE'S KNOWLEDGE AND PRACTICE TOWARD PAIN ASSESSMENT IN CLITALLY ILL PATIENT AT CHUK**

This exercise that is going to take a period of 2 months starting from 13th February 2017 to 12th April 2017 will be done at ~~KIBAGABAGA~~ CHUK HOSPITAL

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

UNIVERSITY OF RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 09/01/2017
Ref: CMHS/IRB/**013**/2017

TUYISHIMIRE Marie Louise
School of Nursing and Midwifery , CMHS, UR

Dear TUYISHIMIRE Marie Louise

RE: ETHICAL CLEARANCE

Reference is made to your application for ethical clearance for the study entitled ***"Assessment of nurses' knowledge and practices towards pain in critically ill patients at CHUK (2016-2017)"***.

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.

for Professor Kato J. NJUNWA
Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Cc:
- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate studies, UR

CENTRE HOSPITALIER UNIVERSITAIRE
UNIVERSITY TEACHING HOSPITAL

Quality Health Care
Training & Research

Ethics Committee / Comité d'éthique

February 24th, 2017

Ref.: EC/CHUK/281/2017

Review Approval Notice

Dear Tuyishimire Marie Louise,

Your research project: ***"Assessment of nurses' knowledge and practice towards pain assessment in critically ill patients at CHUK."***

During the meeting of the Ethics Committee of University Teaching Hospital of Kigali (CHUK) that was held on 24/02/2017 to evaluate your protocol of the above mentioned research project, we are pleased to inform you that the Ethics Committee/CHUK has approved your protocol.

You are required to present the results of your study to CHUK Ethics Committee before publication.

PS: Please note that the present approval is valid for 12 months.

Yours sincerely,

ETHICS COMMITTEE CHUK

John Nyirigira
The Secretary, Ethics Committee,
University Teaching Hospital of Kigali

<<University teaching hospital of Kigali Ethics committee operates according to standard operating procedures (Sops) which are updated on an annual basis and in compliance with GCP and Ethics guidelines and regulations>>.

UNIVERSITY OF RWANDA

COLLEGE OF MEDICINE AND HEALTH SCIENCES

P.O.BOX 3286 KIGALI

AUTHORITY TO DEPOSIT THE CORRECTED VERSION OF THE PROJECT TO THE DIRECTORATE OF POSTGRADUATE STUDIES

We, the undersigned, hereby do testify to have verified the corrections done by the student (name) UYISHIMIRE Marie Louise to his/her Project titled ASSESSMENT OF NURSES' KNOWLEDGE AND PRACTICES TOWARDS PAIN ASSESSMENT IN CRITICALLY ILL PATIENTS AT CHUK (2016-2017)

and authorise him/her to deposit the document to the Directorate of Postgraduate Studies.

Supervisor name: MUSABIREMA Immaculée

Supervisor's Signature: [signature]

Date: 25/07/2017

MEMBERS OF THE PANEL

Member of the Panel	Secretary of the Panel	Chairperson of the Panel
Name and Signature MR. INNOCENT NDATEBA Nyamakura PP MR INOCENT NDATEBA	**Name and Signature** RUDO NYAMAKURA Nyamakura	**Name and Signature** DR. ANITA COLLINS Nyamakura PP DR. ANITA COLLINS
Date 28/07/2017	**Date** 28/07/2017	**Date** 28/07/2017