

**KNOWLEDGE, ATTITUDES AND PRACTICES
TOWARDS ASSESSMENT AND MANAGEMENT OF
CHRONIC PAIN AMONGST CLINICIANS WORKING
IN TENWEK HOSPITAL, KENYA**

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**Knowledge, Attitudes and Practices towards Assessment and
Management of Chronic Pain amongst Clinicians Working In
Tenwek Hospital, Kenya.**

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the Degree of Master of Science in Physiotherapy
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Agriculture and Technology**

2023

DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

Signature.....Date.....

Solomon Rop

This thesis has been submitted for examination with our approval as University Supervisors

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DEDICATION

This project is dedicated to my family –my wife Beatrice, and my children Caleb, Claudia, Eudia and Cainan.

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ABBREVIATIONS AND ACRONYMS

KAP	Knowledge Attitudes and practices
CP	Chronic Pain
HCP	Health Care Professionals
MRI	Magnetic Resonance Imaging
CT	Computerized Tomography
PhD	Doctor of philosophy
MSc	Masters of Science
JKUAT	Jomo Kenyatta University of Agriculture and Technology
IASP	International association for the study of pain
PE	Physical Examination
W.H.O.	World Health Organization
RPKAQ	The revised pain knowledge and attitudes questionnaire
KASRP	The knowledge and attitudes survey regarding Pain
SPSS	.Statistical package for social science
NRS	Numerical pain rating scale
VRS	verbal rating scale

ABSTRACT

Chronic Pain is one among the leading causes of hospitalization, increased cost of health care, socioeconomic deprivation and health burden to patients, clinicians and the health care facilities globally. The management of chronic pain remains a subject of controversy, as clinicians across the globe continues to exhibit varied levels of knowledge, varied attitudes, and varied management approaches that subsequently leads to poor chronic pain management outcomes to the patients. To-date there is paucity of data on the level of knowledge, attitudes and practices in management of chronic pain in Kenya and Tenwek Hospital in particular hence the basis of this study. In carrying out this study a cross-sectional descriptive study design was adopted. The study area was Tenwek hospital a referral faith based hospital in Bomet county-Kenya. A sample size of 153 respondents that included doctors, nurses, physiotherapists, clinical officers and dentist were interviewed. A census technique was adopted in recruiting the study participants. A structured questionnaire adopted from the revised pain knowledge and attitudes questionnaire (RPKAQ) (Clenzo *et al.*, 2016) was used as the data collection tool. The questionnaire captured the social demographic characteristics of the participants alongside the three thematic domains of the study that included knowledge, attitudes and practices in the management of chronic pains. After collecting the data, it was then entered into the computer using Microsoft access then exported for statistical analysis into the Statistical package for social sciences (SPSS) Version 24 for windows Chicago, Illinois. In assessing the association between levels of knowledge and practices in the management of chronic pains, Chi-Square test was applied and P-value that was less than 0.05 was considered statistically significant. The findings of the study shown that 76.5% of the respondents had relatively fair levels of knowledge and attitudes in pain management whereas only 9% (n= 14) were found to have adequate knowledge, positive attitudes and applied standard method of pain management as per WHO. 62% of the respondents exhibited good practices with regards to management of cognitive or behavioral chronic pains while only 9% (n=14) used best practice in diagnosing of chronic pain. The findings of the study also shown that there were statistically significant association between levels of education (p-value 0.008), age range (p-value 0.008), cadre (p-value 0.035) and the level of clinicians' knowledge, attitudes and practices towards assessment and management of chronic pain. In conclusion majority of the clinicians (76.5%) at Tenwek hospital only exhibit a fair level of knowledge, attitudes and practices in management of chronic pains. The study recommends that targeted in-service and continuous trainings in chronic pain management be organized for the clinicians at Tenwek hospital. This is to acquit them with required levels of knowledge, develop positive attitudes and contemporary methods of chronic pain management approaches for purposes of harmonizing knowledge, attitudes and practices of chronic pain management in the hospital.

Keywords: Chronic Pain, Knowledge, Attitudes and Practices, pain.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Chronic pain that can be defined as a long-standing pain that persists beyond the usual recovery period or occurs along with a chronic health condition, such as arthritis, low-back pains, cancer pains among others, can be "on" and "off" or continuous (*Vardeh et al.,2016*). Patients with chronic pain often manifest with severe pain intensity, activity limitation, participation restrictions, poor quality of life and poor work outputs(*Goldberg & McGee, 2011*). In addition these patients incur high cost of care as result of prolonged utilization of health care services (*Salazar, Mico, & Failde, 2016*). Chronic pains are among the most common clinical conditions presented in referral hospitals like Tenwek Hospital and they are usually associated with high socio economic and health burden unto the patients, clinicians and the health care sector in general (*Goldberg & McGee, 2011*).

Despite efforts by WHO in coming up with a standardized algorithms for management of various types of chronic pains, clinicians continue to exhibit varied levels of knowledge, attitudes and management approaches which is a major public health concern on the plight of these patients living with chronic pains (*Nuseir, Kassab, & Almomani, 2016*). Several factors have been attributed to the development of chronic pain among them being both intrinsic and extrinsic factors that span from the patients morphological characteristics, primary tissue injuries, extent of the injury types of management instituted to the primary site of injury or their environments (*Taherdoost & Group, 2017; Ajay & Micah, 2014*). For instance, pain catastrophization, genetic profile, emotion, psychological and cognitive behavior are common intrinsic risk factors for chronic pain (*Pincus, Burton, Vogel, & Field, 2003; Malfliet et al., 2017*).

The effective managemnt of chronic pain is purely dependent on the clinicians knowledge, attitudes and instituting of appropriate pain management approaches in the management of different types of chronic pains. (*Nuseir, Kassab, & Almomani,*

2016) Consequently, misclassification, inappropriate treatment of chronic pain and lack of access to specialized pain management can serve as extrinsic risk factors exacerbating the suffering of the patients who are living with chronic pains. (Ranger, Johnston, & Anand, 2007). As such, classification of chronic pain is crucial in clinical practice as it forms the basis for accurate diagnosis, which ultimately leads to appropriate interventions (Nijs, Goubert, & Ickmans, 2016)). There are three main categories of chronic pain namely; neuropathic, nociceptive and central sensitization. According to a report from the International Association for the study of Pain (2015), neuropathic chronic pain can result from known or idiopathic dysfunctional causes in the nervous system that are characterized by numbness, hyperalgesia, altered sensation, burning pain and pain symptoms that follows a specific anatomical dermatomal patterns in the body (*Haanpää et al., 2009*).

In particular, clinicians' knowledge in carrying out comprehensive neuro-examination is crucial in diagnosing the primary cause of neuropathic pains for purposes of instituting appropriate management interventions (*Gureje et al., 2003*). The clinicians' knowledge and attitudes is important in managing of chronic nociceptive pain (*Haanpää et al., 2009*). The chronic nociceptive pain can either be primary or secondary and it develops after the natural immune-protective body mechanism which institutes appropriate inflammatory responses following injuries to body tissue, it emanates from either an infection or a surgical procedure (*Gureje et al., 2003*). As such the secondary nociceptive chronic pain that is the disproportionate pain that lingers beyond normal tissue healing period need to be clearly distinguished from other types of pains (*Haanpää et al., 2009*). Other types of chronic pain that are hard to diagnose and manage are the central sensitization chronic pain that is are generalized hypersensitive chronic pain that is diffused in the patients body and is neither related to any tissue damage nor representing in any form of anatomical dermatomal patterns (Nijs, Goubert, & Ickmans, 2016; *Jo Nijs et al., 2014*).

Previous studies have shown that, patients with chronic pain presents with characteristic signs and symptoms including numbness, weakness, cognitive deficits, sleeping difficulties (*Jo Nijs et al., 2014*). There exist various assessment and

diagnostic tools and procedures for chronic pain, for example contacting clinical interview, physical examination and concomitantly assessing the patient's mood and fears through standardized self-reported instruments. (Dansie & Turk, 2013; *Leeuw et al., 2007*). This is in attempt to aid accurate diagnosis hence appropriate intervention for better treatment outcome (Miller, 2012). Some of the commonly used chronic pain assessment, diagnostic tools and procedures include; multidimensional and unidimensional pain rating scales, the unidimensional rating scale is commonly used to assess pain intensity (Dansie & Turk, 2013)). The numerical rating scale (NRS) and the verbal rating scale (VRS) are the most commonly used to provide single or generalized rating of chronic pains (Dansie & Turk, 2013). The Computerized Tomography (CT) scan, Magnetic Resonance Imaging (MRI) and radiological studies are commonly used diagnostic tools (Kim, Kim, & Nabekura, 2017). Researchers have observed that there is an over dependency and inappropriate utilization of neuroimaging by health care providers (Lehnert & Bree, 2010). However, results of imaging cannot be considered in isolation but should be correlated with physical examination (PE) in diagnosing chronic pain (Vardeh, Mannion, & Woolf, 2016). Clinician encounters patients with chronic pain in practice, however, most often the latter's outcomes are not desirable because of uncertainties of choosing and giving the appropriate treatment. With the goal for chronic pain management being to relieve pain and improve function, a bio-psychosocial approach is currently preferred for improved outcome (Bever, Watts, & Gatchel, 2016). Self-care management and patient education is also an integral part that is promoted by HCP (Louw, Zimney, Puente, & Diener, 2016). Other treatments include: pharmacological intervention, noninvasive such as physical therapy, exercise and psychological treatments like cognitive behavioral therapies (Agency for Healthcare Research & Quality, 2017).

Chronic pain is one of the most common problem encountered by clinicians in daily practice (*Goldberg & McGee, 2011*). However, existing literature shows that patients living with chronic pains at times experience poor and inappropriate pain management interventions from the clinicians as a result of misdiagnosis and inappropriate treatment approaches associated with clinicians' limited knowledge and negative attitudes on assessment and management of patients with chronic pain

(Lin *et al.*, 2016). Previous studies done from developed countries like the USA have shown that with appropriate knowledge, correct attitude and use of proper management method is key to attainment of desired treatment outcomes in managing of chronic pains (Miller, 2012), UK (Chiaretti *et al.*, 2013; Lin *et al.*, 2016; Yaqoob & Nasaif, 2015; Kheshti, Namazi, Mehrabi, & Firouzabadi, 2016) among others. For instance, A cross-sectional study done in a tertiary academic hospital in the United States of America on knowledge, attitudes and practices among physicians and anesthesiologists, established that they had a substantial knowledge gap, negative attitudes and hesitation towards prescription of opioids to long-term chronic non-cancer pain patients by physicians and anesthesiologists and hence the treatment outcomes in managing Chronic pains among these patients were equally not as good (Lin *et al.* (2016). An similar study done the Uganda national referral hospital on the clinicians' level of knowledge and skills in diagnosing and management of acute pains in critically ill patients established that clinicians exhibited knowledge gap in key concepts of pain management that served as a major barrier to doing quality pain assessments and management of pains in critically ill adult patients (Kizza, *et al* 2016). Similarly another study conducted in South Africa by Clenzo *et al.* (2016) on the levels of knowledge among orthopedic manipulative clinicians in acute and chronic pain management among the sports men established that that they had limited knowledge in assessment and measurement of chronic pain and in developmental changes in pain perception. In Kenya there's there is Paucity of data on this area on the levels of knowledge, attitudes and management practices in chronic pains among clinicians and particular in Tenwek hospital hence the basis of this proposed study at Tenwek Hospital.

1.2 Statement of the Problem

Chronic Pain is one of the most common cause of patient referrals and hospitalization in tertiary level hospitals for specialized management ((Goldberg & McGee, 2011). Chronic pains therefore are a major contributor to health burden in the tertiary level facilities and a major cause of patient congestion in the inpatient facilities as well as costly and impoverishing state to many patients(Breivik, Collett, Ventafridda, Cohen, and Gallacher (2006). The attainment of efficient, timely and

cost-effective treatment outcomes of these chronic pains has also remained a major challenge to many patients as the level of knowledge, attitudes and management approaches have been shown to be in variance across different cadres of clinicians in different facilities across the globe (*Magalhães et al., 2012, Chiaretti et al., 2013; Lin et al., 2016; Yaqoob & Nasaif, 2015; Kheshti et al., 2016*). While existing literature confirms that the clinician's level of knowledge, their positive attitudes and instituting of appropriate management intervention is the key enabler to the attainment of the desired treatment outcomes to patients with chronic pains, Kenya continues to be dogged with paucity of data on levels of knowledge, attitudes and management practices of chronic pains. (International Association for the study of Pain, 2015; Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006) As such, chronic pains will continue to cause significant impacts on the socio economic and health burden to patients, clinicians and the society in general (Goldberg & McGee, 2011; *Salazar et al., 2016*), studies have shown that, patient presenting in hospitals with chronic pain often incur high cost of care as result of prolong utilization of health care services, some have been misclassified or misdiagnosed and have led to poor treatment outcome(*Goldberg & McGee, 2011; Salazar et al., 2016; Breivik et al., 2006*).

When clinicians lack the necessary knowledge in diagnosing and managing chronic pains, the end result is that, patients presenting with chronic pain are likely to be misclassified or misdiagnosed leading to inappropriate intervention and ultimately undesirable treatment outcomes and therefore increasing the already high health and socio-economic burden of the condition (Stewart, Ricci, Chee, Morganstein, & Lipton, 2003). Therefore, establishing level of knowledge, clinical practice and attitudes amongst clinicians at Tenwek Hospital, regarding assessment and management of patients with chronic pains cannot be over emphasized.

1.3 Justification of the study

Lack of data on the clinicians level of knowledge on how to make proper diagnosis, instituting of appropriate management interventions to different types of chronic pains, as well as establishing whether or not they have the correct attitudes in

managing chronic pains will continue having negative long term social economic impacts to the patient, health care facilities and the country at large. Congestion of patients in tertiary health care facilities will continue due to prolonged hospitalization of patients, while to the patients themselves will continue being impoverished by the costly and unending visits to hospitals, with increasing health care burden to families and the country at large. Patient with chronic pain will continue to experience increasing pain intensity, activity limitation and participation restriction leading to poor quality of life. Poor assessment and attendant maltreatment prolongs impairment experience and return to function, it may also result to absentia from work, low productivity and economic losses. Therefore, this study was worthwhile to forestall such potential impact of chronic pain on patients, family and society at large.

1.4 Significance of the study

The findings of this study will be useful in filling the existing knowledge gap, by providing more information on the level of knowledge, clinical practice and attitudes amongst clinicians regarding assessment and management of patients with chronic pain. It will also be important in informing the probable treatment strategies for patients suffering from chronic pain in referral health facilities including Tenwek Hospital. Further, this may help in reducing the health burden on patients suffering from chronic pain, their families, society and as well as reducing congestion in the tertiary level facilities.

1.5 Objective

1.5.1 Aim of the Study

To establish the level of knowledge, practices and attitudes amongst clinicians towards assessment and management of patients with chronic pain, in a tertiary hospital in Kenya

1.4.2 Specific objectives

1. To assess the level of knowledge and attitudes on assessment and management of chronic pain amongst clinicians at Tenwek mission Hospital.
2. To establish the current practices on the assessment and management of chronic pain among the different carders of clinicians at Tenwek Hospital
3. To establish the clinician attitudes toward the chronic pain diagnosis and management at Tenwek mission hospital
4. To establish the association between clinicians' demographics with their levels of knowledge, practices and attitudes towards assessment and management of chronic pains patients presenting with chronic pain.

1.5 Research question

1. What were the level of knowledge on assessment and management of chronic pain amongst clinicians at Tenwek Hospital?
2. What were the attitudes of clinicians regarding assessment and management of patients with chronic pain?
3. What were the current practices on the assessment and management of chronic pain amongst clinicians at Tenwek Hospital?
4. What were the association between clinicians' socio demographic characteristics and the level of knowledge, attitudes and practices towards assessment and management of patients presenting with chronic pain?

1.6 Hypothesis

1.6.1 Null hypothesis (H₀)

The different carders of clinician working at Tenwek mission hospital do not depict any significant differences in their levels of knowledge in the management of chronic pains, nor variances in the diagnosis and management of chronic pains as they all have a positive attitudes towards the chronic pain management.

1.6.2 Research Hypothesis (H₁)

The different carders of clinicians working in Tenwek mission Hospital depict significant variances in their levels of knowledge on how to manage different types of chronic pains; they also differ in their practices in the management of chronic pains as they also show variances in their attitudes towards chronic pains management

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents the existing scholarly literature reviewed in the scope of the current study in the three domain areas of interest regarding clinician's levels of knowledge, practices and attitudes in the assessment, diagnosis and management of chronic pains. The chapter is hence organized as follows, it starts with epidemiology of chronic pains, followed by definition of chronic pain, clinicians' knowledge towards chronic pain, clinicians' attitudes regarding assessment and management of patient with chronic pain, current practice on assessment and management of chronic pain, conceptual frame work for knowledge, attitudes and practices, evidence from systematic reviews on knowledge and attitudes and practices of clinician caring patients with chronic pain, evidence from international studies conducted in tertiary care institutions on knowledge, attitudes and practices of clinicians caring for patient with chronic pain and lastly, evidence from African studies on clinicians' knowledge, attitudes and practice towards assessment and management of chronic pain.

2.2 Epidemiology of chronic pain

In a study conducted by Breivik, Collett, Ventafridda, Cohen, and Gallacher (2006) on the "prevalence, impact in daily life and treatment" found that 19 percent of European adults are affected by chronic pain, that seriously affect their activities of daily living and the quality of life. Similarly, a 2010 National Health and wellness survey (NHWS) conducted in Spain by Langley, Ruiz-Iban, Molina, De Andres, and Castellón,(2011) reported that 17.25% of Spanish are affected by chronic pain, Another survey done by Gureje, Von Korff, Simon and Gater, (2003) as part of World Health Organization collaborative Study conducted in 15 centers in Asia, Africa, Europe and America (n- 25916) reported 22% of primary care patients had chronic pain, the burden of chronic pain seriously affects the Patients , health care and the country's economy Patients with chronic pain often report high level of pain intensity, activity limitation, participation restrictions and poor quality of life, Patient

with chronic pain often incur high cost of care as result of prolong utilization of health care services (Salazar, Mico, & Failde, 2016; Goldberg & McGee, 2011).

2.3 Definition of chronic pain

Chronic Pain is a type of pain that persist beyond the normal tissue healing time and its thought to be without real biological cause (International Association for the study of pain, 2015). As pain perssit the relationship between pain and tissue becomes less predictable because its modulated by many factors which include somatic, psychological and social factors' (Moseley 2008). This definition instantiate the biopsychosocial perspective on chronic pain that is required to capture evidence-based assessment and management of patient with chronic pain.

2.4 Clinicians' knowledge towards chronic pain

Existing literature shows that chronic pain is a complex condition that requires Clinicians to have a wider knowledge majorly on the following aspects; 1) physiological basis of pain, 2) Psychological knowledge, 3) developmental aspect of pain 4) knowledge on assessment and measurement of chronic pain, 5) cognitive/ behavioral aspect of pain and lastly pharmacological aspect of chronic pain management (*Clenzos et al. 2016*).

According to Oxford English dictionary (tenth edition) (2000), knowledge is defined as information and skill acquired through experience or education, Clinicians' knowledge on the science behind pain nociception and it's neurophysiology greatly influences their ability to conduct clinical assessment of patients with chronic pain which in turn determines treatment approach. Poor knowledge is associated with poor assessment and management and ultimatetly poor outcome (Subhashini, Vatsa, & Lodha, 2009). Studies have shown that health care professional have inadequate knowledge towards assessment and management of patient with chronic pain, (*Chiaretti et al., 2013*; Subhashini, Vatsa, & Lodha, 2009; Clenzo et al. 2016). A study by *Al-quliti et al. (2015)* on the level of knowledge among clinicians (N=100) recruited from tertiary hospitals in Almadinah and Almunawwarah, Saudi Arabia, found knowledge deficit among them that was attributed to poor treatment outcomes

on their patients with chronic pain. Similarly, a study by *Kheshti et al.,(2016)* on the level of knowledge, attitudes and practices among clinicians (n=213, 114 nurse and 99 medical residents) in Iran also found inadequate knowledge on both cadres of clinicians. Moreover, a study by *Khawla, Kassab and Almomium, (2016)* on clinicians(n=662) managing children with pain in seven Hospitals in Jordan also found insufficient knowledge on clinicians caring for children with pain.

Most studies have shown that high level of knowledge influences positive attitudes which translate to good practices (*Enskär, Eaton, & Harding, 2007; Gustafsson & Borglin,2013*). The knowledge and attitudes survey regarding pain and revised pain knowledge and attitude survey tool has been used to measure the level of knowledge amongst clinicians, the developers of these tools recommends that knowledge and attitudes be tested together and avoid testing each items separately (*Clenzo et al. 2016; Ferrell & McCaffery, 2012*).

2.5 Clinicians' Attitudes regarding assessment and management of patient with chronic pain.

Attitude is a complex cognitive state that involves beliefs, feeling, values and desire to act in a certain way, due to this complexity of definition it reflex its difficulty to measure (*Icek, 2001*). The recent systematic review by *Refshauge et al. (2017)* on physiotherapists' beliefs and attitudes influences clinical practices (n –five quantitative studies and five qualitative studies) showed that clinicians' attitudes and beliefs influences clinical practical approaches. A study by *Enskär, Eaton and Harding, (2007)* on Attitudes to and knowledge about pain and pain management, of nurses working with children with cancer (n-106 nurses), showed that positive attitude is highly influenced by high level of pain knowledge. On contrary, a study done by *Yaqoob and Nasaif, (2015)* in Ireland on nurses' knowledge and attitudes towards pain assessment and management for adult sickle cell disease patients during sickling crisis (N= 30 Nurses), found that nurses had poor knowledge and negative attitudes towards sickle cell disease, as mention earlier by the researcher, the attitudes and knowledge correlate together and many researcher recommend that

both knowledge and attitudes be tested together and avoid separating them. This will be easy when carrying out data analysis (Ferrell, & McCaffery, 2012).

Similar to discussion in knowledge domain, the knowledge and attitudes survey regarding pain and revised pain knowledge and attitude survey has been used to measure the attitudes and knowledge of clinicians (Clenzo *et al.*, 2016; Ferrell & McCaffery, 2012).

2.6 Current Practice on assessment and management of chronic pain

Clinician encounters patients with chronic pain in practice, however, most often the latter's outcomes are not desirable because of uncertainties of choosing and giving the appropriate treatment. With the goal for chronic pain management being to relieve pain and improve function, a bio-psychosocial approach is currently preferred for improved outcome especially when provided by multidisciplinary team; this approach involves three perspectives, biological, psychological and social factors. Clinicians should consider these domains while assessing and managing patients with chronic pain. On the other hand biomedical approach which only consider biological domain has been cited as a retrogressive practices associated with poor outcome, their patient have continued to experience reduced quality of life, increasing disability and high cost of health care (Bervers *et al.*, 2016). Self-care management and patient education is also an integral part that is promoted by HCP (Louw *et al.*, 2016). Other treatments include: pharmacological intervention, noninvasive such as physical therapy, exercise and psychological treatments like cognitive behavioral therapies (Agency for Healthcare Research & Quality, 2017). Most studies have shown poor practice in caring for patients with chronic pain

In a study on clinicians' practices (n=77) in North India Subhashini *et al.* (2008) found that most clinicians had poor practices to control chronic pain and therefore the need to improve clinicians practices regarding assessment and measurement chronic pain. Similarly, A study by Lin *et al.*, (2016) among Taiwanese physician's (n=355) with regard to their practices, found that the physicians were hesitant towards prescribing long term opioids to patients with chronic non cancer pain. These poor practices may have largely led to more suffering among patients with

chronic pain, loss of productivity and poor quality of lives. A systematic review of quantitative (n=5) studies and qualitative (N=5) by *Gardner et al., (2017)* on physiotherapist's attitudes and beliefs influencing their clinical practices, found that their practices inclined more towards biomedical approach which have led to poor recovery and disability among patients with chronic low back pain. Therefore assessing Clinicians current practices is paramount in ensuring optimal care for patient with chronic pain.

2.7 Conceptual frame work for knowledge, attitudes and practices

This conceptual / theoretical frame is guided by researchers that have found knowledge, attitudes and practices to be highly correlated. (Subhashini, Vatsa, & Lodha, 2009; *Chiaretti et al.,2013*; Magalhães, Costa, Cabral, & Machado, 2012; Enskär, Eaton, & Harding, 2007; Gustafsson & Borglin,2013). Adequate knowledge is always associated with positive attitudes and more often determines the kind of practice they adopts, in most cases they utilize current evidence based practices like biopsychosocial approaches which is more effective in managing patients with chronic pain, on contrary poor knowledge leads to negative attitudes and many instances adopt biomedical approaches resulting to poor outcome, education or training health care professional improves their level of knowledge and attitudes hence best practices in managing chronic pain (Gustafsson & Borglin, 2013). As illustrated in Figure 2.1.

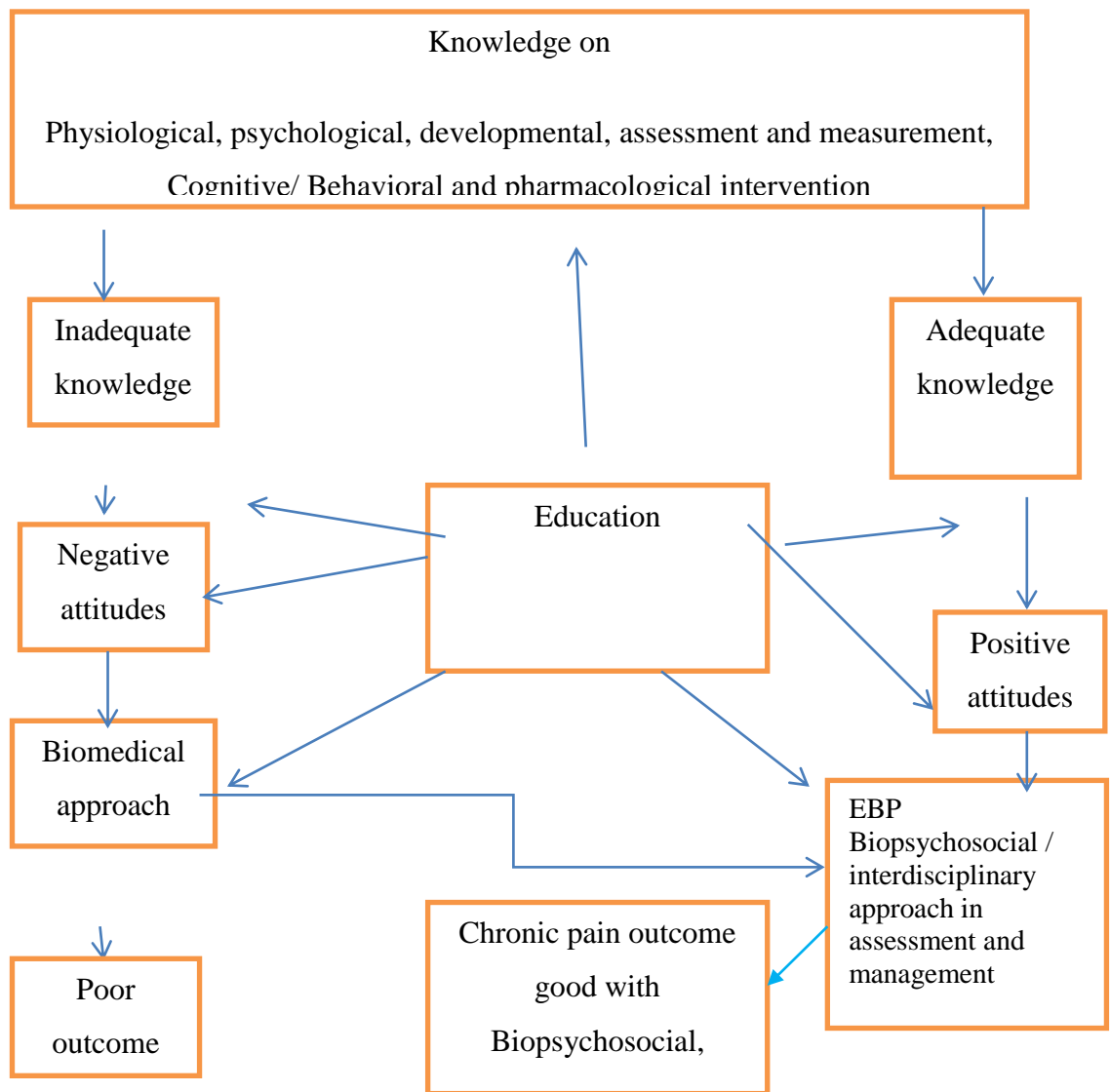


Figure 2.1: Conceptual Frame work for knowledge attitudes and practices

2.8 Evidence from systematic reviews on knowledge and attitudes and practices of clinician caring patients with chronic pain

In a recent systematic review of quantitative and qualitative studies on physiotherapists' beliefs and attitudes conducted in Australia, found that physiotherapists often have a perception that a patient with pain needs to delay from returning to work or activities because it could lead to worsening of the patient's condition. They also found that physiotherapists still adopt a biomedical approach in their practice which is based on the notion that clinical pain is always related to tissue injury. In another review on current practices and advances in pediatrics pain management among health care professionals, *Chiaretti et al. (2013)* found that there was deficiency of knowledge on pediatric pain management. In a cross-sectional survey which investigated professional attitudes and beliefs of Brazilian physiotherapists concerning the assessment and management of chronic low back pain. Magalhães, Costa, Cabral and Machado (2012) found that being male and less experienced physiotherapist often follow a biomedical approach.

2.9 Evidence from international studies conducted in tertiary care institutions on knowledge, attitudes and practices of clinicians caring for patient with chronic pain.

Research findings on inadequate knowledge and negative professional attitudes regarding assessment and management of patients presenting with chronic pain at tertiary care facilities have been reported in several cross-sectional studies (*Lin et al., 2016; Yaqoob & Nasaif, 2015; Kheshti, Namazi, Mehrabi, & Firouzabadi, 2016*). In a cross-sectional study to investigate the knowledge, attitudes and practices among physicians and anesthesiologists in a tertiary academic hospital in the United States of America, *Lin et al. (2016)* found that there is a substantial knowledge gap, negative attitudes and hesitation towards prescription of opioids to long-term chronic non-cancer pain patients by physicians and anesthesiologists. Further, another cross-sectional quantitative study conducted in the Middle East by Yaqoob and Nasaif (2015) reported finding that nurses had inadequate knowledge and negative attitudes on assessment and management of patients presenting with pain associated with

sickle cell disease. Kheshti et al., (2016) also reports finding knowledge gaps and negative attitudes on assessment and management of chronic pain by different health care professionals in yet another cross sectional study conducted in Iran.

A recent survey conducted by *Bouri et al.(2018)* in Arabic East Mediterranean region investigating knowledge of pain and perceived barriers to optimal pain management among orthopedic health care practitioners in five hospitals reported that Medical doctors and nurses had adequate knowledge and could therefore easily assess and recognize pain, and that the most perceived barriers towards pain management were lack of local policies and guidelines.

2.10 Evidence from African studies on clinicians' knowledge, attitudes and practice towards assessment and management of chronic pain.

Literature from the African continent regarding the knowledge, attitudes and practices of health Care professionals on assessment and management of patients with chronic pain at tertiary care clinical settings is relative scanty. However, the findings of the few reviewed studies largely correlate with the findings of the studies conducted in the European, American and the Asian clinical settings. For example, in a cross- sectional survey conducted in Kenya which evaluated the knowledge and attitudes of various health care workers regarding pain assessment and management in children, the country's national referral hospital, Jin (2015) found a significant knowledge gap with difference in knowledge levels between different health care professionals with doctors having higher knowledge than nurses. Jin (2015) also reported that years of clinical experience were inversely proportional to level of knowledge, this finding by Jin (2015) is in contrary to the expected notion that practice experiences improve clinician's knowledge. In a Ugandan cross-sectional survey that assessed nurses' knowledge and skills of assessing acute pain in critically ill patients at national tertiary hospital, Kizza, Muliira, Kohi and Nabirye (2016) found that the nurses had knowledge gap in key concepts of pain management which curtailed quality of assessment and management in critically ill adult patients. Furthermore, in another regional cross-sectional survey conducted in South Africa by *Clenzo et al. (2016)* investigated pain knowledge of sports and orthopedic

manipulative physiotherapists found that there was limited knowledge in assessment, measurement and developmental changes in pain perception.

CHAPTER THREE

METHODOLOGY

3.1 Study location and setting

This study was conducted at Tenwek Hospital which is a faith-based tertiary hospital with an inpatient bed capacity of 300 beds. The Hospital offers several specialized in-patient and out-patient clinical services which include among others; orthopedics, continuous care clinics, surgical clinics, neurosurgery, physiotherapy and rehabilitation and acute trauma and palliative care. Tenwek Hospital serves as the main referral center for the West and Northern parts of the Great Rift Valley region. Tenwek Hospital also has training college running accredited undergraduate programs in nursing and clinical medicine. The Hospital is situated North-East of Bomet county which is located 240 Kilometers (150 miles) from Nairobi city.

3.2 Study design

This was a descriptive cross-sectional study designed that utilized both qualitative and quantitative approach in collection of data at a single point in time.

3.3 Study Population and sampling

The targeted study population was composed of different carders of clinician working at Tenwek mission hospital as per table 3.1 below.

Table 3.1: Study population

Professional	Number
Medical Officers	14
Residence	13
Specialist	7
Nurses	127
Clinical officers (physician assistants)	43
Anesthesiologist	15
Physiotherapist	4
Total	240

3.4 Sampling method

This study adopted census method because of the small number of the study population (n=240). The census method involves the process of collecting, recording and analyzing data collected from the whole study population. Although this method is expensive and time consuming it has no sampling error commonly seen in probability sampling methods and gives precise results. In addition, census method is best used for heterogeneous population which is similar to current study (Ajay & Micah, 2014).

3.5 Selection Criteria

3.5.1 Inclusion Criteria

This study included all members of the different health care cadres working at Tenwek Hospital which includes; Doctors, Residents, Medical Officers, Clinical Officers, Nurses, Anesthetist and Physiotherapist. Only those who met the following criteria were included in the study.

1. Those who were directly caring for patients with pain.
2. Those who were willing to participate in the study.

3.5.2 Exclusion Criteria

In this study the researcher excluded clinicians;

1. Who were not directly involved with caring for patients with pain.
2. Who were absent from official duty during the time of data collection.

4.6 Data collection tools and materials

For purposes of data collection for the study, the following tools/ materials were used. 1) Participants' study information sheet which explains the aims and objectives of the study and the expectations of the respondents (appendix 1). 2) participants consent form which provided information to the respondents and also provided a written prove of respondent's willingness (appendix II) 3) study approval letters from Jomo Kenyatta University Of Agriculture and Technology and Tenwek

Hospital (appendix VIII and IX respectively) and 4) the study questionnaire (appendix III) which had six parts and each parts had Ten question except part two and the last part which had fourteen and twenty three question respectively. The questionnaire was designed to measure a wider knowledge, attitudes and practices appropriate for clinicians which includes; the physiological basis of pain, psychological factors of pain perception, the developmental changes. Similarly, the item on the assessment and measurements of pain, cognitive or behavioral methods of pain management and pharmacological management of chronic pain was tailored to measure both knowledge and current practices. The developers of these measuring tools advise not to separate items and measure individually. Each item was scored and total score ranged from 0 to 100 percent. The tool Takes 20 -30 minutes to administer and adequate knowledge was be considered to be more than 75 percent indicating seriousness required of clinicians managing pain (Clenzos, Naidoo, & Parker, 2016).

3.7 Validity and Reliability of the Data collection tools

The content of this tool was derived from validated and reliable tools; the revised pain knowledge and attitudes questionnaire (RPKAQ) and the knowledge and attitudes survey regarding Pain (KASRP). The content of RPKAQ tool was reported to have acceptable reliability of 0.65 Cronbach's alpha and acceptable internal consistency of 0.62 Cronbach's alpha (Clenzos, Naidoo, & Parker, 2016). On the hand, the KASRP tool has been developed over many years and used extensively since 1982 to the present. The KASRP tool was revised by Ferrell and McCaffery in the year 2012 and has been used to assess different professional's knowledge, attitudes and current practices regarding assessment and management of patient with pain, the test- retest reliability of KASRP was established to have alpha $r > .80$ and internal consistency reliability of alpha $r > .76$, in addition, the Content validity of this tool was established by the review of pain experts, the American Pain Society, the World Health Organization, and the National Comprehensive Cancer Network Pain Guidelines. The items of the first five parts of the questionnaire was adopted from revised pain knowledge and attitude questionnaire (RPKAQ) and the last part of the study tool was adopted from the knowledge and attitudes survey Regarding

Pain (KASRP) questionnaire which mainly focus on pharmacological management of pain.

3.8 Data collection procedures

3.8.1 Recruitment of study participants.

This study targeted a population of 240 participants. Out of 240 participants, twenty seven (n=27) were on leave and thirteen (n=13) declined to participate in the study. Two hundred (n=200) were invited to participate in the study and they were all given a written consent (Appendix II). However, out of two hundredth (n=200) participant thirty three (n=33) did not return their questionnaire and fourteen (n=14) were further removed from the study due to incomplete questionnaire and the remaining 153 were included for analysis as illustrated in figure 4.1.

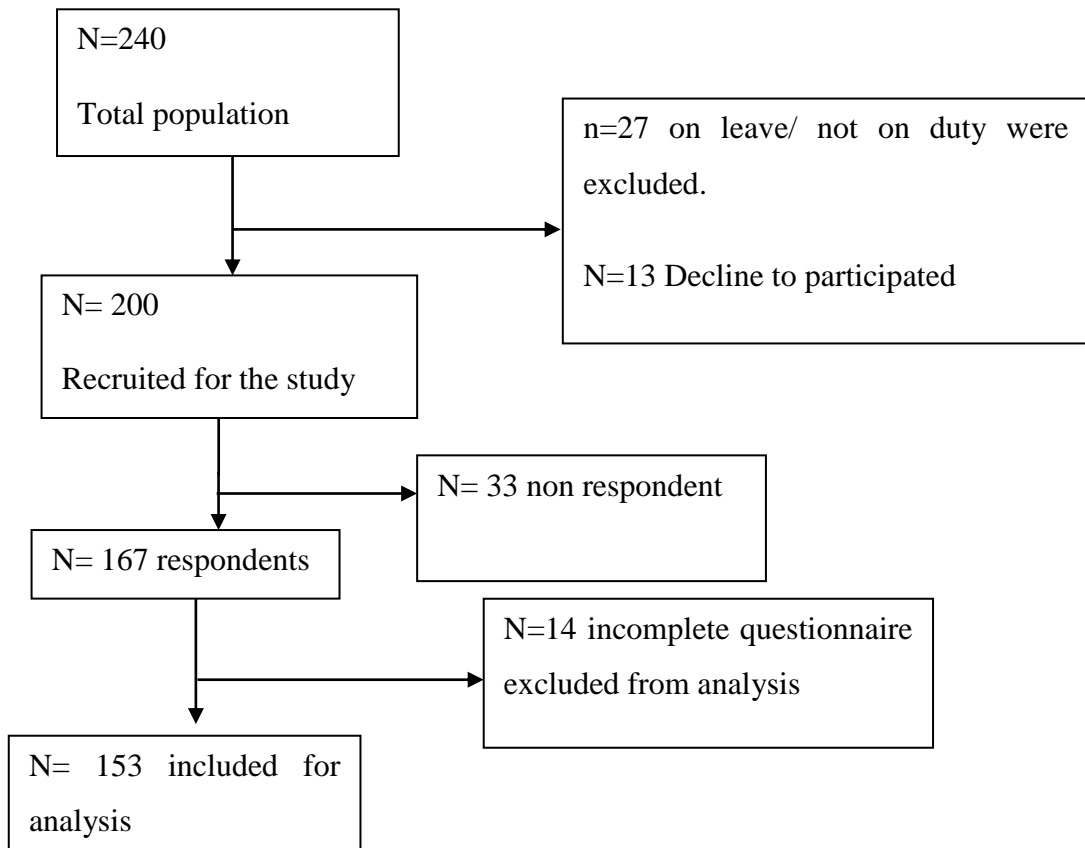


Figure 3.1: Recruitment of study participants.

3.9 Data handling, management and Analysis

Data from complete questionnaire was entered into Microsoft Excel sheet using predetermined data variables which included; Age, gender, cadre, years of practice, level of knowledge on chronic pain, professional practices and attitudes among others and was cleaned and coded. The data was then imported into SPSS (Statistical package for social sciences) Version 24 soft-ware for processing and statistical analysis.

Descriptive statistics were used for analysis and data were presented in form of summary tables and charts. The socio-demographic characteristics of clinicians were presented in proportions. Chi-Square of association between the socio demographic characteristics and the level of knowledge, attitudes and practices of clinicians managing chronic pain was applied. P-value that was less than 0.05 was considered

statistically significant. Each item was scored and total score ranged from 0 to 100 percent. A score of 75% and above represented adequate knowledge, attitudes and good practices and any score below 75% represented inadequate knowledge, attitudes and poor practices (*Clenzo et al. (2016)*).

3.10 Ethical Consideration

Ethical review and approval for the study protocol was sought from Jomo Kenyatta University of Agriculture and Technology Ethics Review Committee (Appendix VIII) and Tenwek Hospital Ethical Review Committee (ERC) (Appendix IX) and study permit was obtained from national Commission for Science, Technology and Innovation (NACOSTI) (Appendix VII). Permission to use RPKAQ questionnaire was obtained from developer through an email (Appendix VI) and KASRP tool was retrieved from the internet with open access permission from the developer (Appendix VI).

Written consent (Appendix II) was sought from the participants after explaining through a written information sheet (Appendix I) the nature and purpose of the study to them. The collected information was kept confidential and the identity of the individual participants was protected by use of codes instead of names. The collected data was stored in a lockable cabinet and computer that was used was locked using password.

CHAPTER FOUR

RESULTS

4.1 The demographics of the clinicians' studied

The demographics of the clinicians studied were (52%; n= 79) males and (48%; n=74) females. The age distribution was studied and the majority of the participants (55 %; n=84.) were aged less than 30 years followed by those aged 31-40 (30%; n=47). The years of clinical experience had majority (71%; n= 108) of the participants with less than 5 years of experience followed by those with 6 years and above of experience (17%; n=27). Of the 153 participants, the majority had diploma qualifications (70 %; n=106) in the different health care professionals. The nursing cadre comprised of 52% of the study participants, followed by, Medical Doctors 22% and Clinical Officers (17%) with, Physiotherapists (2%) and Dentists (2%) having the least representation as illustrated in Table 4.1.

Table 4.1: Showing the demographics of the clinicians studied

demographic characteristics	Frequency (n)	%	
Gender	Males	79	52 %
	Females	74	48 %
Age group	< 30 Years	84	55%
	31-40 Years	47	30%
	41- 50 Years	19	13%
	> 50 Years	3	2%
Years of clinical practice	1-5 Years	108	71%
	6- 10 Years	27	17%
	>11 Years	18	12%
Education level	College Diploma	106	70%
	Bachelor's Degree	31	20%
	Master's Degree	8	5%
	Doctorate degree	8	5%
Clinician cadre	Nurses	79	52%
	Clinical Officers	26	17%
	Medical Doctors	34	22%
	Physiotherapist	3	2%
	Anesthetists	8	5%
	Dentist	3	2%

4.3 Level of knowledge and attitudes on assessment and management of chronic pain

A score of 75% and above was considered in this study to represent a distinction score that clinicians must have to be considered to have adequate knowledge, attitudes and practices and those who scored below 75% were considered to be having inadequate knowledge, attitudes and practices. Majority of 153 participants 91% (139) had inadequate knowledge and negative attitudes. On physiological basis of pain, majority of clinicians 90% (n=137) had inadequate knowledge and attitudes. While 86% (n= 132) of clinicians had inadequate knowledge and attitudes on psychological factors of pain perception. Over half 69% (n= 105) of the participants had inadequate knowledge and attitudes on developmental changes in pain perception as illustrated in Table 4.2

Table.4.2: Level of knowledge on assessment and management of chronic pain

	Parameters used to assess level of knowledge		Adequate knowledge n (%)	Inadequate knowledge n (%)	Total (n=153)
Level of knowledge on assessment and management of chronic pain	Physiological Basis of Pain		16 (10%)	137 (90%)	153(100%)
	Psychological Factors of Pain Perception		21 (14%)	132 (86%)	153(100%)
	Developmental Changes in Pain Perception		48 (31%)	105 (69%)	153(100%)
	Assessment and Measurement of Pain	and of	14 (9%)	139 (91%)	153(100%)

(N-153)

Table.4.3: Level of attitudes on assessment and management of chronic pain

	Parameters used to assess level of attitudes		Adequate knowledge n (%)	Inadequate knowledge n (%)	Total (n=153)
Level of attitudes on assessment and management of chronic pain	Physiological Basis of Pain		16 (10%)	137 (90%)	153(100%)
	Psychological Factors of Pain Perception		21 (14%)	132 (86%)	153(100%)
	Developmental Changes in Pain Perception		48 (31%)	105 (69%)	153(100%)
	Assessment and Measurement of Pain		14 (9%)	139 (91%)	153(100%)

(N-153)

4.4 Current practice of assessment and measurement, cognitive/ behavioural and pharmacological intervention of chronic pain.

Regarding current practice on assessment and measurement, cognitive/ behavioral and pharmacological intervention of chronic pain, the majority of the participants (60% n= 92) use best practice in cognitive/behavioural management of chronic pain, while only few participants (8%; n= 13) and 7%; n=11) use best practices in assessment and measurement of chronic pain and pharmacological management of patients with chronic pain respectively as illustrated in Figure 4.2

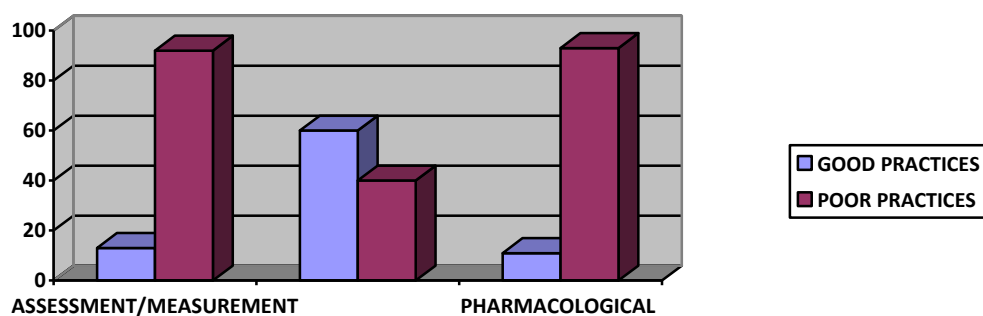


Figure 4.1: Current practice of assessment and management of chronic pain

4.5 Associations between demographic characteristics and knowledge and attitudes regarding chronic pain

Demographic characteristics (Gender, age group, years of clinical practice and cadre) and level of knowledge and attitudes regarding assessment and management of chronic pain in different domains of the questionnaire was cross- tabulated. Chi square analyses were applied to determine their association and significant association was accepted at a P- value less than 0.05.

The results indicated a statistically significant association between age group and the level of knowledge and attitudes on pain physiology domain ($X^2 = 11.869$, $df= 1$, $P= .008$), there was also a statistically significant association between level of education and the level of knowledge and attitudes on the same domain, ($X^2 = 38.3$, $df= 3$, $P < 0.001$). Furthermore, on the same domain of pain physiology, the results showed a statistically significant association between cadre and the level of knowledge and attitudes ($X^2 = 58.9$, $DF= 8$, $P < 0.001$) as demonstrated in table 4.3. There was also a statistically significant association between gender and the level of knowledge and attitudes on psychological factors of pain perception ($X^2= 4.312$, $df= 1$, $P= .038$) as illustrated in Table 4.4. However, there was no association between socio-demographic characteristics and the level of knowledge and attitudes on developmental changes in pain perception domain as illustrated in table 4.5.

Table 4.4: Demographic characteristic and level of knowledge and attitudes on pain physiology

Demographic characteristics	Level of Knowledge and attitudes on pain physiology		
	X² VALUE	do	P-value
Gender	.152	1	.696
Age Group	11.87	3	.008
Level of education	38.25	3	.001
Cadre	58.92	8	.001
Years of practice	1.809	2	.405

(n=153)

Table 4.5: Association between socio demographic characteristic and level of knowledge and attitudes on psychological factors of pain perception

Socio-demographic characteristics	Knowledge on psychological factors of pain perception		
	X² value	Df	p-value
Gender	4.312	1	.038
Age group	4.703	3	.195
Education Level	5.881	3	.118
Cadre	14.80	8	.063
Years Of Clinical Practice	3.475	2	.176

(n=153)

Table 4.6: Association between demographic characteristic and level of knowledge on developmental changes in pain perception

Socio-demographic characteristics	Knowledge On Developmental Changes In Pain Perception		
	X² value	Df	p-value
Gender	.075	1	.785
Age group	1.584	3	.663
Level of education	2.68	3	.444
cadre	8.056	8	.428
Years of clinical practice	1.834	2	.40

(N=153)

4.6 Association between demographic characteristics and current practices on assessment and measurement of chronic pain, cognitive/ behavioral and pharmacological management of chronic pain.

Demographic characteristic (Gender, age group, years of clinical practice and cadre) and Current practices on assessment and management of chronic pain in three subsection of questionnaire (assessment and measurement of pain, cognitive/ behavioural methods of pain relief and pharmacological management of chronic pain) were cross-tabulated and chi square test were applied to determine their association and P- values less than 0.05 were accepted.

The results showed statistically significant association between clinician's levels of education and the level of current practice on cognitive/ behavioral methods of pain relieve ($X^2 = 14.33$, $df = 3$, $P = 0.002$). The results also showed statistically significant association between clinician's cadre and the level of current practice on cognitive/ behavioral methods of pain relieve ($X^2 = 16.56$, $df = 3$, $P = 0.035$) as illustrated in table 4.7. In addition, results showed statistically significant association between clinician's cadre and current practices on pharmacological management of chronic pain ($X^2 = 17.76$, $df = 8$, $P = 0.023$) as illustrated table 4.8. However, there was no significant association between socio demographic characteristics and current practice in assessment and measurement of chronic pain as illustrated in table 4.5 and table 4.6 respectively.

Table 4.7: Association between Selected Demographic Characteristics and Knowledge on Assessment and Measurement of Chronic Pain

Socio-demographic Characteristics	Knowledge on assessment and measurement of chronic pain		
	X ² value	Df	p-value
Gender	.028	1	.867
Age group	4.831	3	.185
Education level	3.719	3	.293
Cadre	7.462	8	.488
Years Of Clinical Practice	2.347	2	.309

(N=153)

Table 4.8: Knowledge on cognitive/ behavioral methods of pain relief

Socio-demographic Characteristics	Knowledge on cognitive/ behavioural methods of pain relief		
	X ² value	Df	p-value
Gender	.027	1	.870
Age Group	2.716	3	.438
Level Of Education	14.325	3	.002
Cadre	16.559	8	.035
Years Of Clinical Practice	.557	2	.757

(N-153)

Table 4.9: Association between demographic characteristic and knowledge on Pharmacological management of chronic pain

Socio-demographic Characteristics	Knowledge on pharmacological management of chronic pain		
	X² value	df	p-value
Gender	.837	1	.360
Age Group	7.704	3	.053
Level of Education	2.769	3	.429
Cadre	17.75	8	.023
Years Of Clinical Practice	1.619	2	.445

(N-153)

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The aim of this study was to determine the level of knowledge, practices and attitudes amongst clinicians towards assessment and management of patients with chronic pain, in a tertiary hospital in Kenya.

5.1.1 Knowledge and Attitudes towards assessment and management of chronic pain

This study established that the level of knowledge and attitudes among multidisciplinary clinicians managing chronic pain may have inadequate knowledge and negative attitudes on some aspect of assessment and management of chronic pain including; knowledge on physiological basis of chronic pain with (90% (n=137) of participant having inadequate knowledge and attitudes. And 86% (n=132) of them had inadequate knowledge and attitudes on psychological factors of pain perception and over half 69% (n= 105) of them had inadequate knowledge and attitudes on developmental changes in pain perception. These finding are similar to some other findings from a cross-sectional study that was conducted in South Africa by Clenzo, Naidoo, and Parker (2016) who investigated knowledge of pain amongst sports and orthopedic manipulative physiotherapists (n=1562) found 85% of them had inadequate knowledge which is similar to the current study. However, this study done in south Africa established that though participants had a negative attitudes, the majority adequate knowledge in physiological basis of pain (57% n= 118). These findings are to the contrary to the current study that established that the participants who had negative attitudes also depicted inadequate knowledge. This difference can be attributed to the differences in sample sizes. That therefore had differences in study powers. Similarly, a comparative study on attitudes to and about pain and pain management amongst nurses working with children with cancer in UK, South Africa and Sweden (n=106) by *Enskar et al. (2007)* found contrasting

results with the current study with participants exhibiting high level of knowledge in physiological domain (mean > 4.5).

Few studies in the region have similar findings; a cross-sectional survey conducted in Kenya's national referral hospital, which evaluated the various health care workers (n=96) on knowledge and attitudes regarding pain assessment and management in children, Jin, (2015) found a significant knowledge gap with over half (58.3%) of the participants performing poorly while only 4.2% of them had averagely performed. Similarly, in a Ugandan cross-sectional survey that assessed nurses' knowledge and skills of assessing pain in critically ill patients at a tertiary hospital, Kizza, Muliira, Kohi and Nabirye (2016) found that 73.5% of nurses had inadequate knowledge and attitudes in key concepts of pain management which affected the quality of assessment and management of critically ill adult patients.

Furthermore, the result of this study is similar to those done globally. For instance, a cross-sectional study to investigate the knowledge, attitudes and practices among healthcare providers (n=662) in seven hospitals in Jordan by *Khalwa Nuseir et al* (2016) found participants had a mean score of 28.7% indicating a substantial knowledge gap and negative attitudes. Additionally, a study by *Kheshti et al* (2016) on health care workers' knowledge, attitudes and practices about chronic pain management in Shirazi, Iran (n=213) found an overall mean score of 43.13 % \pm 11.1 with only 9.3% of the participants believed to have adequate knowledge and attitudes. Perhaps this findings could be explained by the fact that majority of participants were nurses (50%, n = 77), diploma holders diploma holders (70%, n=106) and less than 5 years of clinical experience (71% n= 79). This is similar to previous studies that showed that nurses lack adequate knowledge, requisite attitude and expertise to assess and manage chronic pain (Nuseir, Kassab, & Almomani, 2016; Yaqoob & Nasaif, 2015; Kiwanuka & Masaba, 2018). Additionally, most participants (71% n=108) had less than 5 years of clinical experience and were young (55% n= 84) that is, less than 30 years of age. Perhaps, these two sociodemographic characteristics, that is, few years of experience and being young may have also influenced knowledge, attitude and practice in this study setting. This is similar to previous studies that have shown that clinical experience influences the knowledge, attitudes and practices of clinicians (*Enskär, Ljusegren, et al., 2007*).

Furthermore, differences in cadres, their levels of training and exposure to assessment and management of chronic pain may have influenced the results of the current study as reported by previous studies (*Miró et al., 2019; Shipton et al., 2018; Enskär, Ljusegren, et al., 2007; Bouri et al., 2018; Nuseir et al., 2016*). In our study, majority of the participants (70% n=106) had middle level college diploma and few (20%; n=31) had university degree which may have had implication on knowledge and attitude and practices scores.

5.1.2 Current Practices on assessment and management of chronic pain

The current study also examined the current practices on assessment and management of chronic pain amongst multidisciplinary clinicians. The results showed inadequate knowledge on current evidence based practices amongst clinicians, only a few (9%; n= 14) of the participants use best practice in assessment and measurement of chronic pain, which concurs with a study conducted by Al-Quliti and Alamri, (2015) on knowledge, attitudes and practice of healthcare providers (n=105) in tertiary institutions in Almadina, Saudi Arabia showed knowledge gap in current best practices with only 5.7% (n=6) of participants using current best practices in managing chronic pain. The results are worrisome due to the fact that assessment and measurement of pain determines the nature of intervention which will in turn influence the outcome of pain management. Poor assessment and measurement always lead to misclassification of pain, leading to poor intervention options hence poor outcome (Ranger, Johnston, & Anand, 2007). Chronic pain continues to be the most common condition seen in referral hospitals and is associated with high socio-economic costs on society and overburdens national healthcare systems (Goldberg & McGee, 2011; *Salazar et al., 2016*). Whereas some patients with severe chronic pain experience activity limitation, participation restrictions and a poor quality of life, others have been misclassified or misdiagnosed which have led to inappropriate interventions, hence poor treatment outcome (*Stewart et al., 2003*).

On pharmacological practices domain of the questionnaire, the participants performed inadequately with only 7% of the participants qualifying as being knowledgeable. The current study findings are similar to the results of an Iranian

study conducted by Kheshti, Namazi, Mehrabi, and Firouzabadi (2016) on health care workers' knowledge attitudes and practices about chronic pain management, who found as low as 9.3% of the respondents had adequate knowledge in this domain.

Interestingly in the current study, participants recorded good performance in the cognitive/ behavioral aspect of chronic pain intervention as compared to all other domains. Up to 62% (n=95) of participants had adequate knowledge on cognitive/ behavioral aspect, This is a non-pharmacological aspect of pain intervention which focuses mainly on psychological, social and educational aspect of pain intervention which has been reflected by previous studies to be effective when combined with other modalities (Louw, Zimney, O'Hotto, & Hilton, 2016; Turk, Swanson, & Tunks, 2008).

5.1.3 Association between Clinicians' Characteristics and Level of Knowledge, Attitudes and Practices towards assessment and management of chronic pain

The current study examined the association between clinician's demographic characteristics and level of knowledge, attitudes and practices. The study results established that there was a statistically significant association between age-range and the level of knowledge and attitudes in physiological domain ($P < 0.008$). Perhaps the association is due to the fact that most participants (55% n=84) were aged 30 years and below, fresh graduates who may have excellent knowledge on current evidence base knowledge on chronic pain intervention. On the other hand, advanced age could be associated with exposure, multidisciplinary collaboration or continuing medical education which may have led to improvement of their knowledge. This result is in contrasts to the results of the study conducted by clenzo Naidoo and parker (2016) who found no association between age category and level of knowledge. Interestingly, the current study found no statistically significant association between the clinical years of practice and the level of knowledge, attitudes and practices which is contrasts to previous studies that found work experience influenced the level of knowledge and attitudes (*Clenzo et al., 2016; Enskär, Ljusegren, et al., 2007; Wilson, 2007*); Jin ,2015). Further, there was

statistically significant association between level of knowledge and attitudes in different domains (such as physiological basis of pain ($P < 0.001$), cognitive/behavioral methods of pain management ($P = .035$) and pharmacological management of chronic pain ($P= 0.023$) and Cadre. These results are similar to the results by Jin (2016) who found nurses performing poorly compared to doctors who performed averagely, this could be due to difference in their training levels and exposure to management of chronic pain. Similarly, a study by *khawla Nuseir et al.* (2016) found medical doctor to be more knowledgeable (36.1%, $n= 73/202$) compared to nursed (24.1% ($n=95/394$)). A survey conducted by *Bouri et al.*, (2018) in Arabic East Mediterranean region investigating knowledge of pain and perceived barriers to optimal pain management among orthopedic health care practitioners in five hospitals was in concurrent with current study, they found that Medical doctors were more knowledgeable in medical aspect of pain management compared to nurses and physiotherapists who were more confident in assessment and measurement pain. Furthermore, the results by Khesti, (2016) found no association between cadres and mean score ($P= 0.692$).

There were statistically association between level of education and the level of knowledge and attitudes on physiological basis of chronic pain ($P= .008$) at the same time in cognitive/ behavioral methods of chronic pain management ($P= .035$). These results are similar to results by *Khawla Nuseir et al.*(2016) who found postgraduate degree was significantly associated with highest level of Knowledge ($P= 0.027$). Al-quliti and Almri (2015) also found that participant with doctoral degree (66.6%) had score of 45% and above and were more knowledgeable than Nurses who had low level of education, only 31.2% of them scored 45% and above. This implies that, there is need to improve the level of knowledge, attitudes and practices amongst clinicians, through research on pain curriculum in undergraduate and post-graduate medical training institutions. Additionally, the studies have shown continuous medical education and adopting chronic pain guidelines helps to improve knowledge, attitudes and practices among clinicians and has resulted to better assessment and management of chronic pain leading to better outcome (Mcnamara, Harmon, & Saunders, 2012; Gustafsson & Borglin, 2013).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Results of this study show that clinicians in tertiary care facilities may have inadequate knowledge, negative attitudes and poor practices in assessing and managing patients with chronic pain, particularly in assessment and measurement of chronic pain. It is clear that the level of education, age group and cadre are factors needed for optimal care of patient with chronic pain. If this knowledge gap, negative attitude and poor practices is not addressed, the chronic pain will continue to be the most common condition seen in referral hospitals and the patients, clinicians and the society will continue experiencing high socio economic and health burden, they will continue to experience high level of pain intensity, activity limitation, participation restrictions and poor quality of life, some will be misclassified or misdiagnosed and will lead to inappropriate interventions hence poor treatment outcome (Goldberg & McGee, 2011; *Salazar et al., 2016*). Educational intervention, continuous medical education, adopting chronic pain guidelines is highly recommended to improve knowledge, attitudes and practices among clinicians in order to contain the problem associated with chronic pain (Mcnamara, Harmon, & Saunders, 2012; Gustafsson & Borglin, 2013). Therefore future research is needed to evaluate and identify areas of weakness in pain curricula within undergraduates and post graduates medical training institution as well as evaluating guideline regarding chronic pain management.

6.2 Recommendation

Targeted in-service continuous medical education for clinicians is necessary to improve their level of Knowledge attitudes and practices to adequately care for their patient with chronic pain. Emphasis should also be put on development and implementation of decision making and referral pathways in the management of chronic pain in order to achieve good chronic pain outcome. Furthermore, development and implementation of clinical decision making matrix (algorithm) for

chronic pain is necessary. Lastly, we propose the initiation of specialize chronic pain clinics in our tertiary institution to enhance proper assessment and management of patients chronic pain.

5.4 Study Limitation

There was uneven distribution of participants in different cadres, those with small population may not be sufficient to generalize the results to the larger population. In addition the study utilized questionnaire which is associated with bias like the way participants interprets the questions and use of internet to search for the answers to the questionnaire may have obscured the results. The combination of two questionnaires RPKAQ and KASRP added up to 77 items which became long and time consuming to participants, and may have reduced their confidence in answering some of the question.

REFERENCES

- Agency for Healthcare Research and Quality. (2017). Noninvasive, Nonpharmacological Treatment for Chronic Pain, 2017, 4–7. Retrieved from <https://effectivehealthcare.ahrq.gov/topics/nonpharma-treatment-pain/research-protocol>
- Ajay, S., & Micah, M. (2014). Sampling techniques & determination of sample size in applied statistics Research: an overview. *International Journal of Economics, Commerce and Management, II, Nov 20*(11), 22.
- Al-Quliti, K. W., & Alamri, M. S. (2015). Knowledge, attitudes, and practices of health care providers in Almadinah Almunawwarah, Saudi Arabia. *Neurosciences, 20*(2), 131–136. <https://doi.org/10.17712/nsj.2015.2.20140546>
- Bevers, K., Watts, L. F., & Gatchel, R. (2016). The Biopsychosocial Model of the Assessment, Prevention, and Treatment of Chronic Pain. *US Neurology*, (June 2017). <https://doi.org/10.17925/USN.2016.12.02.98>
- Bouri, F., Al-Ansari, A., Elhessy, A., Al-Dosari, M., Mahmoud, S., & El Ansari, W. (2018). Orthopedic Professionals' Recognition and Knowledge of Pain and Perceived Barriers to Optimal Pain Management at Five Hospitals. *Healthcare, 6*(3), 98. <https://doi.org/10.3390/healthcare6030098>
- Breivik, H., Collett, B., Ventafridda, V., Cohen, R., & Gallacher, D. (2006). Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. *European Journal of Pain, 10*(4), 287–333. <https://doi.org/10.1016/j.ejpain.2005.06.009>
- Chiaretti, A., Pierri, F., Valentini, P., Russo, I., Gargiullo, L., & Riccardi, R. (2013). Current practice and recent advances in pediatric pain management. *European Review for Medical and Pharmacological Sciences, 17 Suppl 1*(Suppl 1), 112–126.
- Clenzos, N., Naidoo, N., & Parker, R. (2016). Physiotherapists' knowledge of pain:

- A cross-sectional correlational study of members of the South African Sports and Orthopaedic Manipulative Special Interest Groups. *South African Journal of Sports Medicine*, 25(4), 95.
- Dansie, E. J., & Turk, D. C. (2013). Assessment of patients with chronic pain. *British Journal of Anaesthesia*, 111(1), 19–25.
- Enskär, K., Eaton, N., & Harding, R. (2007). Attitudes to and knowledge management , of nurses working with children with cancer : A comparative study between UK , 501–515.
- Enskär, K., Ljusegren, G., Berglund, G., Eaton, N., Harding, R., Mokoena, J., ... Moleki, M. (2007). Attitudes to and knowledge about pain and pain management, of nurses working with children with cancer: A comparative study between UK, South Africa and Sweden. *Journal of Research in Nursing*, 12(5), 501–515.
- Ferrell, B. R., & McCaffery, M. (2012). Knowledge and Attitudes Survey Regarding Pain. *Journal of Palliative Medicine*.
- Goldberg, D. S., & McGee, S. J. (2011). Pain as a global public health priority. *BMC Public Health*, 11.
- Gureje, O., Von Korff, M., Simon, G. E., & Gater, R. (2003). Persistent Pain and Well-being. *Jama*, 280(2), 147. h
- Gustafsson, M., & Borglin, G. (2013). Can a theory-based educational intervention change nurses ' knowledge and attitudes concerning cancer pain management ? A quasi-experimental design. *BMC Health Services Researche*.
- Haanpää, M. L., Backonja, M. M., Bennett, M. I., Bouhassira, D., Cruccu, G., Hansson, P. T., ... Baron, R. (2009). Assessment of Neuropathic Pain in Primary Care. *American Journal of Medicine*, 122(10 SUPPL.), S13–S21.
- Icek, A. (2001). Nature and operation of attitudes. *Annual Review Psychology*, 27–

58.

International Association for the study of Pain, (2015). What is neuropathic pain ?, 1–3.

Jin, Z. (2015). Knowledge and attitude of health care workers at Kenyatta National Hospital on pain assessment and management in children. Dr . Zahra Jin (MBChB) A dissertation submitted in partial fulfillment of the requirements of a degree in Masters of Medicine in, (February). Retrieved from [http://erepository.uonbi.ac.ke/bitstream/handle/11295/94341/Jin%2C_Zahra_pain assessment and management in children.pdf?sequence=1&isAllowed=y](http://erepository.uonbi.ac.ke/bitstream/handle/11295/94341/Jin%2C_Zahra_pain%20assessment%20and%20management%20in%20children.pdf?sequence=1&isAllowed=y)

Jo Nijs, R. T.-C., Wilgen, C. P. van, Enrique Lluch Girbés, Filip Struyf, Nathalie Roussel, Jessica Van Oosterwijck, L., Daenen, Kevin Kuppens, Luc Vanderweeën, Linda Hermans, Beckwée, D., ... and Mira Meeus. (2014). Applying Modern Pain Neuroscience in Clinical Practice: Criteria for the Classification of Central Sensitization Pain. *Pain Physician*, 17(12), 447–457.

Kheshti, R., Namazi, S., Mehrabi, M., & Firouzabadi, D. (2016). Health Care Workers' Knowledge, Attitude, and Practice About Chronic Pain Management, Shiraz, Iran. *Anesthesiology and Pain Medicine*, 6(4). <https://doi.org/10.5812/aapm.37270>

Kim, W., Kim, S. K., & Nabekura, J. (2017). Functional and structural plasticity in the primary somatosensory cortex associated with chronic pain. *Journal of Neurochemistry*, 141(4), 499–506.

Kiwanuka, Frank, & Masaba, R. (2018). Nurses' knowledge, attitude and practices regarding pain assessment among patients with cancer at Uganda Cancer Institute. *J Anal Res Clin Med*, 6(2), 72–79.

Kizza, I. B., Muliira, J. K., Kohi, T. W., & Nabirye, R. C. (2016). Nurses' knowledge of the principles of acute pain assessment in critically ill adult patients who are able to self-report. *International Journal of Africa Nursing Sciences*, 4, 20–27.

- Langley, P. C., Ruiz-Iban, M. A., Molina, J. T., De Andres, J., & Castellón, J. R. G.-E. (2011). The prevalence, correlates and treatment of pain in Spain. *Journal of Medical Economics*, 14(3), 367–380.
- Lehnert, B. E., & Bree, R. L. (2010). Analysis of Appropriateness of Outpatient CT and MRI Referred From Primary Care Clinics at an Academic Medical Center: How Critical Is the Need for Improved Decision Support? *Journal of the American College of Radiology*, 7(3), 192–197.
- Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-Based Dentistry*, 7(1), 24–25.
- Lin, T.-C., Wang, J.-O., Raffa, R. B., Pergolizzi, J. V., Ho, S.-T., & Ger, L.-P. (2016). Knowledge, Attitude and Practice Survey of Prescribing Opioids for Chronic Noncancer Pain in Taiwan—Comparison of Pain and Non-Pain Physicians. *Pain Medicine*, pnw189.
- Louw, A., Zimney, K., Puentedura, E. J., & Diener, I. (2016). The efficacy of pain neuroscience education on musculoskeletal pain: A systematic review of the literature. *Physiotherapy Theory and Practice*, 32(5), 332–355.
- Magalhães, M. O., Costa, L. O. P., Cabral, C. M. N., & Machado, L. A. C. (2012). Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: a cross-sectional study. *Brazilian Journal of Physical Therapy*, 16(3), 248–253.
- Malfliet, A., Coppieters, I., Van Wilgen, P., Kregel, J., De Pauw, R., Dolphens, M., & Ickmans, K. (2017). Brain changes associated with cognitive and emotional factors in chronic pain: A systematic review. *European Journal of Pain (United Kingdom)*, 21(5), 769–786.
- Mcnamara, M. C., Harmon, D., & Saunders, J. (2012). Effect of education on knowledge, skills and attitudes around pain. *British Journal of Nursing*, 21(16).
- Miller, A. (2012). Hospice Nurses-Attitudes and Knowledge about Pain

Management. *Scholar Commons*, (January). Retrieved from <http://scholarcommons.usf.edu/etd/4165/>

Miró, J., Castarlenas, E., Solé, E., Martí, L., Salvat, I., & Reinoso-Barbero, F. (2019). Pain curricula across healthcare professions undergraduate degrees: A cross-sectional study in Catalonia, Spain. *BMC Medical Education*, *19*(1), 1–8.

Nijs, J., Goubert, D., & Ickmans, K. (2016). Recognition and Treatment of Central Sensitization in Chronic Pain Patients: Not Limited to Specialized Care. *Journal of Orthopaedic & Sports Physical Therapy*, *46*(12), 1024–1028.

Nuseir, K., Kassab, M., & Almomani, B. (2016). Healthcare Providers' Knowledge and Current Practice of Pain Assessment and Management: How Much Progress Have We Made? *Pain Research and Management*, *2016*, 1–7.

Pincus, T., Burton, A. K., Vogel, S., & Field, A. P. (2003). A Systematic Review of Psychological Factors as Predictors of Chronicity/Disability in Prospective Cohorts of Low Back Pain. *Spine*, *27*(5), E109–E120.

Ranger, M., Johnston, C. C., & Anand, K. J. S. (2007). Current Controversies Regarding Pain Assessment in Neonates. *Seminars in Perinatology*, *31*(5), 283–288.

Refshauge, K., Hübscher, M., Goodall, S., McAuley, J., Gardner, T., & Smith, L. (2017). Physiotherapists' beliefs and attitudes influence clinical practice in chronic low back pain: a systematic review of quantitative and qualitative studies. *Journal of Physiotherapy*, *63*(3), 132–143

Salazar, A., Mico, J. A., & Failde, I. (2016). A review of chronic pain impact on patients , their social environment and the health care system. *Journal of Pain Research*, *457–467*.

Sessle, B. J. (2012). The Pain Crisis: What It Is and What Can Be Done. *Pain Research and Treatment*, *2012*, 1–6.

- Shipton, E. E., Bate, F., Garrick, R., Steketee, C., Shipton, E. A., & Visser, E. J. (2018). Systematic Review of Pain Medicine Content, Teaching, and Assessment in Medical School Curricula Internationally. *Pain and Therapy*, 7(2), 139–161.
- Stewart, W. F., Ricci, J. A., Chee, E., Morganstein, D., & Lipton, R. (2003). Lost Productive Time and Cost Due to Common Pain Conditions in the US Workforce. *Journal of the American Medical Association*, 290(18), 2443–2454.
- Subhashini, L., Vatsa, M., & Lodha, R. (2009). Knowledge, attitude and practices among health care professionals regarding pain. *Indian Journal of Pediatrics*, 76(9), 913–916.
- Taherdoost, H., & Group, H. (2017). Sampling Methods in Research Methodology ; How to Choose a Sampling Sampling Methods in Research Methodology ; How to Choose a Sampling Technique for. *International Journal of Academic Research in Management*, vol.5.(September), 18–27.
- Turk, D. C., Swanson, K. S., & Tunks, E. R. (2008). Psychological Approaches in the Treatment of Chronic Pain Patients-When Pills, Scalpels, and Needles Are Not Enough. *Canadian Journal of Psychiatry*, 53(4), 213–223.
- Vardeh, D., Mannion, R. J., & Woolf, C. J. (2016). Towards a mechanism-based approach to pain diagnosis HHS Public Access. *J Pain*, 17(9), 50–69.
- Wilson, B. (2007). Nurses ' knowledge of pain. *Journal of Clinical Nursing*, 16, 1012–1020.
- Yaqoob, S. H., & Nasaif, H. A. (2015). Nurses' knowledge and attitudes toward pain assessment and management for adult sickle cell disease patients during sickling crisis. *Clinical Nursing Studies*, 3(4).

APPENDICES

Appendix I: Participant Information

Study title: Knowledge, practices and attitudes towards assessment and management of chronic pain amongst clinicians at a tertiary care facility, Kenya.

Investigator: Mr. Solomon Rop, physiotherapy master's student at Jomo Kenyatta University of Agriculture and Technology.

Mobile no: 0710737192; Email: ropsolopt@gmail.com

Proposal supervisors:

Dr. Nassib Tawa: Mobile: 0701182685; Email: nassibtawa@gmail.com

Dr. Joseph Matheri: Mobile: 0725761845; Email: mmatheri@gmail.com.

JKUAT ERC

Tenwek ERC; mobile 0727033725 Email admin@tenwek.com

Researcher's Statement

You are being invited to participate in a study assessing Knowledge, clinical practices and attitudes on assessment and management of chronic pain among clinicians at a tertiary care facility, Kenya

The study is being conducted as partial fulfillment of the requirements for completion of my Masters of physiotherapy degree. Ethical approval has been sought from Tenwek Hospital, NACOSTI as well as the University of Jomo Kenyatta University of Agriculture and Technology prior to the start of this study.

The purpose of this information is to help you decide whether or not to participate in the study.

Please take time to read the following information carefully and feel free to ask for more information. Thank you for your time.

Introduction and Procedure

The main aim of this proposed study is to establish baseline knowledge, attitudes and practices on assessment and management of chronic pain among clinicians at Tenwek Hospital. The study will consist of a self-administered questionnaire.

Questionnaire: the clinicians are requested to complete a self-administered questionnaire after reviewing this information sheet and providing written consent. The questionnaire is not a test and there is no set time to complete.

After completion, you are requested to place the questionnaire attached with a completed form of your socio-demographic information in a sealed drop-box in the physiotherapy in-charge's office.

Voluntariness

Participation in this study is entirely voluntary. I would like to emphasize that you do not have to accept this invitation and should only voluntarily take part if you want to. Please keep a copy of this document.

Benefits

The findings will be expected to provide a better understanding on factors that may hinder optimal management of patient with chronic pain. The gaps identified by this study will form a foundation towards development and implementation of practice guidelines on assessment and management of patient with chronic pain. Similarly, the key findings of this study could be used by training institution to inform future curricular review process aimed at improving assessment, diagnosis and management of patients with chronic pain. Lastly, the results could also inform policy recommendations and focus areas of future research on assessment, diagnosis and management of patients with chronic pain.

To ensure meaningful feedback to study participant, the researcher will organize a presentation whereby all participant will be invited to attend.

Confidentiality:

The completed questionnaire will be kept anonymously. No personal identification information will be collected on the questionnaire. In addition, results of this study will be presented in aggregate form. Therefore, individual responses will not be able to be traced back to individual respondents. Lastly, the computer used to store information will have protected password only accessible to the investigator to safeguard the data and ensure confidentiality.

Queries

If you have any questions regarding this study, please contact the investigator and or research supervisors using the contact information provided above. In addition, any ethical concerns you have can be addressed to the Ethics and Research Committee (JKUAT or Tenwek Hospital)) using the contact information provided above.

Appendix II: Participants Consent Form

Study Title: Knowledge, clinical practices and attitudes on assessment and management of chronic pain among clinicians at Tenwek Hospital facility, Kenya

.Participant’s statement

I.....confirm that I have read and understood the information form for the above study and hereby agree to participate in the study. I understand my participation is fully voluntary and I am free to withdraw from the study at any time. I have been given the opportunity to ask questions and seek clarifications, and these have been answered satisfactorily.

Signature..... Date.....

Investigator’s statement

I..... declare that I have adequately explained to the above participant the study procedure, and answered his /her questions and clarifications to the best of my ability.

Signature..... Date.....

Supervisors’ contact information

Dr. Nassib Tawa: Mobile: 0701182685; Email: nassibtawa@gmail.com

Dr. Joseph Matheri: Mobile: 0725761845; Email: mmatheri@gmail.com

Appendix III: Study Questionnaire

Study Title: Knowledge, clinical practices and attitudes on assessment and management of chronic pain among clinicians at Tenwek Hospital facility, Kenya

SURVEY QUESTIONNAIRE

Please fill the flank space or tick the correct answer and DO NOT write your name anywhere in this paper; the information you provide will be confidential.

Section A; Socio- Demographic information

1. What is your gender?

Male

Female

2. How old are you?

≤ 30 years

31- 40 years

41- 50 years

> 50 years

3. . What is the highest level of education you have completed?

University/ College diploma Master's degree Bachelor's Degree Doctorate's degree

4. What is your professional discipline?

Please specify year of training: _____

5. What duration have you been in clinical practice?

6. What duration have you been managing chronic pain? _____

Section B; Revised Pain Knowledge and Attitudes survey

Agree/ Disagree – please circle the correct answer

Physiological Basis of Pain

1. There is a predictable relationship between the extent of an injury and the person's perception of pain **Disagree / Agree**
2. Pain is a physiological sensation **Disagree / Agree**
3. The sensation of pain varies from individual to individual **Agree / Disagree**
4. Nociception is experienced at the site of tissue damage **Agree / Disagree**
5. The physiological basis of pain is well understood **Disagree / Agree**
6. The intensity of pain is its most important quality **Disagree / Agree**
7. Two people with exactly the same physical condition or trauma will have similar experiences of pain **Disagree / Agree**
8. Pain is a subjective experience **Agree/ Disagree**
9. The duration of pain is similar for individuals with the same pain condition **Disagree / Agree**
10. Unrelieved pain contributes to the onset of chronic pain **Agree / Disagree**

Psychological Factors of Pain Perception

1. Chronic pain always has an underlying psychological cause **Agree / Disagree**

2. A person's statement about pain should always be accepted at face value
Disagree / Agree
3. If there is no organic basis to the pain, then the pain is psychological
Disagree / Agree
4. Psychologically caused pain can hurt as much as organically caused pain
Agree/ Disagree
5. A person receiving compensation is less likely to recover from pain
Disagree / Agree
6. Chronic pain frequently leads to depression **Agree / Disagree**
7. It is common for someone with chronic pain to feel little control over the pain
Agree / Disagree
8. Improving an individual's coping skills is more important than determining the extent to which there may be a psychological cause of the pain **Agree / Disagree**
9. Pain due to a physiological cause and pain due to a psychological cause can occur simultaneously **Agree / Disagree**
10. People with chronic pain can continue to live productive lives **Agree / Disagree**
11. A person may have severe pain but appear calm and rational at the same time
Agree / Disagree
12. Learning to tolerate pain builds character **Agree / Disagree**
13. Relief of pain is often more important to the person than treatment of the underlying condition **Disagree / Agree**
14. Deliberate faking of pain is rare among people with pain **Agree / Disagree**

Developmental Changes in Pain Perception

1. A child, who is playing after surgery, may have pain **Agree / Disagree**
2. Children experience less pain than adults **Agree / Disagree**
3. Due to the immaturity of the nervous system, newborns have little sensitivity to pain **Disagree / Agree**
4. Children have a higher tolerance for pain than adults **Disagree / Agree**
5. Children can have severe headaches or migraines **Disagree / Agree**
6. If children are given medication for pain, they are more likely to think that drugs will solve their problems later in life **Disagree / Agree**
7. A premature infant is able to feel pain **Agree / Disagree**
8. Children, who have recurrent abdominal pain, are probably seeking attention or trying to escape responsibilities **Agree / Disagree**
9. Elderly people tolerate more pain **Disagree / Agree**
10. Children remember pain **Disagree / Agree**

Assessment and Measurement of Pain

1. It is impossible to measure pain in an individual who is unable to communicate about pain **Disagree / Agree**
2. Behavioral measures of pain are reliable measures of short sharp pain **Agree / Disagree**
3. Self-report is the most meaningful measure of pain **Agree / Disagree**
4. A person, who is sleeping, may have significant pain **Agree / Disagree**
5. Blood pressure, heart rate, respiration, and sweating are good measures of postoperative pain **Disagree / Agree**
6. Increasing levels of endogenous opioids can help to determine if chronic pain is due to a cause (NB: endogenous opioids are produced by the body) **Disagree / Agree**
7. Pain can be reliably measured on a variety of numeric scales **Agree / Disagree**
8. Behavioral measures of pain are reliable indicators of chronic pain **Disagree / Agree**

9. Asking the person “how do you feel?” is usually the best way to measure pain
Disagree / Agree
10. Frequent measurement of acute pain may make the pain worse **Disagree / Agree**

Cognitive/ Behavioral Methods of Pain Relief

1. Being engaged in meaningful activity may reduce a person’s perception of pain **Agree / Disagree**
2. Cognitive/ behavioral methods of pain relief are more effective than pharmacological methods **Disagree / Agree**
3. Relaxation is an effective method of pain relief for mild to moderate levels of pain **Agree / Disagree**
4. Reinforcement of coping with pain is an important treatment intervention **Agree / Disagree**
5. A spouse, parents, or other family members may exacerbate non-coping behaviors **Agree / Disagree**
6. Cognitive/ behavioral methods have more effect on reducing mild pain than pain which is moderate or severe **Agree / Disagree**
7. Progressive relaxation (tension with relaxation) may cause more pain **Agree / Disagree**
8. It is preferable to use cognitive/ behavioral methods rather than pharmacological treatments for pain relief **Disagree / Agree**
9. Changing a person’s patterns of thought regarding pain may improve coping skills **Agree / Disagree**
10. Cognitive/ behavioral methods may have more impact on improving coping than on reducing the intensity of pain **Agree / Disagree**

Question measuring Pharmacological management of chronic pain

1. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases. **Agree / Disagree**
2. Giving a narcotic on a regular schedule is preferred over a PRN schedule for continuous pain. **Agree / Disagree**
3. Long-time use of Tramadol causes fewer harmful effects (such as tolerance, addiction, and psychological dependence) than other opioid drugs. **Agree/ Disagree**
4. Parenteral administration is more efficacious than oral administration in pain management **Disagree / Agree**
5. The dosages of opioids that patients receive should be much lower than the required dosage, for prevention of drug tolerance **Disagree /Agree**
6. The most suitable dose of morphine for a patient in pain is a dose that best controls the symptoms; there is no maximum dose (i.e., a level that must not be exceeded) for morphine. **Agree / Disagree**
7. For patients with severe nausea and vomiting, abdomen distention, and/or severe constipation, I would prescribe opioids infrequently or with lower dosage. **Disagree /Agree**
8. Children cannot tolerate opioids for pain relief. **Disagree / Agree**
9. 80% of pain can be relieved by appropriate treatment with pharmacological pain relievers. **Agree / Disagree**
10. Pain medications are equally effective whether given before the onset of pain or when the patient is already experiencing pain. **Disagree / Agree**
11. Naloxone can treat respiratory depression caused by opioids. **Agree / Disagree**
12. If a patient reports that a narcotic is causing, euphoria she/he should be given a lower dose of the analgesic. **Disagree / Agree**
13. NSAIDs cannot increase the respiratory depression of opioids. **Disagree /Agree**
14. Sedation is an effective way of eliminating pain in children. **Agree / Disagree**
15. The incidence of addiction as a result of the legitimate prescription of narcotic pain-relieving drugs is < 1%- 10% **Agree / Disagree**
16. When a patient requests increasing amounts of analgesic to control pain, this usually indicates the patient is psychologically dependent. **Disagree / Agree**

17. The recommended route of administration of opioid analgesics to patients with prolonged pain depends on patient request. **Disagree / Agree**
18. The World Health Organization (WHO) pain ladder suggests using single analgesic agents rather than combining classes of drugs (e.g. combining an opioid with a non-steroidal agent). **Disagree / Agree**
19. Adolescents with a history of substance abuse should not be given opioids for pain because they are at high risk for repeated addiction. **Disagree / Agree**

Multiple Choices Question

20. Which of the following medications is suitable for pain relief in a 10-month-old child with mild pain (weight = 12 kg)?
- a. Diclofenac suppository 100 mg q6 h
 - b. Naproxen suspension 125 mg q12 h
 - c. Ibuprofen syrup 120 mg q4 h
 - d. Acetaminophen suppository 325 mg q6 h
21. Which of the following medications is considered the drug of choice for the treatment of post-herpetic neuralgia?
- a. Acetaminophen 500 mg QID
 - b. Naproxen 500 mg TID
 - c. Gabapentin 300 mg TID
 - d. Tramadol 100 mg QID

22. The patient is a known case of rheumatoid arthritis from the past 5 years. She was admitted to CCU with the impression of acute coronary syndrome. According to her drug history, she received naproxen 500 mg TID for joint pain relief. Which analgesic is the best selection for her at this time?
- Naproxen 500 mg TID
 - Decrease the dose of Naproxen; 500 mg BID
 - Discontinue Naproxen and alternate Acetaminophen 500 mg QID
 - Alternate Naproxen with Celecoxib 100 mg BID
23. The patient is a 42-year-old man who is undergoing chemotherapy treatment for metastatic cancer. In order to control the patient's pain, morphine sulfate 5 mg IV q4 h was prescribed. Following administration of his second dose of morphine sulfate, he presented erythema, itching, and burning. Which strategy is the best approach to control the symptoms of allergic reaction to morphine sulfate?
- Discontinue IV morphine sulfate and use Meperidine 50 mg q4 h
 - Discontinue IV morphine sulfate and use oral morphine 15 mg q4 h
 - Co-administer Hydroxyzine tab 25 - 50 mg
 - Dilution of morphine sulfate with normal saline and administering through slow IV infusion.

Thank you for your participation

Appendix IV: Answers to Questionnaire

Physiological Basis of Pain

1. Disagree
2. Disagree
3. Agree
4. Agree
5. Disagree
6. Disagree
7. Disagree
8. Agree
9. Disagree
10. Agree

Psychological Factors of Pain Perception

1. Agree
2. Agree
3. Disagree
4. Agree
5. Disagree

6. Agree
7. Agree
8. Agree
9. Agree
10. Agree
11. Agree
12. Disagree
13. Agree
14. Agree

Developmental Changes in Pain Perception

1. Agree
2. Disagree
3. Disagree
4. Disagree
5. Disagree
6. Disagree
7. Agree
8. Disagree
9. Disagree

10. Agree

Assessment and Measurement of Pain

1. Disagree

2. Agree

3. Agree

4. Agree

5. Disagree

6. Disagree

7. Agree

8. Disagree

9. Disagree

10. Disagree

Cognitive/ Behavioral Methods of Pain Relief

1. Agree

2. Agree

3. Agree

4. Agree

5. Agree

6. Agree

7. Agree
8. Disagree
9. Agree
10. Agree

Question measuring Pharmacological management of chronic pain

1. Agree
2. Agree
3. Agree
4. Disagree
5. Disagree
6. Agree
7. Disagree
8. Disagree
9. Agree
10. Disagree
11. Agree
12. Disagree
13. Agree
14. Disagree

15 Disagree

16. Disagree

17. Disagree

18. Disagree

19. Disagree

Multiple Choices Question

20. C

21. C

22. C

23. C.

Appendix V: Data Analysis and Reporting Plan

Study objective	Outcome	Analytical tests and presentation
1. To determine the level of knowledge and attitudes on assessment and management of chronic pain amongst multidisciplinary clinicians at Tenwek Hospital.	Scores on physiological ,psychological and developmental changes of pain perception , score more than 75 % represent adequate knowledge and attitudes,	<p><u>Analysis</u></p> <p>Frequencies, Percentages and means</p> <p><u>Presentation</u></p> <p>Tables, bar charts and Histogram</p>
2.To determine the current practices on assessment and management of chronic pain amongst multidisciplinary clinicians at Tenwek Hospital	<p>Scores on</p> <p>1 assessment and measurement of pain</p> <p>2.cognitive/behavioral methods of pain relieve</p> <p>3 pharmacological chronic pain management</p> <p>Score greater than 75 % is considered to have good practices</p>	<p><u>Analysis</u></p> <p>Frequencies, Percentages and means</p> <p><u>Presentation</u></p> <p>Tables, bar charts and Histogram.</p>
3. To determine the association between clinicians' socio demographic characteristics and the level of knowledge, practices and attitudes towards assessment and management of patients presenting with chronic pain.	P values less than 0.05 is accepted to have significant statistical associations	<p><u>Analysis</u></p> <p>Chi squares,</p> <p><u>Presentation</u></p> <p>Two by two contingency table.</p>

**Appendix VI: Letter of permission to use the knowledge and attitudes survey
Regarding pain and Revised Pain Knowledge and Attitudes survey Tool**

October 2012

The “Knowledge and Attitudes Survey Regarding Pain” tool can be used to assess nurses and other professionals in your setting and as a pre and posttest evaluation measure for educational Programs. The tool was developed in 1987 and has been used extensively from 1987 - present.

The tool has been revised over the years to reflect changes in pain management practice.

Regarding issues of reliability and validity: This tool has been developed over several years.

Content validity has been established by review of pain experts. The content of the tool is derived from current standards of pain management such as the American Pain Society, the World Health Organization and the National Comprehensive Cancer Network Pain Guidelines.

Construct validity has been established by comparing scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise. Test-retest reliability was established ($r > .80$) by repeat testing in a continuing education class of staff nurses

($N=60$). Internal consistency reliability was established ($\alpha r > .70$) with items reflecting both knowledge and attitude domains.

Regarding analysis of data, we have found that it is most helpful to avoid distinguishing items as measuring either knowledge or attitudes. Many items such as one measuring the incidence of addiction, really measure both knowledge of addiction and attitude about addiction. Therefore, we have found the most benefit to be gained from analyzing the data in terms of the percentage of complete scores as

well as in analyzing individual items. For example, we have found it very helpful to isolate those items with the least number of correct responses and those items with the best scores to guide your educational needs.

Enclosed for your use is a copy of our instrument and an answer key. You may use and duplicate the tool for any purpose you desire in whole or in part. References to some of our studies which have included this tool or similar versions are included below. We have received hundreds of requests for the tool and additional use of the tool can be found in other published literature.

We also acknowledge the assistance of several of our pain colleagues including Pam Kedziera,

Judy Paice, Deb Gordon, June Dahl, Hob Osterlund, Chris Pasero, Pat Coyne and Nessa Coyle in the revisions over the years. If using or publishing the tool results please cite the reference as

“Knowledge and Attitudes Survey Regarding Pain” developed by Betty Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN, (<http://prc.coh.org>), revised 2012.

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

Sincerely,

Betty R. Ferrell, RN, PhD, FAAN Margo McCaffery, RN, MS, FAAN

Research Scientist Lecturer and Consultant

Revised Pain Knowledge and Attitudes survey

The developer of Revised Pain Knowledge and Attitudes survey questionnaire gave the researcher the permission to use the tool through an email, the developer as well send the original copy of questionnaire with answers.

Appendix VII: NACOSTI Research License

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 351049	Date of Issue: 24/October/2019
RESEARCH LICENSE	
	
<p>This is to Certify that Mr. Rop Solomon of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Bomet on the topic: Knowledge, Practices and attitudes towards Assessment and Management of Chronic pain Among Clinicians at Tertiary care Facility, Kenya for the period ending : 24/October/2020.</p>	
License No: NACOSTI/P/19/2317	
351049 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
<p>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</p>	

Appendix VIII: Jomo Kenyatta University of Agriculture and Technology Institutional Ethical Review Committee Approval Letter



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**
P. O. Box 62000-00200 Nairobi, Kenya Tel 0675870225 OR Extn 3209
Institutional Ethics Review Committee

October 11th, 2019

REF: JKU/2/4/896B

Solomon Rop,
Department of Rehabilitation Sciences.

Dear Mr. Rop,

**RE: KNOWLEDGE, PRACTICES AND ATTITUDES TOWARDS ASSESSMENT AND
MANAGEMENT OF CHRONIC PAIN AMONGST CLINICIANS AT A TERTIARY CARE
FACILITY, KENYA**

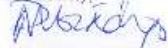
The JKUAT Institutional Ethics Review Committee has reviewed your responses to issues raised regarding your application to conduct the above mentioned study with you as the Principal Investigator.

This is to inform you that the IERC has approved your protocol. The approval period is from October 11th 2019 to October 11th 2020 and is subject to compliance with the following requirements:

- a) Only approved documents (informed consent, study instruments, study protocol, etc.) will be used.
- b) All changes (amendments, deviations, violations, etc.) must be submitted for review and approval by the JKUAT IERC before implementation.
- c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the IERC immediately.
- d) Any changes, anticipated or otherwise that may increase the risks to or affect the welfare of study participants and others or affect the integrity of the study must be reported immediately.
- e) Should you require an extension of the approval period, kindly submit a request for extension 60 days prior to the expiry of the current approval period and attach supporting documentation.
- f) Clearance for export of data or specimens must be obtained from the JKUAT IERC as well as the relevant government agencies for each consignment for export.
- g) The IERC requires a copy of the final report for record to reduce chances for duplication of similar studies.

Should you require clarification, kindly contact the JKUAT IERC Secretariat.

Yours Sincerely,


DR. PATRICK MBINDYO
SECRETARY, IERC



JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship



Appendix IX: Tenwek Hospital Institutional Ethical Review Committee Approval Letter



TENWEK HOSPITAL
A Ministry of Africa Gospel Church

Postal Address:
P.O. Box 102000
Nairobi, Kenya

Telephone: +254 728 061800, 20 2043347
E-mail: info@tenwekhospital.org
Website: www.tenwekhospital.org

28th November 2019

Dear Solomon Rop,

Regarding your research proposal titled:

"Knowledge, practices and attitudes towards assessment and management of chronic pain amongst clinicians at a tertiary care facility, Kenya."

Your proposal was reviewed by the Tenwek Hospital Institutional Ethics Review Committee on 28th November 2019. You have satisfactorily addressed the IERC issues via the documents you submitted to us. However, we have requirements for you to implement prior to commencing the study.

1. Fix the formatting of the survey so that it is easy to understand and follow. Some of the answers are duplicative (Question 8) "agree/agree." Kindly fix all misspellings and errors prior to distribution of the survey.
2. Kindly correct misspellings in the proposal. These include: "Literature" instead of "litmerie"; "Residents" instead of "residence"; "Copeland" instead of "Copland"; and "Tenwek Hospital" instead of "Tenwek hospita".
3. Kindly ensure that the information is stored on a password-protected computer and is only accessible to the investigators. This should safeguard the data and ensure confidentiality. Your proposal should state that.
4. Plan to give meaningful feedback to study participants about the study results. This could be through presentation or other form of communication to ensure that participants benefit from the knowledge gained. Your proposal should state that.
5. Add the contact information to JKUAT on the consent form.
6. The statement, "Similarly, there is no publish research on the level of knowledge, practices and attitudes regarding assessment and management of patient with CP yet it is the main referral hospital in south rift valley and western part of Kenya." is confusing. Your proposal should clarify that.
7. Section 1.1 and 2.1 may missing or an oversight, but are not included in the reviewed proposal.

The Tenwek Hospital IERC now approves your research proposal and expects the necessary changes. Kindly send us the corrected proposal and other corrected documents before 22nd December 2019. If any issues arise with the study or its conduct, you are required to inform the IERC immediately. Any protocol deviations or amendments should be submitted to the IERC for approval. All adverse events should be reported in writing immediately (within 5 business days) to the IERC. Any clearances and requirements for material transfer should comply with international standards. Any further clearances to conduct research at any other facility or any permission necessary to conduct this research protocol are the responsibility of the principal investigator and should not be implied by this approval letter.

This approval will expire in one year. Kindly provide an update, at six months or at the completion of study, whichever is sooner.

Tenwek Hospital is a Christian community committed to excellence in *Compassionate healthcare, spiritual ministry and training for service*