ERASMUS MUNDUS JOINT MASTER'S DEGREE IN EMERGENCY AND CRITICAL CARE NURSING (EMJMD NURSING)

IMPACT OF PAIN EDUCATION PROGRAM (PEP) ON THE KNOWLEDGE AND ATTITUDE OF SURGICAL UNIT NURSES IN POSTOPERATIVE PAIN ASSESSMENT (POP) AND MANAGEMENT

HAMDIYA-TU ALAHASSAN

February 2022

Master´s Thesis

Universidad de Oviedo

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ERASMUS MUNDUS MASTER COURSE IN EMERGENCY AND CRITICAL CARE NURSING

Dr Sandra Sharp, RN, PhD, MSc Advanced Practice, Grad Dip Research Methods, Grad Dip Cardiac Nursing, Grad Dip Intensive Care Nursing, Lecturer in Nursing.

CERTIFY:

That the Master's Thesis submitted by Miss HAMDIYA-TU ALHASSAN, entitled IMPACT OF PAIN EDUCATION PROGRAM (PEP) ON THE KNOWLEDGE AND ATTITUDE OF SURGICAL UNIT NURSES IN POSTOPERATIVE PAIN ASSESSMENT (POP) AND MANAGEMENT carried out under our supervision in the Erasmus Mundus Joint Master Degree in Emergency and Critical Care Nursing meets the necessary requirements to be approved as a Master´s Thesis.

And for the record, and for the relevant purposes, the present certification is issued in Edinburgh on 4th February 2022.

MASTER'S THESIS SUPERVISOR

Dr Sandra Sharp

Abstract

Background: Acute pain after surgery is often unavoidable and its effective assessment and management is an essential component to good quality of care. Unfortunately, despite strategies and interventions to increase awareness of postoperative pain (POP) and clinical improvements in pain management, there is still evidence that pain is undertreated in the postoperative setting. The inadequacy in pain assessment and management has been linked to nurses' inadequate knowledge and training in this area. Implementing a pain education program (PEP) is an approach for improving the knowledge and attitudes of surgical unit nurses in POP assessment and management.

Aim: To assess the impact of a PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management.

Methods: The researcher would adopt a qualitative action research approach involving nurses in the surgical unit of a Ghanaian tertiary hospital using a semistructured interview guide. Data will be thematically analysed using a six-step analysis process described by Braun & Clarke, (2006) and Nowell et al., (2017). Ethical approval will be obtained from the hospital's institutional review board (IRB) to ensure that the study fits into the ethical and regulatory framework as well as informed consent from the participants. The result of this research will add to existing knowledge on the topic and serve as a pacesetter for the implementation of a PEP for nurses in other hospital settings.

Research Dissemination: The research findings will be published in academic journals and made available to hospital personnel and study participants via hospital newsletters.

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Glossary of terms

AR- Action Research

CAPA- Clinically Aligned Pain Assessment

CINHAL – Cumulative Index of Nursing and Allied Health

CNO - Chief Nursing Officer

CO – Commanding Officer

EBP - Evidence-based practice

EPHPP - Effective Public Healthcare Panacea Project

FGD- Focus Group Discussion

FPS-R- Faces Pain Scale-Revised

GHSERC - Ghana Health Service Ethical Review Committee

IRB - Institutional Review Board

JBI – Joana Briggs institute

KASRP- Knowledge and Attitudes Survey Regarding Pain

MOD - Ministry of Defence

NKAS- Nurses' Knowledge and Attitude Survey

NOIC- Nursing Officer In-charge

NPEP - Nurses' Pain Educational Program

NRS- Numerical Rating Scale

PAR- Participatory Action Research

PDSA – Plan-Do-Study-Apply

PEP – Pain Eduction Program

PMP- Pain Management Program

POP – Postoperative pain

PRISMA- Preferred Reporting Items for Systematic Reviews and Meta-analysis

RCT - Randomized Controlled Trial

REC- Research Ethics Committee

VAS- Visual Analog Scale

VRS- Verbal Rating Scale

Acknowledgement

First of all, my uttermost gratitude goes to the almighty God for taking me through this program successfully. I would also like to thank the consortium for organizing this program which is one of a kind. The Erasmus Mundus Joint Master's Degree in Emergency and Critical Care Nursing has been a life-changing opportunity for me to acquire knowledge and enhance my research skills.

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CHAPTER ONE

1.1 INTRODUCTION AND BACKGROUND

Pain is one of the main reasons patients seek healthcare, but it is commonly recognized that the importance of managing pain is often underestimated (Keefe & Wharrad, 2012). Postoperative pain (POP) is a recognised problem and as many as 10% to 50 % of patients experience pain lasting more than a month, and 2% to 10% of these patients continue to experience severe chronic pain after common surgeries (Lovich-Sapola et al., 2015). Inadequate pain management is a common clinical challenge among hospitalized patients, with serious physiological and psychological consequences (Hayes & Gordon, 2015). Some significant consequences of unrelieved pain include; slowed healing, longer hospital stays, and increased use of healthcare resources resulting in a greater burden on the healthcare budget (Yin, et al., 2015). However, despite the availability of new expertise and various analgesic agents, the management of POP has not improved significantly within the last two decades (Kuusniemi & Pöyhiä, 2016). Unfortunately, despite strategies and interventions to increase awareness of POP and clinical improvements in pain management, there is still evidence that pain is undertreated in the postoperative setting, raising concerns about the quality of patient care (Gan et al., 2014).

My interest in this topic arose from my own experience as a Registered Nurse. Whilst working on the surgical wards at the 37 Military Hospital in Accra, Ghana, I recognised that little attention was given to POP assessment and management. Anecdotally, many patients claimed that nurses do not usually enquire, collect detailed information or acknowledge their pain level. Also, based on my personal experience whilst on admission post-surgery, I noticed that nurses do not often address patients' pain-related issues. Consequently, I became interested in exploring the barriers to effective POP assessment and management and undertook a project to explore this problem. Building on this previous work, this research proposal outlines an action research project that will evaluate the impact of an implemented pain education program (PEP) on nurses' knowledge and attitude in POP assessment and management. The premise is that by participating in targeted education, nurses' knowledge and attitude in managing POP would improve.

Postoperative patients are most often vulnerable to complications that could either be anaesthetic-related (for example, postoperative nausea and vomiting or hypoxemia in the recovery room) or surgical in nature (for example, wound-related, ileus or haemorrhage)

(Shah & Hamilton, 2013) and pain (Tarawneh et al., 2020) with the pain being the most common (Goto et al., 2020). According to Aydede (2019), pain is difficult to define and quantify and should be regarded as whatever the person experiencing it says it is. Also, it is a unique symptom, and its assessment and management differ from that of other clinical symptoms (Bernhofer et al., 2016).

1.1.1 POP assessment

Acute pain after surgery is often unavoidable because of the associated tissue injury to pain-sensitive structures (Wahila et al., 2018). However, adequate diagnosis, assessment and documentation of pain are very important to manage pain effectively (Málek et al., 2017). According to Herr et al. (2011), patient self-report of pain is ideal for measuring the existence and intensity of pain. Additionally, pain-related behaviours, vital signs (Gordon, 2015), level of activity tolerance and facial expressions are helpful in determining the exitance or intensity of pain (Wahila et al., 2018). However, most patients are unable to discuss pain in a clinically relevant way and some also avoid discussing it as they assume it might be perceived as bothersome, or that POP is unavoidable or seen as a sign of weakness by the healthcare team (Kuusniemi & Pöyhiä, 2016). On the other hand, nurses' beliefs and attitudes toward pain assessment according to Fatma & Serife (2017) are also influenced by the fact that nurses believe patients experience much less pain than they report and think they need analgesics regularly to deal with anticipated pain.

Clearly, pain assessment is a key step in providing successful pain management in almost all pain guidelines (Kuusniemi & Pöyhiä, 2016). According to Kishner et al. (2016), the use of pain assessment tools helps with pain control, and also, with the introduction of pain assessment tools, nurses and patients would "speak the same language" about pain. There is a range of nonvalidated multidimensional mnemonic methods used to guide a more detailed initial pain assessment in clinical practice (Gordon, 2015). These mnemonics help the healthcare team gain insight into the patient's condition and aid develop a treatment plan with PQRST and SOCRATES as the two most common mnemonics used (Swift, 2015). The Numerical Rating Scales (NRS), Verbal Rating Scales (VRS), Visual Analog Scales (VAS), and the Faces Pain Scale-Revised (FPS-R) are also common pain assessment tools used in the clinical setting (Ferreira-Valente et al., 2011). Assessment domains common in these tools include location, quality, severity, temporal characteristics, and aggravating and alleviating factors (Gordon, 2015).

In 2012, the Clinically Aligned Pain Assessment (CAPA) tool was developed by the University of Utah Health Care (2016) as a need for a conceptual shift away from simple pain intensity rating scales with the tool addressing five questions regarding comfort, change in pain, pain control, functioning and sleep (Topham & Drew, 2017; Gordon, 2015). Unlike the rating scales, the CAPA tool examines the effect of pain on functionality, sleep and the effectiveness of treatment acknowledging the fact that pain is more than just a numerical value (Topham & Drew, 2017).

The CAPA tool was used in a pilot study to replace the NRS in selected hospital units (Donaldson and Chapman, 2013). After a year, the pain satisfaction scores increased from 18% to 95% in units that fully implemented the CAPA tool (Vitullo, 2020). Following the implementation of the tool, 80% of hospital patients reported improved nursing communication and 66% preferred the CAPA tool over the NRS for pain evaluation (Vitullo, 2020).

1.1.2 POP management

Effective pain management has become an indicator of good clinical practice and quality of care (Montes et al., 2017). Currently, POP management is multimodal analgesia centred (Small & Laycock, 2020) and requires the concurrent use of more than one analgesic drug or technique class to target different analgesia mechanisms while reducing opioid-induced side effects (Wu & Raja, 2011). According to Wu & Raja (2011), Injection (pethidine [meperidine]), suppository (diclofenac or paracetamol [acetaminophen]), and tablet (tramadol, paracetamol) analgesics are widely used in POP management.

According to Imani (2011), current literature on POP management also pays attention to the patient-controlled analgesics (PCA), whereby a device administers a pre-programmed dosage of opioid analgesia when a patient pushes the demand button (with or without a continuous background infusion). This approach regulates pain control levels better than i.v. bolus dosages and it also improves patient satisfaction and compliance (Carstensen & Møller, 2010). Furthermore, relatively low bolus opioid dosages are useful and have fewer side effects on patients (Meissner et al., 2015). On the other hand, the complexity of PCA's is that it may result in medication errors such as programming mistakes and complications such as phlebitis and bacteremia (Meissner et al., 2015).

Equally non-pharmacological approaches can be helpful, and not all pain therapy is pharmacologically centred. According to Boldt et al. (2011), non-pharmacological interventions are non-medicinal measures employed in clinical practise by clinicians. These

interventions aim to complement pharmacological interventions (Gelinas et al., 2013) with a focus on the psychosocial processes involved in pain perceptions and response in order to change behaviour, cognitions and emotions (Ali et al., 2013). Hence, non-pharmacological pain relief methods such as breathing exercises, massage, positioning, music therapy (Boldt et al., 2011), cold or heat therapy and physical therapy are encouraged to patients (Kuusniemi & Pöyhiä, 2016; Poulsen & Coto, 2018).

1.1.3 Barriers to effective POP assessment and management

Pain assessment and management can be a complex process due to the subjective nature of pain in that timing, route and appropriate use of analgesics must all be taken into account. (Francis & Fitzpatrick, 2013). Some benefits of effective POP management include a reduced length of hospital stay, lower healthcare cost (Garimella & Cellini, 2013), early ambulation and improved patient recovery (Imani, 2011). Despite this, patients continue to experience moderate to severe pain despite advances in pain management, such as patient-controlled analgesia (PCA) and multimodal analgesia use (Brown et al., 2013).

A review of the literature indicates various reasons for ineffective POP management, including inadequate pain assessment (Setegn et al., 2017), nurses negative attitude in the use of analgesia (Yin et al., 2015), inadequate clinician knowledge among health professionals, lack of a multidisciplinary approach to pain management, cultural influences and inappropriate attitudes among health professionals, patients and their families (Aziato & Adejumo, 2014). Recent research by Al Qadire & Al Khalaileh, (2014) indicates that the inadequacies in pain management can be attributed to nurses' lack of knowledge and training in pain management. It was linked to the fact that most nurses have negative attitudes, perceptions and misconceptions about pain which includes the fact that vital signs are the only way to validate the presence of pain, the belief that patients tend to seek attention rather than reporting real pain and the quick addiction of patients to opioids (Al Qadire & Al Khalaileh, 2014).

In other research by Keefe & Wharrad (2012), inadequacy in education is reported to be the major challenge to comprehensive pain management in that, less than 1% of university-based teaching for healthcare professionals is on pain education, with nurses receiving an average of 10.2 hours of pain content across their entire program. Furthermore, most pain education is given in the form of didactic lectures (Keefe & Wharrad, 2012). Although this traditional educational approach improves knowledge, it does not always result in changed behaviour or practice (Keefe & Wharrad, 2012). Also, according to Aziato & Adejumo (2014), a review of

the curricula for nursing programs indicated that there was no specific course for pain management, implying that the educational preparation for Ghanaian nurses in pain management is inadequate. Furthermore, the Ghana Health Service or Ministry of Health had no clear policy on POP management at the time of the study (Aziato & Adejumo, 2014). Aziato et al. (2015) also found no specific, systematic and formalized pain assessment method within the clinical context with little or no use of pain assessment scales or tools in Ghana.

A study was conducted in two governmental hospitals in the United Arab Emirates to assess nurses knowledge in pain management (Salim et al., 2019). However, findings indicated that the mean score on the Knowledge and Attitudes Survey Regarding Pain (KASRP) was 45%, significantly below the passing score of 80% highlighting that the nurses in both hospitals had poor knowledge and attitude in POP management (Salim et al., 2019). A handful of international studies have also used the Nurses KASRP, to examine nurse knowledge of pain management with results showing that nurses from Turkey (35%), Italy (55%), Iran (66.6%), Saudi Arabia (42%), Canada (41%) and the United States (72%) have inadequate knowledge and attitudes regarding pain (Eid et al., 2014; Shahriary et al., 2015; Brant et al., 2017). Insufficient knowledge of all aspects of pain management, including assessment, monitoring and pharmacological treatment of pain, particularly with frequently used opioids are barriers healthcare professionals face (Pediaditaki et al, 2010). Many nurses report that the reason for their inadequate knowledge was that little emphasis was placed on pain management in the pre-registration nursing curriculum (Yava, et al., 2013). Chow & Chan (2015) agreed that shortcomings in pain education during nursing training is responsible for ineffective pain management by registered nurses (Drake & Williams, 2017). Although student nurses do receive information about acute pain during their education, it is possible that the education provided is not comprehensive enough leaving nurses with inadequate knowledge to effectively manage patients' pain (Abdalrahim et al., 2010). Although pain is becoming more widely recognized as a complicated experience, it remains one of the most neglected and under-treated patient complaints (Onianwa et al., 2017).

Health care institutions also play a role in inadequate POP management in that, they might not provide clear policies and procedures for pain assessment and documentation, and there might be no uniform approach recommended or availability of pain assessment tools (Aziato, 2012). Furthermore, health care professionals may not be held accountable for ineffective pain assessment thereby perpetuating poor practice (Aziato, 2012). Importantly, Aziato (2012), adds that effective POP management does not depend on the development of new

techniques but rather institutions should focus on utilizing existing expertise and resources. Therefore, health care institutions must make patients' pain relief a priority by creating an enabling environment where adequate resources are available to meet the objective (Aziato, 2012). This makes it necessary to use a holistic approach that supports the use of multiple methods in the natural environment to help understand the multifaceted factors involving pain response and management (Aziato, 2012).

1.1.4 Facilitators to effective POP assessment and management

Education is however believed to increase nurses' knowledge and improve attitudes towards pain management (Keyte & Richardson, 2011), which would, in turn, improve nursing practice and pain management, including pain assessment, medication use and documentation (Al Qadire & Al Khalaileh, 2014). Nuseir et al. (2016) recommend enhancing clinician knowledge through improving education and conducting training programs on available pain assessment and management strategies. In addition, Aziato & Adejumo (2015) also suggested the inclusion of credit-bearing courses on pain management in nursing curricula at all training levels. This boils down to the fact that the quality of pain treatment depends on the knowledge, attitudes and skills of the nurse (Abdalrahim et al., 2011). This requires empowering nurses with knowledge, supervision guidance and continuing professional education (Abdalrahim et al., 2011). As a result, health professionals would be in a better position to provide high-quality care and improve patient outcomes. That said, there is evidence that the introduction of a pain education program (PEP) is effective in improving nurses' knowledge, attitudes, assessment and management of acute pain in post-operative patients (Al-Hashimi et al., 2015; Aziato & Adejumo, 2015; Chambers & Shepler, 2018).

1.1.5 Role of health institutions

Pain is a unique symptom, and its assessment and management differ from that of any other clinical symptoms (Bernhofer et al., 2016). Due to the uniqueness of pain, some nursing administrators have taken a keen interest in organizing PEP for clinical nurses on pain mechanisms, assessment and treatment options (Schreiber et al., 2014). For example, one large Midwestern healthcare system provided full-day pain management lectures for nurses four to six times per year using didactic lectures and discussions to address the necessity for pain management education (Bernhofer et al., 2016). The nurses' understanding of the course content is usually assessed immediately after the class and sometimes at a designated time to measure its effectiveness and generally, most of the nurses reported that the lectures were

very helpful (Bernhofer et al., 2016). However, Al Qadire & Al Khalaileh, (2014) suggests that the nurses required periodic refresher courses and research updates in the field to maintain the knowledge they had gained.

1.2 Rationale for the study

Evidence-based practice (EBP) is a vital aspect of contemporary nursing, and nurses value the research on which their practice is based (Friesen-Storms et al., 2015). However, it takes about 8–30 years for research findings to be published and implemented into practice (Friesen-Storms et al., 2015). Therefore, it is necessary to reduce the time lag by addressing specific factors while improving efficacy in evidence-based service delivery to effectively influence change in practice (Parry et al., 2017). One way to do this is by adopting the action research approach which is a problem-solving approach and results in an improvement in practice (Clark et al., 2020). The key feature of action research is that it helps in improving educational practice through gathering evidence to implement change in practice (Clark et al., 2020). Hence introducing a pain education program (PEP) to train nurses on the use of an adopted pain assessment tool and management protocol would promote the translation of research findings into evidence-based practice to promote quality healthcare and improve patient outcomes.

This project aims to utilize action research to assess the impact of an implemented PEP on the knowledge and attitude of nurses in POP assessment and management in the surgical units of the 37 military hospital.

To facilitate the prompt and effective promotion of evidence-based practice in POP assessment and management by nurses, the following PIO question was formulated:

What is the impact of an implemented pain educational program on the use of an adopted POP assessment tool and management protocol on the knowledge and attitude of surgical unit nurses?

Population and their problem – Inadequate knowledge of surgical unit nurses in the assessment and management of POP.

Intervention – Implementation of a PEP including the use of a pain assessment tool to improve the knowledge and attitude of surgical unit nurses in POP assessment and management.

Outcome – To increase knowledge and improve attitude of surgical unit nurses in POP assessment and management.

1.3 Dissertation structure

Chapter 1 – Introduces the topic for this proposed research and outlines my interest in undertaking the project. It discusses the rationale for this study before going onto provide an overview of the literature.

Chapter 2 – Provides an in-depth literature review to assess data on the impact of an implemented PEP on the knowledge and attitude of nurses. It demonstrates the PEO, PRISMA flowchart and quality appraisal of articles relevant for the study.

Chapter 3 – Details the proposed research approach for the desired study using a qualitative action research approach to translate evidence-based practice.

Chapter 4 - Is a reflective account of the research project employing Schön's (1983/1991) reflective model to help participants become aware of their implicit knowledge base and learn from their experience.

Chapter 5 – Concludes and organises the main aspects of the research proposal.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

In the previous chapter, nurses' knowledge in POP assessment and management was observed to be a potential barrier to effective control of patients' pain. This has potentially serious implications for patients' recovery. Targeted education was identified as a potential strategy to increase nurses' knowledge and improve attitudes towards pain management (Keyte & Richardson, 2011) and is the focus of this research. The purpose of this chapter is to explore the literature and existing research on the impact of PEP on the knowledge and attitude of nurses in POP assessment and management.

2.2 METHODS

This literature review will employ a systematic approach to establish the extent of literature on the impact of a pain education program on nurses' knowledge and attitudes in POP assessment and management in the surgical unit.

2.2.1 Search Strategy

An initial scoping review to see the extent of what is already known on the impact of PEP on nurses' knowledge and attitudes in POP assessment and management in the surgical units was conducted to help the researcher gain all relevant information. The specified inclusion and exclusion criteria served as a guide for a detailed search through three electronic databases: cumulative index of nursing and allied health (CINHAL), Medline and PubMed via the Edinburgh Napier University Library. These databases were chosen for their comprehensive subject coverage in life sciences, which is often required by health professionals engaged in clinical care and other educational activities. A combined search using Boolean operators "effect" OR "impact" AND "pain management program" OR "pain education program" was done through CINHAL and Medline. The expanders were set to apply equivalent subjects and limited to articles published in English between 2010 and 2020. Articles were also searched on PubMed using the same search terms and limiters. The results were then imported to EndNote X9 Version (Bld 12062) for further screening. The references of the selected articles were reviewed by the researcher and some key articles were included in the analysis.

2.2.2 Selection criteria

Studies were included if they assessed the impact of PEP on nurses' knowledge and attitudes in pain or POP assessment and management in the surgical unit. The population, exposure and outcome framework served as a guide for defining the inclusion and exclusion criteria for selecting articles for this review as detailed below in Table 1. Quantitative research assessing the impact of PEP on nurses' knowledge and attitudes in pain assessment and management in the surgical units conducted in English and published in peer-reviewed journals were included. Below is a tabular illustration of the inclusion and exclusion criteria.

Table 1. inclusion and exclusion criteria

PEO	Inclusion	Exclusion
Population	Surgical unit nurses	Non surgical unit nurses
Exposure	Studies describing pain education programs as the main exposure	Studies where pain education programs were not the main exposure
Outcome	Studies that assessed the impact of PEP on the knowledge and attitude of surgical unit nurses in pain assessment and management.	Studies that did not assess the impact of PEP on the knowledge and attitude of surgical unit nurses in pain assessment and management.

2.2.3 Quality Appraisal

Critical appraisal of research literature is a key step in identifying and applying evidence-based practice (Wendt & Miller, 2012). Quality appraisal tools help to determine the methodological quality of scientific studies (Wendt & Miller, 2012). Their use allows systematic analysis of research evidence to assess its validity, results and relevance before applying it into practice (Hannes, 2011).

A thorough critical appraisal to identify the strengths and limitations of the retrieved articles that met the inclusion criteria was carried out. The Joanna Briggs Institute (JBI) Checklist for Quasi-experimental Studies was used to evaluate the validity of the articles (Zhang et al., 2008; et al., Al Qadire & Al Khalaileh, 2014; Germossa et al., 2018) (Appendix A). The JBI

was chosen by the researcher because of its simplicity and the relevant suggestions given when completing the nine (9) question checklist. The JBI also provides simple "yes, no, unclear and not applicable" options as answers to its question, making it even easier for novice researchers to use. Also, the Effective Public Healthcare Panacea Project (EPHPP) quality assessment tool for quantitative study which goes as far as assessing how strong or weak the study is was used to assess the validity of the articles which were Randomized control trials and Cohort studies (Abdalrahim et al., 2011; Onianwa et al., 2017; Salim et al., 2019) (Appendix B). Below is a data extraction table that provides an overview of the merits of each paper.

2.3 Results

The researcher followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Page et al., 2021) guidelines to highlight the articles' refining process in this study. The original search through CINHAL, Medline, PubMed and Google scholar yielded 120 articles. Sixty-five articles were screened based on titles and abstracts related to the topic after duplicate articles were excluded using EndNote. Forty articles were excluded at this stage and the remaining 25 full-text articles were screened for inclusion. Six articles met the inclusion and exclusion criteria and were finally included in the review. The flowchart below outlines the selection sequence in detail.

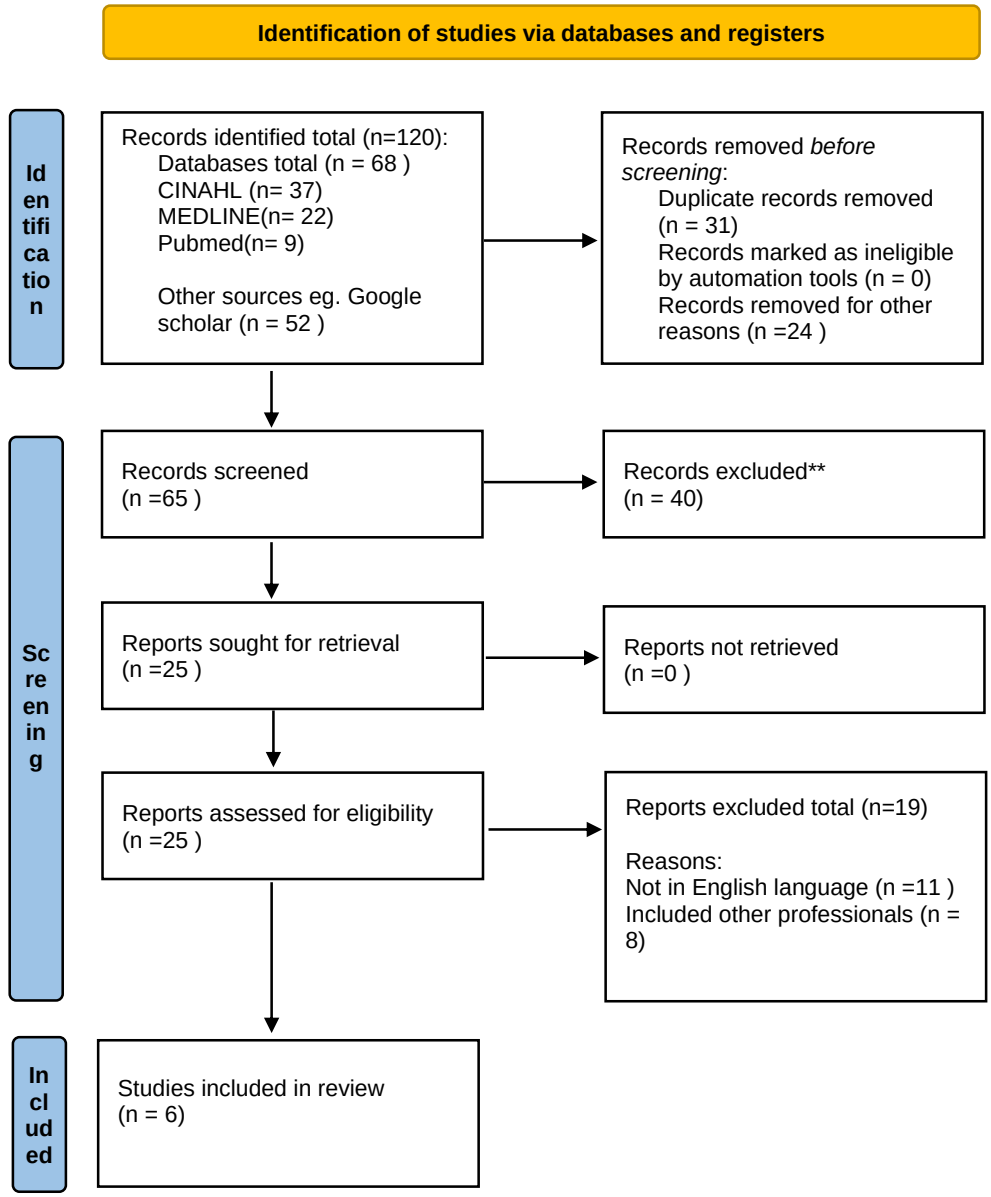

Figure 1: PRISMA flowchart

2.4 STUDY CHARACTERISTICS

Three of the studies were conducted in Asia (Zhang et al., 2008; Abdalrahim et al., 2011; Al Qadire & Al Khalaileh, 2014), two in Africa (Onianwa et al., 2017; Germossa et al., 2018) and one in the Middle East (Salim et al., 2019) all of the which were quantitative studies. Studies by Zhang et al. (2008) and Germossa et al. (2018) used a quasi-experimental design whilst studies by Abdalrahim et al. (2011) and Onianwa et al. (2017) were cohort studies. Al Qadire & Al Khalaileh (2014) utilized a simple pre-test post-test design and the study by

Salim et al., (2019) was a randomized controlled trial (RCT). Additionally, the quality of all studies was rated strong.

The included studies were conducted in the medical, surgical, ICU, oncology, maternity and gynaecology units with nurses as the study population. The study by Abdalrahim et al. (2011) assessed the effect of a POP management program on the knowledge and attitude of nurses in the surgical unit. It was the only study that had its focus on pain among postoperative patients. The study by Al Qadire & Al Khalaileh (2014) focused on the medical, surgical, ICU, oncology, gynaecology, and other units whilst Germossa et al. (2018) conducted the study on medical, surgical, maternity, and gynaecological units. Zhang et al. (2008) conducted their study on the medical, surgical and oncology wards whilst the remaining studies by Onianwa et al. (2017) and Salim et al. (2019) were conducted on all wards. The table below (Table 2) are details of the characteristics of the included studies.

Table 2. Study Characteristics

Quality assessment	Author, year, country	Sample size/ participant demographic	Aims, PRIMARY AIM	Data Collection methods	Data collection instruments	Data analysis	Results	Recommendations
Strong	Zhang et al., (2008) Year: 2008 Country: China	Participants: nurses in two hospitals in Hubei province in central China. Sample: nurses in two surgical wards, two medical wards and one oncology unit. Sample size:196	(1) To improve nurses' knowledge and attitudes regarding pain and pain management. (2) To increase nurses' skills to perform better pain management behaviours (such as using a pain assessment tool	*A quantitative study. *Quasi-experimental design.	A 37-item Nurses' Knowledge and Attitude Survey (NKAS) questionnaire developed by Ferrell et al. (1993) that assesses nurses' knowledge and attitudes toward pain.	* Data was analysed using SPSS *Data were analyzed using descriptive statistics. *One-way analysis of variance (ANOVA) * Chi-squared	*The overall response at the preintervention stage was 95.4% (187 of 195) and 92.9% (182/196) 1month and 98.5% (193/196) 3months postintervention surveys. *Preintervention: The mean score of the control group was 15.20 (SD= 3.54); the mean score of the experimental group was 15.67 (SD = 3.83). *Postintervention: One month	*Most participants realised the PEP had a positive impact on nurses' pain knowledge, attitude and assessment practices. *The study suggested implementing the PEP in nursing practice with a more extended program since the time for implementation was short.

			in clinical practice).			analyses	after PEP mean score of control group (n= 80) was 14.29 ± 3.45) three months after PEP mean score of control group (n= 90) was 14.93 ± 3.93) One month after PEP mean score of experimental group (n= 102) was 26.13 ± 6.11. three months after PEP mean score of experimental group was (n= 103) was 31.14 ± 5.74) *There was an increase in nurses' knowledge and attitude towards pain management and more nurses were able to use the Changhai Pain Scale correctly to measure patients' pain intensity.	

Strong	Abdalrahim et al., (2011) Year: 2011 Country: Jordan	Participants: nurses at a university hospital in Jordan. Sample: nurses working in two surgical wards. Sample size: 65 registered nurses.	To explore nurses' knowledge of and attitudes toward pain in surgical wards before and after implementation of a postoperative management program.	*A quantitative study. *Cohort study	A 21-item questionnaire developed by Zanolin et al. (2007) that assesses nurses' knowledge and attitudes toward pain.	*Data was analysed using SPSS *Data were analyzed using descriptive statistics. *Kruskale Wallis test	*The overall response at the preintervention stage was 45.7% indicating the nurses lacked sufficient knowledge about pain and had negative attitudes toward pain management. * With questions related to using the pro re nata (PRN) basis to give analgesia nurses had the lowest percentage (15.4%) score. * The overall response after implementation of the program was 75% indicating an increase in nurses' knowledge and attitude towards POP management.	* The nurses realised that the pain education programme could help improve their knowledge of pain and attitudes towards pain management. * The education programs can improve the delivery of safe practice and ensure the achievement of patients' outcomes. * The study suggests the educational programme should include a variety of teaching approaches and allow enough time for a change in knowledge or attitude to develop.

Strong	Al Qadire & Al Khalaileh (2014) Year: 2014 Country: Jordan	Participants: nurses from eleven hospitals in Jordan Sample: registered nurses working in the medical and surgical wards. Sample size (n=70) Medical -14 Surgical – 13 ICU – 14 Gynaecology-8 Oncology – 10 Missing - 11	To evaluate the impact of pain education (intervention) on Jordanian nurses' knowledge and attitudes regarding pain management.	*A quantitative study. * Simple pre-post-test design	A 40-item Knowledge & Attitude Survey (KAS) questionnaire that examines nurses' knowledge and attitude towards pain	* Data was analysed using SPSS *Data were analyzed using descriptive statistics. *The Wilcoxon test *MacNemar test .	*Preintervention: The mean score was 19.20 (SD=5.4) indicating nurses' inadequate knowledge and attitude towards pain. *This could be because nurses may receive limited pain education in their undergraduate programmes, and few nurses received post-graduate continuous education. *Postintervention: The mean score was 24.34 (SD= 4.8) indicating the educational course on pain management was effective in improving nurses' knowledge and enhancing positive attitudes toward pain management	* The study suggests the need for integrating a comprehensive pain education within the undergraduate curriculum for nursing students. * In addition, continuous pain education programs should be organised to enhance nurses' ability and skills to assess and manage pain

Strong	Onianwa et al., (2017) Year: 2017 Country: Nigeria	Participants: Nurses at the University College Hospital Ibadan Sample: registered nurses. Sample size: 500 nurses	To evaluate the impact of Nurses' Pain Educational Program (NPEP) on nurses' knowledge of pain management.	*A quantitative study using systematic random sampling	Self-administered questionnaire on nurses' knowledge of pain assessment tools and pain management.	*Data was analysed using SPSS *Descriptive and inferential statistics	*The results of the pre-test (2.6 ± 0.05) showed a deficiency in the baseline pain knowledge amongst the participants * The results of the post-test (4.0± 0.04) showed a significant improvement in nurses' pain assessment and management practice after the implementation of the program	* The study suggests the need to develop and implement a continuous professional education programme on pain and its assessment, with a particular emphasis on pain assessment methods, guidelines, protocols, and documentation in patients. * In addition, hospital management should continually supply tools, charts and protocols for pain management and assessment.
Strong	Germossa et al. (2018)	Participants: Nurses at the Jimma University Medical Center (JUMC)	To investigate the influence of an in-service educational program on nurses'	*A quantitative study. *Quasi-experimental design.	A 41-item Nurses' Knowledge and Attitude Survey (NKAS) questionnaire	*Data was analysed using SPSS *Descriptive	*On average, participants answered 41.4% of the survey items correctly before the intervention and 63.0% after the intervention.	*To incorporate pain management into nurses' workflow. *Provide continuous in-service refresher

	Year: 2018 Country: Ethiopia	Sample: registered nurses from the medical, surgical, maternity and gynaecological wards Sample size: 111 nurses	knowledge and attitudes regarding pain management		developed by Ferrell et al. (2014) that assesses nurses' knowledge and attitudes toward pain	statistics * The Wilcoxon signed-rank test. *The McNamara's test. *The Mann–Whitney U test	*The mean score on KASRP increased after intervention from 17 (SD ± 4.0) to 25.8 (SD ± 7.2)	education and information for nurses.
Strong	Salim et al., (2019) Year: 2019	Participants: Nurses in one of the governmental hospitals in Dubai, United Arab Emirates	To assess the effect of the nursing in-service education program on the nurses'	*A quantitative study. *Quasi-experimental design.	A 39-item Nurses' Knowledge and Attitude Survey (NKAS) questionnaire	*Data was analysed using SPSS *Descriptive	*The findings revealed that the mean score on the KASRP increased after intervention from 61.36 ± 11.60 (mean ± SD) to 69.94 ±7.74, with a mean difference of 8.58 (t (99) = –	* In-service education PMP proved to be effective * To include the PMP as an essential session of a general orientation

	Country: United Arab Emirates Sample: registered nurses Sample size: 200 nurses		knowledge and attitudes concerning pain management		developed by Ferrell et al. (1987) that assesses nurses' knowledge and attitudes toward pain	statistics	5.97, p < 0.05). * In the control group, all nurses maintained the same knowledge and even less on the KASRP at the post-test. The findings revealed that the mean score on the KASRP slightly decreased at the post-test (mean ± SD, 60.99 ± 11.53%) compared to the pre-test (61.00 ± 11.60%) with a mean difference of 0.01 (F (99) = 1.41, p > 0.05;	program for newly hired staff. * Continuous staff evaluation and pain management competency should be done regularly. *Include more effective evidence-based education programs in pain management

2.5 SUMMARY OF FINDINGS

All the studies included measured the knowledge of nurses before and after the introduction of PEP with the use of questionnaires. In the study by Abdalrahim et al. (2011), the overall percentage of correct answers of the 65 nurses who completed the pre-intervention 21-item questionnaire was 45.7% but increased to 75% after the program was implemented with a statistically significant difference ($p < 0.05$) in the number of correct answers between nurses' responses in the pre-intervention and post-intervention phase. Similarly, in the study by Al Qadire & Al Khalaileh (2014), the mean number of correct answers for the pretest was 19.20 (SD 5.4) out of 40 questions. However, two weeks after implementing the education program, the total mean of the correctly answered questions increased to 24.34 (SD 4.8) with the percentage of correct answers ranging from 19% to 87% showing a significant difference in the number of nurses' total correct answers pre-and post-course ($p < .001$).

Also, in Germossa et al. (2018) studies, participants answered 41.4% of the KASRP survey item correctly before the intervention and 63.0% after the intervention. The mean score on KASRP increased after intervention from 17 (SD ± 4.0) to 25.8 (SD ± 7.2) showing that after the nurses participated in the educational program intervention, the mean rank score of nurses' knowledge and attitudes regarding pain significantly improved ($Z = -9.08$, $p < 0.001$) with a large effect size ($r = 0.61$). Similarly, Onianwa et al. (2017) study findings of the pre-test showed a gap in the baseline pain knowledge amongst the participants (2.6 ± 0.05) whilst results of the post-test score showed an improvement in knowledge (4.0± 0.04) which was found to be statistically significant ($p < 0.000$).

In the studies by Zhang et al., 2008, the mean score before the intervention on the NKAS-C was 15.46 (SD=3.70) with an average accurate response rate of 39.6%. The mean score of the control group was 15.20 (SD=3.54) and that of the experimental group was 15.67 (SD=3.83) which showed little difference between experimental and control groups in the test score before intervention ($t = -0.864$, $P = -0.389$). However, after the intervention, the mean scores on NKAS-C of the experimental group at the two post-test points increased significantly ie 26.13± 6.11one month after implementation and 31.14 ± 5.74 three months after implementation (third month: $t = -28.828$, first month: $t = -16.504$, all $P < 0.001$). There was also a significant difference in mean scores between the first month and third-month post-intervention ($F = 350.451$, $P < 0.001$). Similar to results by Salim et al., (2019), there was no significant difference between the pre-test scores for the experimental and the control groups ($p = 0.30$). All respondents in the control group maintained the same knowledge and even less on the KASRP at the post-test with the mean score on the KASRP slightly decreased at

the post-test (mean ± SD, 60.99 ± 11.53%) compared to the pre-test (61.00 ± 11.60%) with a mean difference of 0.01 ($F(99) = 1.41$, $p > 0.05$). However, the findings on the experimental group showed that the mean score on the KASRP increased from 61.36 ± 11.60 (mean ± SD) to 69.94 ±7.74, with a mean difference of 8.58 ($t(99) = –5.97$, $p < 0.05$) after the intervention.

The articles included in the study shared some similarities as well as differences. For example, in four of the studies (Abdalrahim et al., 2011); Al Qadire & Al Khalaileh, 2014); Onianwa et al., 2017); Germossa et al., 2018), the same group of participants used in the pre-implementation phase were used in the post-implementation phase. In contrast, studies by Zhang et al. (2008) and Salim et al. (2019) had an experimental and control group for both pre-intervention and post-intervention phases. However, this factor had no impact on the overall results.

Also, it was only the study by Germossa et al. (2018) that showed the difference in scores between the group of participants in the study. According to the study, female nurses scored higher in the post-test than male nurses whilst nurses in surgical, medical, and gynaecology wards scored higher than those in maternity wards (65.1, 61.8, and 59.2 respectively, compared to 26.3; $p < 0.05$). Also, the study by Abdalrahim et al. (2011) was the only one that assessed the effect of PEP on nurses' knowledge and attitude in the postoperative setting. Overall, the results of all the studies showed that the implementation of a PEP had a positive impact on the knowledge and attitude of nurses in pain management. Although the authors used valid databases for their literature search, details of the literature search and the credibility of the studies included were not mentioned.

2.5.1 Impact of PEP on nurses

It is important to note that nurses are not the only healthcare providers responsible for relieving patients' pain (Alzghoul & Abdullah, 2016). However, they play a key role in delivering direct patient care on a 24-hour basis by assessing pain and providing timely intervention (Aziato & Adejumo, 2014). As previously highlighted, nurses are responsible for regular pain assessment, medication administration, and monitoring of the patient's responses, and these responsibilities require an understanding of the nature of pain in relation to a patient's clinical condition (Germossa et al, 2018). Unfortunately, the highlighted research reveals that many nurses lack knowledge in pain management and consequently patients suffer from poorly managed pain (McNamara et al. 2012; Al Qadire & Al Khalaileh, 2014). As a result, global and local studies suggest that the knowledge and attitudes of all

health care professionals be improved through the development of training programs and professional education trials (Abdalrahim et al., 2010).

In China, a study was conducted in two teaching hospitals in Hubei province to evaluate the effects of the PEP on nurses' pain knowledge, attitudes and assessment practices (Zhang et al., 2008). The PEP consisted of two components: educating nurses about pain management and implementing daily pain assessment utilizing the Changhai Pain Scale which was developed and implemented for nurses (Zhang et al., 2008). The aim of the intervention (PEP) was to evaluate the predisposing and enabling factors of the study participants with the expectation that teaching strategies will positively impact the beliefs, attitudes and skills of the nurses in pain management (Zhang et al., 2008).

The study was conducted based on Green's PRECEDE model of health behaviour which identified three categories of factors that may potentially influence health behaviour (Zhang et al., 2008). These three categories include predisposing factors, such as beliefs, attitudes and perceptions that might facilitate or hinder a person's motivation to perform the desired behaviour; enabling factors, or the skills and resources necessary to perform the behaviour; and reinforcing factors, such as feedback provided by patients or other health professionals that might influence continuance or discontinuance of the behaviour (Zhang et al., 2008).

A total of 196 nurses were included in the study with nurses at one hospital randomly assigned to the experimental condition (program) whereas nurses at the other hospital were assigned to the study control (no program) (Zhang et al., 2008). The PEP consisted of two components: an education program to improve nurses' knowledge and attitudes regarding pain and its management; and a clinical demonstration to implement a daily assessment to increase nurses' skills to perform better pain management behaviours (such as using a pain assessment tool in clinical practice) (Zhang et al., 2008).

Before the implementation of the PEP, the Nurses' Knowledge and Attitude Survey (NKAS) which is a 37-item questionnaire was used to assess nurses' knowledge and attitudes toward pain on both groups of nurses (Zhang et al., 2008). Afterwards, the PEP was conducted for five weeks with three two-hour sessions and each session covered a specific topic: (1) introduction to pain management, the content of which covered basic pain knowledge and the current trends in pain management; (2) pain assessment; and (3) pharmacological pain management and non-pharmacological pain interventions (Zhang et al., 2008).

The results of the NKAS-C showed a mean score of 15.20 (SD = 3.54) for the control group and 15.67 (SD = 3.83) for the experimental group indicating no difference in test score before

intervention (t = 0.864, P = 0.389) (Zhang et al., 2008). After the implementation of the PEP, both groups were tested again with the NKAS-C after the first and third months to evaluate the impact of the PEP. The results showed a big difference between both groups; experimental group mean score after the first and third month (26.13 6 ± 11, 35.14 ± 5.74) and control group after the first and third month (14.29 ± 3.45, 14.93 ± 3.93) (Zhang et al., 2008). Also, according to (Zhang et al., 2008) with regards to the use of pain rating scales to measure patients' pain intensity, there was no difference at baseline between the control and experimental groups ($X^2 = 1.823$, P = 0.177). However, more nurses after the PEP were able to use the Changhai Pain Scale correctly to measure patients' pain intensity in the experimental group than either those before the PEP or the control group (P < 0.001) (Zhang et al., 2008). Based on the findings, it was concluded that PEP caused a change in nurses' attitudes and practices in pain management with an increase in knowledge therefore nurses required systematic training in pain-related topics to enhance their knowledge and skills to manage pain (Zhang et al., 2008). This is a very comprehensive and robust study in 2008, however, its highlights detailed information on the topic since there has been limited study in this field hence the relevance of this study.

Similar studies were also conducted at the University College Hospital Ibadan where a pre and post-test intervention study was used to evaluate the impact of Nurses' Pain Educational Program (NPEP) on the knowledge of 500 nurses' in pain management (Onianwa et al., 2017). Prior to the implementation of the program, participants were given a set of questions to access their basic knowledge on pain management (Onianwa et al., 2017). Afterwards, participants had training and a practicum demonstration on patients on the use of pain assessment tools twice a week lasting 4-5 hours daily for 28 weeks (Onianwa et al., 2017). The NPEP package included five lectures on: introduction to pain; the concept of pain and pain assessment; common myths about pain; pain assessment tools; newly Modified Vital signs Chart to include pain as the 5th vital sign (Onianwa et al., 2017). A post-implementation questionnaire, same as that given in the pre-implementation phase was used to assess the impact of the NPEP on the nurses. The results of the pre-test showed a deficiency in the nurses' baseline knowledge in pain (2.6 ± 0.05) while that of the post-test score was 4.0 ± 0.04, showing an improvement in knowledge which was found to be statistically significant (p < 0.000) (Onianwa et al., 2017). Therefore, this research aims to implement PEP to improve the knowledge and attitude of surgical nurses in POP assessment and management.

2.6 DISCUSSION

This chapter utilized a systematic approach to identify existing research exploring the impact of an implemented PEP on the knowledge and attitude of nurses and to incorporate evidence-based knowledge into practice. There were several similarities identified among the reviewed studies despite their geographical locations.

The studies included in this project were conducted in middle and low-income countries in Asia, Africa and the Middle east between 2011 and 2019. This is very applicable to Ghana which is also a middle-income country for which this proposal is being made. However, a study conducted in 2008 in Asia was included because it addressed vividly the gaps identified and was relevant to the study. Also, all the papers used robust designs and this factor had no effect on the overall results with all rated strong hence can be relied upon.

The findings of this review are consistent with previous studies that assessed the impact of an implemented PEP on the knowledge and attitude of nurses. In addition, all the studies used a quantitative research approach that used validated tools to collect data. Also, the review of articles identified the non-inclusion of credit-bearing courses on pain in the curriculum of nursing students and few nurses received post-graduate continuous education to be other causes of inadequate knowledge among nurses in pain management.

It was evident from the pre-tests conducted that, the nurses had inadequate knowledge in pain-related issues with little or no use of pain assessment tools. For example, results from Abdalrahim et al., (2011) showed that more than half of the nurses included in this study responded with incorrect answers on the Nurses' Knowledge and Attitudes questionnaire which is consistent with the other five studies. However, the results from the post-test showed an increase in nurses' knowledge and attitude towards pain in all the studies.

Al Qadire & Al Khalaileh (2014) suggested pain education should start from the classroom by integrating a comprehensive pain education within the undergraduate curriculum of nursing students. In addition, Al Qadire & Al Khalaileh (2014) and Germossa et al. (2018) agreed that continuous pain education programs should be organised to enhance nurses' ability and skills to assess and manage pain.

Onianwa et al., (2017) also saw the need to develop and implement a continuing professional education programme on pain and its assessment, with a particular emphasis on pain assessment methods, guidelines, protocols and documentation in patients with hospital management continually supplying tools, charts and protocols for pain management and assessment. Salim et al., (2019) suggested the inclusion of a pain management program (PMP) as an essential session of a general orientation program for newly hired staff, to

include more effective evidence-based education programs in pain management and a continuous staff evaluation and pain management competency to be done regularly to sustain the practice. In Abdalrahim et al., (2011) view, the educational programme should include a variety of teaching approaches and allow enough time for a change in knowledge or attitude to develop which was agreed by Zhang et al, (2008) in that, although the PEP was effective, the duration for the program should be extended to ensure maximum effect.

These findings showed an improvement in nurses' knowledge and attitude after a PEP was implemented. This underlines the need to implement educational programs for nurses to improve their knowledge and attitude in pain assessment and management and thus inform the choice of methodological design in Chapter 3 of this study.

2.7 LIMITATIONS AND STRENGTH OF THE REVIEW

One strength of this review is the integration of different types of quantitative studies where three of the articles were quasi-experimental studies, two were cohort studies and one a randomized controlled trial. However, three of the six included studies were conducted in Asia, two studies in Africa and one in the Middle East, but none from America, Europe and Australia. The exclusion of these high-income counties from this review is biased and somehow affects the generalizability of the study. Furthermore, some of the studies did not have control groups which limited the validity of the study. Also, because only papers published in English in peer-reviewed publications were included, there is a chance of publication bias. However, these papers were included despite their bias risk. In addition, the inexperience of the researcher could also negatively affect the credibility of this review. Additionally, to increase the credibility of this review, a systematic comprehensive search strategy based on specific inclusion and exclusion criteria and data search with electronic databases and web search engines known for their broad coverage in life sciences particularly healthcare were employed in addition to an in-depth discussion with my supervisor was used.

2.8 **RECOMMENDATIONS**

It is evident that all the studies provide empirical evidence that an educational program significantly improved nurses' knowledge and attitudes in pain management. Hence efforts should be put in place to ensure the successful implementation of a PEP that would effect change in nursing practice. To improve nurses' knowledge and attitude in pain management and evidence-based practice, academic and regulatory bodies need to include pain management courses into all trainee nurses' educational curricula. Also, the in-service

education department in all hospitals should organize workshops and pain education programs for staff regularly and the peer review board should regularly monitor the nurses to ensure adherence to practice. In addition, standardized quality improvement methodologies such as the Plan-Do-Study-Act (PDSA) cycle can also be employed to help consistently identify challenges and re-evaluation of success. Because the PEP proved to be effective in multiple inpatient care settings, it is recommended to implement the PEP in nursing practice

IDENTIFICATION OF GAP IN THE LITERATURE

Although these studies demonstrate that education is important and useful in improving nurses knowledge and attitude in pain assessment and management, they did not measure the impact in clinical practice, nor may they apply in the proposed study setting. Currently, educational programs organised for nurses at the 37 military hospital are most often in other areas such as infection prevention and control and pain management is neglected.

Also, the approach used by these studies was not action research which helps implement evidence-based practice which is why I have adopted this approach for this project. In addition, the majority of these studies were limited to countries in Asia and Africa and used a quantitative approach (pre-test and post-test questionnaires) to assess the impact of PEP on the knowledge and attitude of nurses in pain management (Zhang et al., 2008; Abdalrahim et al., 2010; Al Qadire & Al Khalaileh, 2014; Onianwa et al., 2017). In addition, the studies did not measure an improvement in the attitude of nurses nor assess if the PEP caused a change in the practice of nurses in pain assessment and management. However, according to (Creswell 2014), rather than restricting meaning into a few categories of ideas, a qualitative study design allows the researcher to investigate the complexities of ideas. Hence this study would aim at assessing the impact of a PEP on the knowledge and attitude of surgical unit nurses at the 37 Military Hospital and would help translate acquired knowledge into evidence-based practice to improve patient outcomes.

CONCLUSION

All the studies assessed the knowledge of nurses on pain assessment and management before and after the introduction of the PEP. Nurses' inadequate knowledge in pain management is the cause of their negative attitude towards pain assessment and management. The introduction of the nurses' PEP has a positive effect on nurses' knowledge, attitude and demonstration related to pain assessment and pain management. Continuous educational workshops organized periodically with frequent monitoring and assessment of nurses can

help sustain the practice.

CHAPTER THREE

3.0 METHODOLOGY

3.1 RESEARCH APPROACH AND PERSPECTIVE

This research intends to assess the impact of a PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management. Hence, will utilize action research to evaluate the impact of an implemented PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management. Because action research is designed to ensure the implementation and translation of evidence-based practice, this project interests to improve nurses knowledge in order to effect change in their attitudes and practices in POP assessment and management.

3.1.1 Application of evidence-based practise (EBP)

Evidence-based practice (EBP) in nursing literature is now a well-established concept (Munten et al., 2010). It refers to integrating the best research evidence with clinical expertise and patient needs and values in clinical decision making (Burns & Grove, 2010).
The basic principles of EBP are that there should be regular and consistent application of proven, reliable and current results of research studies in everyday practice and make therapeutic decisions on the care of the individual patient whiles eliminating ineffective practices and unnecessary costs (Mędrzycka-Dąbrowska et al., 2016). Education has however been observed to be the most frequently used intervention for promoting the use of research findings in practice and educational strategies improve nurses' knowledge (Munten et al., 2010). Therefore, this research aims to assess the impact of PEP on the knowledge and attitude of surgical nurses in POP assessment and management.

The author has previously discussed how PEP has improved the knowledge and attitude of nurses towards pain management based on other studies. In order to address the research problem, it is important to carefully consider which research approach is most appropriate. For this reason, the researcher intends to explore the concepts of constructivism and interpretivism as a means to identify an appropriate research methodology that can provide an ontological and epistemological approach to the study.
According to Mojtahed et al. (2014), the constructivist paradigm aligns with a qualitative research approach by focusing on the participants' perspectives of the topic under investigation. As this research is interested in nurses perspectives on the impact of PEP on their knowledge and attitude towards pain assessment and management, a social

constructivist paradigm is appropriate. The social constructivist approach posits that the collective generation of meaning is shaped by conventions of language and other social processes rather than the individual mind's meaning-making activities (Kim, 2014). In other words, human actors construct meaning through social interactions rather than individual perceptions. For this reason, social constructivists believe that in order to establish shared meaning and gain an understanding of human perceptions, the researcher must establish a reciprocal relationship with research participants (Mojtahed et al., 2014). Furthermore, the qualitative approach utilized, allows the researcher to seek diverse views and in-depth meaning by relying exclusively on participants' opinions on the issue under investigation rather than restricting respondents to preset questions and answers limiting their ideas (Creswell, 2014).

3.2 RESEARCH OBJECTIVE

This research has its basis in a quality improvement project designed to introduce an educational package to nurses in the surgical unit of a tertiary hospital. The key objective is to assess the impact of the PEP on the knowledge and attitude of the surgical unit nurses in POP assessment and management with the adoption of a pain assessment tool and management strategy at the 37 military hospital.

3.3 RESEARCH QUESTION

The research will seek to answer the following questions from the perspective of surgical unit nurses:

1. What are the perceived barriers to effective POP assessment and management among nurses in the surgical unit of the 37 military hospital?
2. What strategies can be put in place to improve nurses' knowledge and attitude in POP assessment and management at the 37 military hospital?
3. What is the impact of a PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management at the 37 military hospital?

3. 4 OUTCOME

The researcher expects an improvement in the knowledge and attitude of surgical unit nurses in POP assessment and management at the 37 military hospital after the implementation of a PEP.

3.5 STUDY DESIGN, METHOD OF DATA COLLECTION AND ANALYSIS

Because this project aims to ensure the implementation of evidence-based practice, an action research approach will be adopted.

Action research (AR)

Nurses that are committed to EBP demonstrate professionalism and growth which contributes to their professional identity (Eizenberg, 2011; Christensen & Andrysek 2012). However, applying EBP is not easy, as several authors have pointed out a gap between research and practice, hence action research is considered a suitable implementation strategy for EBP (Munten et al., 2010). Action research is a useful approach that does not only gather knowledge about a particular problem but also (help) implement and evaluate solutions (Munten et al., 2010). It is educative and empowering, involving a dynamic approach in which problem identification, planning, action and evaluation are interlinked (Munten et al., 2010). As such this is an effective approach to the inadequacies in POP assessment and management through the implementation of a PEP to the surgical unit nurses.

In healthcare, AR is discussed as a transformative approach that evolves continuously, attending to the ‘‘quadruple’’ aim (Bodenheimer & Sinsky, 2014) which intends to (1) improve patient experiences and the health of populations, (2) reduce the per capita cost, (3) improve the work-life of those who deliver care, and (4) bring healthcare providers into circumstances that allow for continuous learning together with patients (Bradbury & Lifvergren, 2016). Also, AR often follows the principles of community-based participatory research (Bradbury & Lifvergren, 2016). The key is that the stakeholders—patients and their families, caregivers, co-workers, managers, and academics—work together as learning partners (Nicolaidis & Raymaker, 2015).

According to Munten et al. (2010), there are two criteria fundamental to action research. The first part of a cyclic process is an intervention must be carried out starting with problem identification or diagnosis (including reflection), then progresses to planning, action (change implementation and monitoring) and rounds of evaluation/reflection before beginning a new situation analysis. The second fundamental criterion concerns the partnership between the researcher and those being investigated in the research process. This partnership is necessary for developing practical knowledge and implementing change in practice (Munten et al., 2010). In this regard, participants play a vital role as informants and change agents.

AR is much more than a tool; it is a philosophical approach to change (Williamson et al., 2011). According to Williamson et al. (2011), AR mirrors the nursing process, quality circles

and reflective practice models hence it is convenient for nurses. Also, the six elements of AR which include; reflect on a theme, plan action, take action to change practice, observe and evaluate, reflect and plan are employed to facilitate the implementation of change (Williamson et al., 2011).

AR allows practitioners to develop practice by introducing change in response to a need or problem (Brown & McCormack, 2011). According to Williamson et al. (2011), there are four potential benefits of AR in the healthcare setting which includes; the development of new services, improvement in healthcare particularly the effectiveness of new policies, improvement in the knowledge and understanding of important policy areas among participants and increasingly to secure greater involvements of service users. Interventions based on theory-based information translation are more likely to influence behavioural change, leading to improved clinical practice (Anekwe et al., 2020). AR, therefore, enhances professional development through learning opportunities (Koshy et al., 2010).

Most of the studies reviewed in the previous chapter used pre-test and post-test questionnaires to assess the impact of PEP on the knowledge and attitude of nurses in pain management (Zhang et al., 2008; Abdalrahim et al., 2010; Al Qadire & Al Khalaileh, 2014; Onianwa et al., 2017; Germossa et al., 2018; Salim et al.,2019). However, most often than not, these questionnaires do not specifically provide the rationale behind the reported findings and participants were limited to pre-selected responses and unable to expand ideas (Hollin et al., 2020). For example, a key finding was that most nurses knowledge improved after the PEP, however, the helpful aspect was not explored. This research seeks to address these gaps in knowledge and gain an in-depth understanding of the impact of an implemented PEP on the knowledge and attitude of surgical unit nurses at the 37 military hospital. Therefore, an action research approach employing qualitative research design will be the most appropriate method to answer these questions and also gain sufficient knowledge to positively impact practice through in-depth semi-structured interviews.

Qualitative research involves the systematic collection, organization, description and interpretation of textual, verbal or visual data (Hammarberg et al., 2016). It is used to explore meanings of social phenomena as experienced by individuals in their natural environment (Grossoehme, 2014) without control or manipulation from the researcher (MacDonald, 2012). It is a process to ensure reflexivity which would be explained later in the chapter.

Qualitative research relies on personal interaction between the researcher and the group being studied over a period of time (Tuli, 2010) to gain insight into experiences and meaning from the participants' perspective (Hammarberg et al., 2016). In addition, qualitative studies are

exploratory, actionable and hypothesis-generating in nature as compared to quantitative studies which usually test theories or records predictions (Hollin et al., 2020). Qualitative methodologies are inductive, that is, geared toward discovery and process, have high validity, more concerned with a deeper understanding of the research problem in its unique context and are less concerned with generalizability (Tuli, 2010). Three main data gathering methods which vary considerably from each other are employed in a qualitative study; qualitative interviewing, focus group discussions and ethnography (Bryman, 2016). Also, other methods of qualitative data collection include phenomenological research and the grounded theory method (Grossoehme, 2014). However, because an action research approach is being employed which involves putting research into practice, interviews would be used to collect data instead of the other methods (focus group discussions, ethnography, phenomenological research and the grounded theory research).

Qualitative interviews, probably the most widely used qualitative research method explore the experiences of individuals (Grossoehme, 2014) through a series of unstructured or semi-structured interview guides to obtain rich, detailed information from individual participants (Bryman, 2016). In the healthcare context, the semi-structured interview is the most frequently used technique because of its versatility and flexibility (Kallio et al., 2016). When thinking of conducting interviews, using open and close-ended questions are the ways data can be collected. The goal is to provide all participants with the same interviewing context, implying that each one experiences the exact same stimulation (Bryman, 2016) making it easy to get the answers desired. One advantage of the semistructured interview is that it allows reciprocity between the interviewer and the participant (Galletta 2012), enabling the interviewer to ask follow-up questions based on the participants' responses (Polit & Beck 2010). However, some common problems associated with the semistructured interview is the interviewer not having a well-developed interview guide with open-ended questions and asking questions in an insensitive way, not effectively probing or asking for follow-up questions and failing to actively listen (DeJonckheere & Vaughn, 2019). Some likely semistructured interview questions include;

How confident do you feel assessing pain? Tell me more about it.

Do you use any pain assessment tool in assessing patients pain?

Tell me about your pain management practice?

Do you think they are effective in any way?

3.5.1 STUDY DESIGN

A research design is a framework for collecting data to answer a specific research question (s) (Bryman, 2016). It is however important to choose a design and method that are appropriate for the goals and objectives of the study (Auriacombe & Meyer, 2020). Because my objective is to put research into practice, an action research approach is considered appropriate but would however take a qualitative design form.

Action research (AR) involves working with the community or organization members who are seeking to improve their situation (MacDonald, 2012) by enhancing professional development through learning opportunities (Koshy et al., 2010). AR aims at solving an organizational problem, presenting content/theories/protocols and developing a paradigm for the standard way to act or do something (Cordeiro & Soares, 2018) which is in line with this proposal which aims to assess the impact of PEP on the knowledge and attitude of nurses with the adoption of the CAPA tool (Appendix C) to improve POP assessment and management.

AR are conducted in various forms such as Participatory action research (PAR), critical action research (CAR), action learning, participant inquiry, practitioner inquiry and cooperative inquiry (Barns, 2015). Employing action research in this research implies working together with the surgical nurses and the institution to implement a PEP to improve nurses knowledge and attitude in POP assessment and management. PAR which is a dynamic educative process and approach to address a problem (MacDonald, 2012) would be used. This approach is chosen because it is in line with the research aim to (a) bring about positive change and improvement in the participants' social situation; (b) generate theoretical as well as practical knowledge about the situation; (c) improve teamwork, collaboration and involvement of participants who are actors in the situation and are most likely to be affected by changes; and (d) establish an attitudinal stance of continual change, self-development and growth (Barns, 2015).

Qualitative research design which is primarily concerned with the acquisition of an in-depth understanding of complex phenomena to arrive at actionable solutions to research questions (Creswell, 2014; Bryman, 2016) would be used in combination with PAR to assess the impact of PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management.

3.5.2 DATA COLLECTION AND PROCEDURE

Data collection represents the key point in a research project (Bryman, 2016). This qualitative

project would use interviews to obtain information from the participants. The focus group discussion would have also been a good data collection procedure because it allows participants to interact with each other enhancing creativity and empowering them to be active participants in the ideas development process (Niederkrotenthaler et al., 2011). However, although the interaction of group members enhances creativity, it may on the other hand silent individual voices of disagreement (Niederkrotenthaler et al., 2011). Additionally, this is not an option because I do not want participants to feel intimidated by the presence of others during the interview because it is a military setting that would prevent them from expressing themselves as they should. Also, due to the covid pandemic, I am trying as much as possible to prevent participants from getting infected due to interaction with others at the discussion. The ethnography approach would have also been a good data collection method because it allows the people to be studied in their natural environment and their activities captured by the researcher who participates directly in the setting to collect data systematically without any external influence (Hammersley, 2018). One advantage of the ethnographic approach is that it is effective in providing a detailed description of the phenomenon and ensuring accuracy as the researcher records vividly the entire exposure (Hammersley, 2018). However, it is weak if we want to generalise to larger populations (Hammersley, 2018). This was not an option either because of the fear that the presence of the researcher among the participants might hinder getting the right reaction from them and they may act differently to suit the situation.

Many qualitative studies collect data by conducting interviews with participants as it is the most direct and straightforward approach to gathering detailed and rich data regarding a particular phenomenon (Barrett & Twycross, 2018). Qualitative interviewing is often less structured (unstructured or semi-structured) allowing the researcher to freely explore participants' perspectives without narrowing their responses (Bryman, 2016). However, due to the covid-19 pandemic, prevention protocols would be employed during the interview which includes wearing of face mask and maintaining a social distance of two metres apart.

Access to the participants: After receiving approval from the Institutional Review Board (IRB) of 37 Military Hospital to conduct this research, upper-level stakeholders (the Commanding officer (CO), the Chief Nursing Officer (CNO), the Nursing officer in charge of the surgical unit (NOIC) and ward in-charges of the intended quality improvement project will facilitate access to participants. Information about the project and its commencement would be communicated by the CO to all surgical unit nurses via their institutional emails. A

complimentary email would then be sent through the NOIC inviting the surgical nurses to participate in the research and during routine morning ward meetings, the information would be reinforced by the ward in-charges to serve as a constant reminder to all staff.

AR has generally been considered effective in knowledge sharing, promoting change and problem-solving in participatory research processes (Cordeiro & Soares, 2018). Additionally, the AR process must be adapted to the context in which the research takes place (Cordeiro & Soares, 2018).

To establish a successful AR, the researcher must plan, act, observe and reflect 'more precisely, systematically and thoroughly than one normally does in everyday life; and [to] use the relationships between these stages as a source of improvement and knowledge (Barns, 2015). It also helps the researcher's demonstration of practical application for improvement, as well as critical evaluation on the intervention measures' ability to bring about the desired changes (Barns, 2015).

An action research approach would be selected as a way of merging research and action to inform possible change in practice to improve health service delivery and for clinical care quality (Poland et al., 2017). The four-step AR framework of planning, acting, observing and reflecting would be used to evaluate existing practice, implement and re-evaluate change we desire (Poland et al., 2017). Unlike conventional social science, AR does not only aim to understand social arrangements but to improve knowledge and empower individuals to effect the desired change (Bradbury-Huang, 2010).

STAGES OF ACTION RESEARCH

Planning: This is the first stage where it is decided what to study. This is when the actual specific problem is identified and planning activities are done prior to the implementation of the project (Barns, 2015). It has been observed that POP assessment and management in the surgical wards of the 37 military hospital are inadequate as most patients express dissatisfaction in pain management. This research aims to assess the impact of a PEP on surgical nurses' knowledge and attitude towards pain assessment and management. Therefore, interviews would be employed to gain an in-depth understanding of how knowledgeable nurses are in pain-related issues two weeks prior to the implementation of the program. Afterwards, a thorough literature search would be conducted to gain in-depth knowledge on what other studies found on nurses knowledge in pain assessment and

management and the impact of a PEP on the knowledge and attitude of these nurses. The final part of this stage is to devise a plan on how to improve nurses knowledge and attitude in POP assessment and management through education.

Acting: This is the second stage where the intervention is implemented (Barns, 2015). At this stage, the PEP would be implemented two weeks after the planning phase. A one-week intensive in-service workshop for all nurses in the surgical unit in batches in collaboration with experts (physicians and anaesthetists) would be organized on averagely 4-6hours in a day. The program would cover all aspects of pain including basic pain knowledge and the current trends in pain management, pain assessment, pharmacological pain management and non-pharmacological pain interventions. Also, the CAPA tool, unlike other pain assessment tools assesses the effect of pain on functionality and sleep (Gordon, 2015) would be introduced.

Observing: This is the stage of learning about practice and collecting data (Poland et al., 2017). The participants would be observed deliberately, consciously and unjudgementally without any manipulation (Barns, 2015). After the implementation of the program, the nurses would be encouraged to inculcate it into practice. A week after, interviews would be conducted to assess the impact of the PEP on the knowledge and attitude of the nurses during which all covid-19 protocols would be employed to limit the disease spread. All interviews would be conducted in the English language, with a semistructured interview guide developed by the researcher with the help of her supervisor to ensure that the focus is maintained, with each session lasting approximately 20 minutes. Also, to avoid missing important points, it is recommended that the interview sessions are recorded and translated afterwards to derive the best results (Bryman, 2016). All of the interviews would be recorded on a handheld digital voice recorder with written notes as a backup. The information would be secured on a drive. All general data protection regulation (GDRP) guidelines would be adhered to storing and deleting participant data after use. Before implementing the main data collection process, the researcher would conduct a pilot interview with five participants to ensure the validity of the interview guide.

Reflection: This is the final phase of the process where there is critical evaluation and analysis of the intervention (Poland et al., 2017). Based on the results post-implementation, it would be assessed to ascertain if there has been an improvement in practice. It would also

help to identify the strength and deficiencies in the PEP to help make amendments to make the program content-rich and valuable. Also, the participants get the chance to reflect on themselves to examine the impact of the PEP on their professional conduct as well as suggest what they think in their perspective can be done to improve their practice. This is to ensure participants and the researcher move parallel together.

3.5.3 DATA ANALYSIS

The process of data analysis in qualitative research is not a simple idea of choosing and applying an accepted process (Grbich, 2012). Despite the diversity of qualitative methods, data is often obtained through participant interviews (Smith & Firth, 2011). The data is analysed based on a common set of principles: transcribing the interviews; immersing oneself within the data to gain detailed insights into the issue under study; developing a data coding system; and linking codes or units of data to form broader categories/ themes which may lead to the development of theory (Smith & Firth, 2011).

In a qualitative study, finding analytic paths is difficult due to the rich, dense and captivating nature of the collected data (Bryman, 2016). As a result, during analysis, researchers need to focus only on the relevant data (Guest et al., 2014). The frequently used strategies for analyzing qualitative data are analytic induction, grounded theory, thematic analysis, and narrative analysis (Bernard et al., 2016). For this study, a thematic analysis will be used. Thematic analysis gives data analysis a more structured approach providing the possibility to link the various concepts and opinions of the learners and compare these with the data that has been gathered in different situations at different times during the project (Alhojailan, 2012). Qualitative research requires understanding and collecting diverse aspects and data and the use of thematic analysis would give a better understanding of any issue more widely and in the end increase the research's accuracy and intricacy, as well as its overall meaning (Alhojailan, 2012).

Thematic analysis is often useful when the study aims to understand the current practices of any individual and this approach is effective in analysing the different phases of data collection, e.g. pre-/post-data (Alhojailan, 2012). According to (Nowell et al., 2017), the basis for qualitative analysis should be thematic analysis, as it provides core skills for conducting many other forms of qualitative analysis.

A qualitative proposal method according to Creswell (2014) must clearly indicate the qualitative data analysis steps. Therefore, to ensure the research findings are worthy of attention, the six-step approach for conducting a trustworthy thematic analysis suggested by

Braun & Clarke (2006) and Nowell et al. (2017) would be employed in this research.

Step 1: Familiarization with data

This is the first step in thematic analysis. The researcher would read through the transcripts after each interview, using the findings of related materials as a foundation to identify themes in the gathered data from participants relevant to the research objective (Kiger & Varpio, 2020). Also, the researcher would repeatedly and actively read through the data to get familiarized with the entire data set which would provide a useful orientation to the raw data and serve as the foundation for all subsequent steps (Kiger & Varpio, 2020). All audio files would also be transcribed verbatim. Ideas and identification of possible patterns may be shaped as the researcher become familiar with all aspects of their data if the entire data set is read through at least once before beginning coding (Kiger & Varpio, 2020). Regardless of the method of data collection, all records of the raw data would be archived to provide an audit trail and a baseline against which subsequent data analysis and interpretations can be tested for adequacy (Nowell et al., 2017).

Step 2: Generating codes

The second phase begins once the researcher has read and is familiarized with the data (Nowell et al., 2017). The researcher would begin to take notes on potential data items of interest, questions, connections between data items and other initial ideas which is the beginning of the coding process (Kiger & Varpio, 2020). Rossmann & Rallis (2012) defined coding as a process of cataloguing data into segments and expressing it in writing in the margins. Codes would be generated from the data by giving full and equal attention to each data item to help simplify and focus on specific characteristics of the data (Nowell et al., 2017). The codes would be well-defined and demarcated so it does not overlap with other codes and fits logically within the larger coding framework or coding template (Kiger & Varpio, 2020).

The researcher would use the NVIVO 12 PRO software to analyse the data following the collection of initial data from the first interview. NVIVO 12 PRO is a computer-assisted qualitative data analysis software that helps a researcher organize and analyse a wide variety of data, including but not limited to documents, audio, videos, images, questionnaires and web/social media content (Edhlund & McDougall, 2019). Although some authors consider NVIVO software not suitable for some forms of qualitative data, most researchers disagree because it makes data coding and retrieval faster and more efficient and in turn makes

qualitative data analysis more transparent (Bryman, 2016). The use of the software will provide a learning opportunity for novice researchers to acquire such useful skills for future research.

Step 3: Searching for themes:

The third step involves the examination of the coded and collated data extracts to look for potential themes of broader significance (Kiger & Varpio, 2020). Themes are identified by combining components or fragments of ideas or experiences, which are often meaningless when viewed alone (Nowell et al., 2017). The researcher would display the theme connections in writing as well as tables and diagrams, to describe in detail the analysis process and ensure the result is established in the generated data.

Step 4: Reviewing themes

At this stage, the researcher examines the coded data extracts for each theme to see if they form a coherent pattern (Nowell et al., 2017). The researcher would carry out clear discussions of relating themes with additional features such as tables and figures. At this stage, the inadequacies in the initial coding and themes would be identified and the necessary changes made (Nowell et al., 2017). For example, a new code would be inserted if a relevant issue in the text that is not covered by an existing code is identified and if there is no need to use a code or if it substantially overlaps with other codes, it may be deleted (Nowell et al., 2017). Also, some themes may be merged whilst other themes may need to be separated into different themes specific and broad enough to capture the desired text (Nowell et al., 2017).

Step 5: Defining and Naming themes

At this stage, the definition and narrative description of each theme, including why it is significant to the study would be derived (Kiger & Varpio, 2020). The names of the themes that would be included in the final report would be evaluated to see if they are concise and detailed enough (Kiger & Varpio, 2020).

Step 6: Producing the report

This final step involves writing up the final analysis and description of findings (Kiger & Varpio, 2020) once the themes have been fully established (Nowell et al., 2017). It will entail a fusion of the researcher's perspectives and interpretations and the inquirers, as well as current literature results (Nowell et al., 2017). The researcher would synthesize data by

assessing the impact of PEP on the knowledge and attitude of surgical unit nurses.

3.6 STUDY SETTING

A research setting as described by Creswell and Creswell (2017) is the place, institution, or organization where the study's data are gathered. The 37 military hospital surgical unit would be the setting for this research.

The 37 military hospital

The 37 Military Hospital is a specialist hospital located in the Ayawaso East Metropolis in the Greater Accra Region of Ghana and situated on the main road linking the Kotoka International Airport to central Accra. It was commissioned on the 4th of July 1941 and named 37 because it was the 37th military hospital to be built by the British colony in West Africa. It is the second-largest teaching hospital in Accra after Korlebu teaching hospital and third in the country. It is a 500-bed capacity hospital serving both military personnel (both serving and retired), their families and the civilian population. It is also a United Nations level 4 facility and the national
disaster and emergency response health facility.

The hospital has four surgical units which serve a broad range of patient categories who have undergone general, orthopaedic, genitourinary, neurological, maxillofacial, plastics and reconstructive surgeries. The surgical unit staff includes attending physicians who oversee patient management, house officers who partake in inpatient management and registered nurses responsible for patient care and interventions around the clock. The total number of nurses in the four surgical units is approximately forty-five.

3.7 SAMPLING AND RECRUITMENT

With the focus of the research to assess the impact of an implemented PEP on the knowledge and attitude of nurses in pain assessment and management, purposive sampling would be used to ensure only relevant participants are included in the study. According to (Cresswell & Plano, 2011), using purposive sampling implies identifying and selecting individuals who are particularly knowledgeable or experienced about a subject of interest. The research participants would be all surgical nurses of the 37 Military Hospital who work in the department.

Inclusion

1) Nurses: Nurses of all ranks working in the surgical unit.

Exclusion

1) Surgical unit nurses who will not consent to the project or decline the invitation to participate in the project.

The 37 military hospital is a teaching hospital and one of the largest tertiary hospitals in Ghana that provides quality health care to its clients. Using the facility and its staff for this study will set the pace for replicating the project in other facilities across the country. The inclusion of all staff members will ensure a multi-perspectivity of the collected data.

3.7.1 SAMPLING

Two types of sampling would be done, contextual and participant sampling. Contextually, the 37 Military Hospital has been chosen for this project because it is the intended setting for the quality improvement project and a facility the researcher is familiar with. Purposive sampling techniques would be employed to select the research participants. All 37 military hospital surgical unit nurses who meet the inclusion criteria will be recruited for the study using the staff register as a sampling frame.

3.7.2 SAMPLE SIZE

In a qualitative study, a generally stated principle for determining sample size is that the number (N) should be large and varied enough to explain the aims of the study (Patton, 2015). According to Bryman (2016), it is preferable to collect data until data saturation is achieved because it is difficult to determine the exact number of participants to be interviewed in qualitative research at the outset. Saturation is achieved when the researcher's data collection reaches the point where no new information emerges (Marshall et al., 2013). For qualitative research methods, a sample size of 12 to 20 participants has been suggested as sufficient and enables data saturation to be met (Parry et al., 2017). However, a minimum number of twenty to thirty interviews is required if a researcher has intentions to publish a qualitative study (Bryman., 2016).

The surgical unit has approximately 45 registered nurses who render care to surgical patients hence the researcher would target the entire surgical unit nurses as prospective participants to accurately represent the population under study. The aim of increasing the sample size is to provide the best possible representation of the population, even in the event of the withdrawal

of some participants from the study. However, interviews would be conducted until data saturation is achieved to define the study's sample size.

3.7.3 SAMPLING TECHNIQUE

Sampling technique is the method used in selecting part of a population for study (Bryman, 2016). In general, sampling techniques are divided into probability (random) and non-probability sampling (non-random) sampling (Taherdoost, 2016).

Probability or random sampling means every individual in the population has an equal chance of selection for the sample (Taherdoost, 2016). Probability sampling has the greatest freedom from bias (Taherdoost, 2016). Examples of probability sampling include simple random sampling, systematic sampling, stratified sampling and cluster sampling (Cresswell, 2014).

Contrarily, non-probability or non-random sampling does not give all the participants in the population equal chances of being included (Etikan et al., 2016). Methods of selecting samples using non-probability sampling techniques include purpose sampling, convenience sampling, quota sampling and snowballing (Taherdoost, 2016). The most common reason for using nonprobability sampling is that it is cheaper and can often be implemented more quickly than probability sampling (Etikan et al., 2016).

Using the surgical unit register as a sampling frame and all surgical unit nurses as participant samples, purposive sampling technique would be employed to select the research participants. The purposive sampling technique is a non-probability sampling technique that aims to identify and select individuals who are well informed on the subject of interest and can communicate their experiences and opinions in a clear, expressive and reflective manner (Etikan et al., 2016).

3.7.4 RECRUITMENT

Peek & Fothergill (2009) described key informant recruitment as a participant recruitment process enabled by the active participation of key stakeholders in gaining access to participants. Since the study will be conducted in an authoritarian institution, the researcher would use key stakeholders' influence to gain access to the targeted participants. Letters will be sent to the participants via their institutional emails notifying and inviting them to participate in the research. Staff who do not have access to the electronic letter would receive hard copies from the researcher. Also, posters and flyers would be made and pasted on the surgical wards to serve as a constant reminder to help inform the nurses of the study. At ward meetings, ward in-charges would also reinform the participants of the study. Participants who

agree to participate in the study will be contacted to conveniently schedule appointments for the interviews.

3.8 CONSENT

Surgical unit nurses who wish to participate in the study will be contacted and briefed on the purpose and procedure of the study. Invitation letters will be sent to participants via institutional email and hard copies given to staff who are not technologically literate. Informed consent forms will be attached to the invitation letters which will allow participants to indicate whether or not they want to participate in the study. They will be reassured of absolute confidentiality and reminded of their right to withdraw from this project at any time they wish to. Also, participants would be assured of the confidentiality of data collected and at no point will their names be revealed. Participants' contributions will be coded in written documentation to maintain anonymity and they will be assured the data will be used solely for the intended study.

3.9 ASSESSMENT AND MANAGEMENT OF RISK

Organizing interviews can be a difficult task. Some setbacks for the participants are that participants would have to spare some time off their busy work schedule for the interview. Also, since the study setting is a military institution, participants may feel compelled to participate in the study. However, the participants would be assured that participation is voluntary and their participation or non-participation in the study will not affect their promotion, professional development or other benefits due to them. Participants may also feel intimidated by the consequences of freely sharing their opinion or contribution, but they would be assured that at no point will their names or true identity be disclosed in any part of the write-up hence confidentiality would be maintained.

For the researcher, fatigue is a possible risk. However, the study would be conducted in the researchers' work setting which she is familiar with. Hence, with the support of the surgical unit NOIC and her supervisor's support to carefully plan out the study, this risk will alleviate.

3.10 RESEARCH ETHICS COMMITTEE (REC) AND OTHER REGULATORY REVIEW & REPORTS

Ethics are a crucial part of every study. The main purpose of research ethics is to protect participants rights and ensure they are not exposed to undue harm and also to ensure that methodological approaches are appropriate to the study aims (McKenna & Gray, 2018).

According to (Bryman, 2016), when conducting research, all researchers should adhere to a professional code of ethics and regulations. Although the process of obtaining ethical approval can be complex and time-consuming (McKenna & Gray, 2018), Creswell and Creswell (2017) suggests researchers have a responsibility to protect their study participants, earn their trust, promote research integrity and avoid any malpractice and nonconformity that could affect their institutions. Hence, ethical standards will be adhered to in accordance with the ethical principles that govern the use of human subjects in research.

In Ghana, the Ghana Health Service Ethical Review Committee (GHSERC) is the institution in charge of ethical clearance when conducting research in healthcare facilities registered under the ministry of health. However, the 37 Military Hospital is under the ministry of defence (MOD) Ghana and has an institutional review board (IRB) in charge of granting ethical approval for researches carried out in the facility.

Before commencing the study, the researcher will submit together with a letter seeking permission to conduct the research a copy of the research proposal to the hospital's commanding officer and IRB for it to be reviewed to ensure it is free of any ethical violations. The researcher will obtain an ethics application form from the hospital's IRB, complete and submit it for review and approval to commence the study. The researcher will maintain contact with the IRB and be available for further clarification, as well as submitting other relevant documents upon request.

3.10.1 AMENDMENT

The project will be conducted as proposed. Any changes to protocol or consent that might affect the study design, participant safety or participants' willingness are considered an amendment and would be documented.

3.10.2 PATIENT & PUBLIC INVOLVEMENT

There will be no patient or public involvement in this research.

3.10.3 ACCESS TO THE FINAL STUDY DATABASE

The database will only be accessible to members of the research team. Within six months after all information has been transferred to an electronic record, paper records will be discarded as confidential waste. The audio recordings will be securely transferred and stored after which the recording on the encrypted device will be destroyed. MS Word and NVIVO software will be used to save the electronic transcription in text format. To maintain

participant confidentiality, the transcripts and quotes that will be used in publications will be anonymized using codes given to them during the data collection.

3.10.4 DISSEMINATION

The research findings will be published in academic journals and made available to hospital personnel and study participants via hospital newsletters.

CHAPTER FOUR

4.0 CRITICAL REVIEW OF PROPOSAL

This chapter will critically reflect on the whole research proposal submitted for the master thesis. For a reflective account, I will employ Schön's (1983/1991) reflective model. Reflection according to Legare & Armstrong (2017), is a means of increasing comprehension and critical thinking and developing self-awareness and problem-solving abilities. It is therefore essential for practitioners to choose a model (or models) that best reflect(s) their own needs and skills to become skilled at reflection (Hébert, 2015). Unlike other models, Schön's reflective theory is not a multi-stage or circular model of reflection. Instead, Schon's distinction between reflection during the event and after the event (Schon, 1983/1991) is the key feature. It is a three-stage process comprising; Knowing in action, Reflection in action, and Reflection on action.

Knowing in action

Studies by (Zhang et al., 2008; Abdalrahim et al., 2011; Al Qadire & Al Khalaileh, 2014; Onianwa et al., 2017; Germossa et al., 2018; Salim et al., 2019) showed that nurses had inadequate knowledge and poor attitude towards pain management. According to Schon (1991), it is useful for practitioners to consider what they "know in action" to improve their confidence recognize their strengths and understand that the skills they will acquire in the future will most likely come from actions and experience. Also, Kinsella (2010) concluded that it helps draw the practitioners' attention towards knowledge and skills they "take for granted" as these skills or ways of doing things may be challenged later on by reflection. Based on my observation on the ineffective assessment and management of pain on the surgical unit, my interest in this subject upon reflection and my supervisor's guidance helped me develop this proposal based on the variety of existing literature on education believed to increase nurses' knowledge and improve attitudes towards pain assessment and management (Keyte & Richardson, 2011).

Reflection in action

After the implementation of PEP by (Zhang et al., 2008; Abdalrahim et al., 2011; Al Qadire & Al Khalaileh, 2014; Onianwa et al., 2017; Germossa et al., 2018; Salim et al., 2019), the knowledge and attitude of the nurses were observed to have improved. Tomaszek & Dębska (2018) concluded that participation in various training programmes was a significant determinant of nurses' knowledge. Also, Abdal Rahim et al. (2011) is of the view that

continuous education involvement was a significant determinant of pain management quality. Therefore, upon reflection, my focus for this proposal will be to assess the impact of PEP on the knowledge and attitude of surgical unit nurses in the assessment and management of pain.

Reflection on action

At this stage, it is possible to see how, over time, this reflective process could reshape the practitioner's "knowing in action" statement after successfully implementing the educational package. After assessing the impact of the PEP on the knowledge and attitude of the nurses in the surgical unit, feedback from the nurses would help identify the gaps that need amendment.

As illustrated by Swanwick (2013), healthcare professional education's ultimate goal is to provide society with a cadre of competent, trained and up-to-date professionals who prioritise patient care over self-interest and commit to maintaining and developing their expertise throughout a lifetime career. In this regard, I became aware that surgical nurses in 37 military hospital had limited education in the assessment and management of POP resulting in some patients not receiving adequate analgesia. For this reason, I decided to develop a research proposal examining the impact of a targeted education programme on nurses' knowledge and practice around POP management. I found the process of writing this proposal to be a good learning platform and an eye-opener in the world of research and evidence-based practice.

DESCRIPTION

As part of the Erasmus Mundus Masters program, each student is required to complete a dissertation as part of his/her academic journey. The student's interest plays a significant role in the topic he/she chooses to explore. Being a novice, I decided to use the opportunity to actively engage in the dissertation Moodle as an adult learner to gain knowledge in conducting research.

FEELING

Initially, I was very anxious about the whole dissertation idea because of my weak research methodology background and I found it quite challenging to understand the entire concept of producing evidence-based research. During the process, I often felt overwhelmed, particularly when I was unsure of what to focus on at each stage. However, my engagement with the dissertation module and the guidance of my supervisor motivated me to explore the evidence I would need. Also, my skills in literature search have improved and I have gained

good academic writing skills and better insight into the topic through the constructive criticisms of my supervisor.

EVALUATION AND ANALYSIS

To make learning meaningful, Macdougall et al. (2017) suggest self-directed adult learners must be able to influence their own learning needs. The research proposal I have developed is a qualitative study to assess the impact of an implemented PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management. The choice of methodology for the research is mostly influenced by certain factors, including the researchers' views on the nature of social work (ontology), the nature of knowledge and how it can be obtained (epistemology), the purpose(s) and aims of the research, the study participants' characteristics, the research audience, the funders, and the researchers' position and environment (Ormston et al., 2014). This research is an action research and with the guidance of my supervisor, I chose to use a qualitative approach.

Qualitative research helps construct (shared) meaning and comprehension through the active participation of participants (Kim, 2014) with emphasis on words instead of quantification in the data collection and analysis. In so doing, the researchers gain in-depth knowledge of the phenomena (Bryman., 2016). Qualitative research is flexible rather than fixed, inductive rather deductive, and not based on a predetermined outcome (Maxwell, 2012). Since the researcher aims to evaluate the impact of PEP on the knowledge and attitude of surgical nurses in POP assessment and management and the fact that not much qualitative research has been done on the topic, a qualitative study was deemed the most appropriate approach. The interpretivist-constructivist approach, which is the theoretical basis for most qualitative research, considers that the nature of inquiry is interpretive with the aim to understand a particular phenomenon and not to generalize to a population (Tuli, 2010). which is the reason I want to assess the impact of an implemented PEP on the knowledge and attitude of surgical nurses in POP assessment and management.

Purposive sampling would be used to select participants as it allows the researcher to include only individuals who are particularly knowledgeable or experienced about the subject of interest (Cresswell & Plano, 2011). A qualitative interview was chosen for data collection instead of the use of focus group discussion (FGD) or an ethnographic approach because it is often less structured (unstructured or semi-structured) allowing the researcher to freely explore participants' perspectives without narrowing their responses (Bryman, 2016). The FGD was not an option because of situations with the Covid-19 pandemic and government

restrictions. Also, since the study setting is an authoritarian institution, the tendency for hierarchical inhibition might make participants unable to freely express their views and opinions, or maybe hesitant to participate in the researcher's research topic (Harrison et al., 2015). The ethnographic approach was not an option either because of the researchers' fear that the participants may not be their real selves when they realise the researcher is in their midst as they practice which may alter the real reaction we expect from them (Sangasubana, 2011). Interviews, however, eliminate this barrier giving participants absolute freedom and flexibility to express their opinions and be themselves.

The limitations of my proposal are that of replicability and generalizability of research findings. Qualitative studies are challenging to replicate mainly because it is unstructured and often rely on the researcher's ingenuity (Bryman, 2016). Because the scope of the research findings will be restricted to the surgical units of the 37 military hospital, it would be difficult to generalize the findings to other surgical units across the country. The success of this project will however set the pace for its extension to other departments in the hospital and subsequently other hospitals across the country.

CONCLUSION

In conclusion, my encounter with the dissertation Moodle has enriched my knowledge in research. I feel confident in the research proposal drafted, and I am optimistic that with all the knowledge acquired I can undertake this project and help improve the knowledge and attitude of surgical nurses in pain assessment and management in Ghana.

ACTION PLAN

- Obtain ethical clearance to commence the research.
- Conduct the research.
- Disseminate research findings.

CHAPTER FIVE

5.0 CONCLUSION

In conclusion, this proposal aims to assess the impact of an implemented PEP on the knowledge and attitude of surgical unit nurses in the assessment and management of POP in a tertiary hospital in Ghana. It consists of five chapters.

Chapter one is the introduction and background where the researcher wrote a brief overview of the subject and the reasons and justifications for the chosen topic by outlining the aims of the project, literature on the issue POP assessment and management and structure for the project.

Chapter two is a literature review to assess the impact of an implemented PEP on the knowledge and attitude of nurses in pain assessment and management. All results from the included studies showed nurses had inadequate knowledge and poor attitude towards pain assessment and management. All results from the studies included also showed an improvement in the knowledge and attitude of nurses in pain assessment and management after engaging in the PEP.

Chapter three highlights the project as an action research and elaborates on the methodology for qualitative interpretive research. The use of a non-probability purposive sampling technique to recruit participants and seeking ethical approval is also highlighted in this chapter. The study will involve face-to-face interviews with surgical unit nurses with a semi-structured interview guide developed by the researcher to gather data with the aim to seek diverse views and in-depth meaning on the issue under investigation. Research findings will be published in academic journals and made available to hospital personnel and study participants via hospital newsletters.

The AR approach is adopted because it allows practitioners to develop practice by introducing change in response to a need or problem and enhances professional development through learning opportunities.

Chapter four is a reflective review of the developed proposal employing Schön's (1983/1991) reflective model highlighting the three stages the researcher has to go through to reflect on the implemented project. The researcher also highlighted the strengths and weaknesses of the research proposal acknowledging generalizability and replicability as the main weakness of the study.

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APPENDICES

Appendix A. CRITICAL APPRAISAL OF QUASI-EXPERIMENTAL STUDIES USING JBI CHECKLIST

Author and year	Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	Were the participants included in any comparisons similar?	Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	Was there a control group?	Were there multiple measurements of the outcome both pre and post the intervention / exposure?	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	Were the outcomes of participants included in any comparisons measured in the same way?	Were outcomes measured in a reliable way?	Was appropriate statistical analysis used?	Overall appraisal comment
Zhang et al. (2008)	yes	no	no	yes	yes	Yes	yes	yes	yes	include
Al Qadire & Al Khalaileh (2014)	Yes	no	no	no	yes	Yes	yes	yes	yes	include
Germossa et al. (2018)	Yes	no	no	no	yes	yes	yes	yes	yes	include

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Appendix B. CRITICAL APPRAISAL OF RANDOMIZED CONTROL TRIAL (RCT) & COHORT STUDY USING EPHPP CHECKLIST

Criteria	Questions				Abdalrahim et al., 2011 (Cohort study)	Onianwa et al., 2017 (Cohort study)	Salim et al., 2019 (Randomized controlled trial)
A) SELECTION BIAS	**Q1. Are the individuals selected to participate in the study likely to be representative of the target population?** 1 Very likely 2 Somewhat likely 3 Not likely 4 Can't tell				Very likely	Very likely	Very likely
	Q2. What percentage of selected individuals agreed to participate? 1 80 - 100% agreement 2 60 – 79% agreement 3 less than 60% agreement 4 Not applicable 5 Can't tell				80 - 100% agreement	80 - 100% agreement	80 - 100% agreement
	Rate	Strong	Moderate	Weak	**Strong**	**Strong**	**Strong**
B) STUDY DESIGN **Indicate the study design** 1 Randomized controlled trial 2 Controlled clinical trial 3 Cohort analytic (two group pre + post) 4 Case-control 5 Cohort (one group pre + post (before and after) 6 Interrupted time series 7 Other specify _____ 8 Can't tell	**Q1. Was the study described as randomized? If NO, go to Component C**. No Yes				No	Yes	Yes
	Q2. If Yes, was the method of randomization described? No Yes				Nil	Yes	Yes
	Q3. If Yes, was the method appropriate? No Yes				Nil	Yes	Yes
	Rate	Strong	Moderate	Weak	**Moderate**	**Strong**	**Strong**
C) CONFOUNDERS **The following are examples of confounders:** 1 Race	**Q1. Were there important differences between groups prior to the intervention?** 1 Yes 2 No 3 Can't tell				No	No	No

	Q2. If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)? 1 80 – 100% (most) 2 60 – 79% (some) 3 Less than 60% (few or none) 4 Can't Tell				80 – 100% (most)	80 – 100% (most)	80 – 100% (most)
	Rate	Strong	Moderate	Weak	**Strong**	**Strong**	**Strong**
D) BLINDING	**Q1. Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?** 1 Yes 2 No 3 Can't tell				No	No	No
	Q2. Were the study participants aware of the research question? 1 Yes 2 No 3 Can't tell				No	No	No
	Rate	Strong	Moderate	Weak	**Strong**	**Strong**	**Strong**
E) DATA COLLECTION METHODS	**Q1. Were data collection tools shown to be valid?** 1 Yes 2 No 3 Can't tell				Yes	Yes	Yes
	Q2. Were data collection tools shown to be reliable? 1 Yes 2 No 3 Can't tell				Yes	Yes	Yes
	Rate	Strong	Moderate	Weak	**Strong**	**Strong**	**Strong**
F) WITHDRAWALS AND DROP-OUTS	**Q1. Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?** 1 Yes 2 No 3 Can't tell 4 Not Applicable (i.e. one time surveys or interviews)				No	No	No

	Q2. Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest). 1 80 -100% 2 60 - 79% 3 less than 60% 4 Can't tell 5 Not Applicable (i.e. Retrospective case-control)				80 -100%	80 -100%	80 -100%
	Rate	Strong	Moderate	Weak	**Strong**	**Strong**	**Strong**
G) INTERVENTION INTEGRITY	**Q1. What percentage of participants received the allocated intervention or exposure of interest?** 1 80 -100% 2 60 - 79% 3 less than 60% 4 Can't tell				80 -100%	80 -100%	80 -100%
	Q2. Was the consistency of the intervention measured? 1 Yes 2 No 3 Can't tell				Can't tell	Can't tell	Can't tell
	Q3. Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results? 4 Yes 5 No 6 Can't tell				No	No	No
H) ANALYSES	**Q1. Indicate the unit of allocation (circle one)** community organization/institution practice/office individual				organization/ institution	organization/ institution	organization/ institution

	Q2. Indicate the unit of analysis (circle one) community organization/institution practice/office individual	individual	individual	individual
	Q3. Are the statistical methods appropriate for the study design? 1 Yes 2 No 3 Can't tell	Yes	Yes	Yes
	Q4. Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received? 1 Yes 2 No 3 Can't tell	Yes	Yes	Yes

Appendix C: CLINICALLY ALIGNED PAIN ASSESSMENT (CAPA) TOOL

Patient Name: DOA: Bed Number:

Age: Diagnosis: Ward:

Sex: Type of surgery:

DATE						
TIME						
Questions	**Response**					
Comfort	• Intolerable • Tolerable with discomfort • Comfortably manageable • Negligible pain					
Change in Pain	• Getting worse • About the Same • Getting better					
Pain Control	• Inadequate pain control • Partially effective (Effective, just about right) • Fully effective (Would like to reduce medication [why?])					
Functioning	• Can't do anything because of pain • Pain keeps me from doing most of what I need to do • Can do most things, but pain gets in the way of some • Can do everything I need to					
Sleep	• Awake with pain most of night • Awake with occasional pain • Normal sleep					

Appendix D. INTERVIEW GUIDE

Ten semi-structured questions to be used as interview guiding questions for nurses.

1. How will you describe postoperative pain (POP) assessment in your surgical unit?

2. How confident do you feel assessing pain? Tell me more about it.

3. Do you use any pain assessment tool in assessing patients pain in the surgical unit?

4. Do you consider using a pain assessment tool as an essential aspect of clinical practice, and why?

5. Research has shown that pain assessment tools help nurses and patients communicate pain-related issues effectively. What is your take on using pain assessment tools in your surgical unit?

6. Tell me about your pain management practice?

7. Do you think they are effective in any way?

8. Is effective POP assessment and management of your clients a priority in your surgical unit? Why do you think or say so, and do you feel the need to improve POP assessment and management in your surgical unit?

9. What do you think can be done in your surgical unit to ensure effective POP management?

10. Is there anything you want to talk about that you think we have not discussed yet or just anything you want to throw more light on?

Probing clauses: "Well, why is that?" or "Can you tell me more about why that is so?"

APPENDIX E: CONSENT TO PARTICIPATE IN STUDY

STUDY TITLE: IMPACT OF PAIN EDUCATION PROGRAM ON THE KNOWLEDGE AND ATTITUDE OF SURGICAL UNIT NURSES IN POSTOPERATIVE PAI ASSESSMENT AND MANAGEMENT

INTRODUCTION

I am an ERASMUS MUNDUS JOINT MASTER'S DEGREE IN EMERGENCY AND CRITICAL CARE NURSING student from Edinburgh Napier University, pursuing a study on the above topic and would like to invite you to participate in the study.

STUDY PROCEDURE

I will require you to partake in an interview to answer about 10 questions on the topic. The interview will take about 25 minutes of your time and will be recorded with your permission. Your answers would be made anonymous and be used solely for the research. However, study results would be disclosed to you upon request by yourself.

BENEFITS

Participating in this study will help improve nurses knowledge and attitude in POP assessment and management to improve clinical practice and enhance the quality care of postoperative patients in Ghana.

DISCOMFORT

No physical or psychological harm will result from participating in this study. However, inconveniences resulting from the time devoted to partaking in the interview would be experienced. Additionally, some personal questions might be asked, which might be inconvenient to you, but confidentiality would be ensured to reduce that discomfort.

CONFIDENTIALITY

Data collected from the interview will be treated as confidential. You will not be requested to provide your name or any detail that might indicate your identity. Instead, special coding will be used to identified test results. All audio recordings will be destroyed after data transcription. The completed forms and study results will be kept locked and will only be available to the research team. No third party shall have access to your information. In addition, your name shall not be mentioned in any part of the report and subsequent publication that might result from this study.

VOLUNTARY PARTICIPATION

Your participation in this study is completely voluntary. There is no penalty for not participating. You may also refuse any of the questions we ask you.

RIGHT TO WITHDRAW FROM THE STUDY

You have the right to withdraw from the study at any time without any consequences.

Please reply to this email to inform us of your decision to either partake or decline in this study.

Accept	Decline
☐	☐

1st Meeting

DATE OF MEETING **Duration of meeting**	23 August 2021 1 hour (face to face) 1100hrs-1200hrs
Points for discussion Research topic	**Action points** • Deciding on the research topic: Assessing the impact of a pain education program (PEP) on the knowledge and attitude of surgical unit nurses in the assessment and management of postoperative pain (POP) at the 37 military hospital. • Conducting a research proposal due to limited time to achieve ethical clearance. • Searching through databases for related articles.
Agreed timeframe	25 days
Date and time for NEXT MEETING	17 September 2021 (1000hrs-1100hrs)

2nd Meeting

DATE OF MEETING **Duration of meeting**	17 September 2021 1 hour (Teams Meeting) 1000hrs-1100hrs
Points for discussion 1. Review of submitted introduction 2. Identifying keywords 3. Defining the objective of the study 4. Formulating research questions 5. Literature review	**Action points** • Continue structuring of the introduction. • Keywords identified: impact, PEP, nurses, pain assessment, pain management. • Research objective defined: Assessing the impact of a PEP on the knowledge and attitude of surgical unit nurses in POP assessment and management.

	• Research questions formulated. • Conducting a scoping review to see the extent of what is already known about the topic. • Searching through databases and reading related articles.
Agreed timeframe	5 days
Date and time for NEXT MEETING	23 September 2021 (1100hrs-1200hrs)

3rd Meeting

DATE OF MEETING **Duration of meeting**	23 September 2021 1 hour (Teams Meeting) 1100hrs-1200hrs
Points for discussion 1. Literature review 2. PEO formulation 3. Critical appraisal of articles	**Action points** • Continuation of literature search through databases and reading related articles. • Drafting of literature review. • Using PEO to identify inclusion and exclusion criteria. • Establishing the quality of the identified articles.
Agreed timeframe	7 days
Date and time for NEXT MEETING	1 October 2021 (1300hrs-1400hrs)

4th Meeting

DATE OF MEETING **Duration of meeting**	1 October 2021 1 hour (Teams Meeting) 1200hrs-1400hrs
Points for discussion	**Action points**

1. Literature review 2. Research methodology 3. Evidence-based learning 4. Action research	• Continuation of literature search through databases and reading related articles. • Drafting of literature review. • Literature search and reading of evidence-based related articles. • Literature search and reading of action research related articles. • Drafting of methodology.
Agreed timeframe	7 days
Date and time for NEXT MEETING	8 October 2021 (1000hrs-1100hrs)

5th Meeting

DATE OF MEETING **Duration of meeting**	8 October 2021 1 hour (Teams Meeting) 1000hrs-1100hrs
Points for discussion Literature review Data extraction table Research methodology	**Action points** • Continuous work and drafting of literature review. • Drafting of data extraction table. • Continuous work and drafting of methodology. • Applying action research methodology.
Agreed timeframe	25 days
Date and time for NEXT MEETING	2 November 2021 (1400hrs-1500hrs)

6th Meeting

DATE OF MEETING **Duration of meeting**	2 November 2021 1 hour (Teams Meeting) 1400hrs-1500hrs
Points for discussion Literature review Data extraction table Quality appraisal of articles 4. Prisma flow diagram	**Action points** • Continuous work and drafting of literature review. • Continuous work and drafting of data extraction table. • Using JBI and EPHPP quality appraisal tools to critically appraise selected articles. • Drafting of Prisma flow diagram.
Agreed timeframe	20 days
Date and time for NEXT MEETING	22 November 2021 (0930hrs-1030hrs)

7th Meeting

DATE OF MEETING **Duration of meeting**	22 November 2021 1 hour (face to face) 0930hrs-1030hrs
Points for discussion 1. Research methodology 2. Qualitative research	**Action points** • Continuous work and drafting of research methodology. • Use qualitative research design linking to action research design. • Apply the plan, act, observe and reflection stages of action research for data collection.
Agreed timeframe	17days
Date and time for NEXT MEETING	9 December 2021 (0930hrs-1030hrs)

8th Meeting

DATE OF MEETING **Duration of meeting**	9 December 2021 1 hour (Teams Meeting) 0930hrs-1030hrs
Points for discussion 1. Research methodology 2. Critical review of proposal 3. Reflective model 4. Conclusion	**Action points** • Continuous work and drafting of research methodology. • Apply Schön's (1983/1991) reflective model to the proposal. • Drafting of conclusion
Agreed timeframe	35days
Date and time for NEXT MEETING	14 January 2022 (1000hrs-1100hrs)

9th Meeting

DATE OF MEETING **Duration of meeting**	14 January 2022 1 hour (Teams Meeting) 1000hrs-1100hrs
Points for discussion 1. Powerpoint presentation of proposal 2. Literature review 3. Research methodology	**Action points** • Prepare PowerPoint slides for mock presentation at Edinburgh Napier University. • Continuous work on literature review • Continuous work on research methodology.
Agreed timeframe	7 days
Date and time for NEXT MEETING	21 January 2022 (1000hrs-1100hrs)

10th Meeting

DATE OF MEETING **Duration of meeting**	21 January 2022 1 hour (Teams Meeting) 1000hrs-1100hrs
Points for discussion 1. Powerpoint presentation of proposal 2. Literature review 3. Research methodology	**Action points** • Work on Powerpoint slides. • Proofreading of literature review. • Proofreading of literature review.
Agreed timeframe	3 days
Date and time for NEXT MEETING	24 January 2022 (1300hrs-1500hrs)

11th Meeting

DATE OF MEETING **Duration of meeting**	24 January 2022 1 hour (Teams Meeting) 1300hrs-1500hrs
Points for discussion 1. Powerpoint presentation of proposal 2. Entire proposal	**Action points** • Corrections and proofreading of Powerpoint slides. • Corrections and Proofreading of the entire proposal.
Agreed timeframe	9 days
Date and time for NEXT MEETING	02 February 2022 (1400hrs-1500hrs)

12th Meeting

DATE OF MEETING **Duration of meeting**	02 February 2022 1 hour (Teams Meeting) 1400hrs-1500hrs
Points for discussion	**Action points** • Corrections and proofreading of

3. Powerpoint presentation of proposal 4. Entire proposal	Powerpoint slides. • Corrections and Proofreading of the entire proposal.
Agreed timeframe	
Date and time for NEXT MEETING	

References

This contains a list of the sources that you have used within the dissertation. It is important to ensure the referencing is presented in the required format (i.e., APA 6th style) both in the reference list and when sources are cited within the main body of the text. The most efficient way to reference your work is to use a reference manager e.g. Endnote or Mendelay. Courses to help you learn to use this software are run regularly in the library or you can find online tutorials here.

Remember, a reference list is not a bibliography. It only contains details of those sources you have actually used in the dissertation. A bibliography includes other sources you have studied but not specifically referred too.

- **Appendices**

The purpose of the appendices is to provide information which supports or adds value to the dissertation. You may want to include consent forms, participant information leaflets and data collection tools.

Section 2: Other notes and advice

Just a few final notes for you to consider:

1. *Presentation* - It is important to remember that presentation can account for 10% of your final mark. Therefore, attention needs to be paid to this aspect of your dissertation. For the sake of quality, make sure the dissertation is presented clearly. Start each chapter on a new page and clearly identify each subsection, preferably in numerical sequence. Use 1.5 or double line spacing consistently and finally, leave a space between each paragraph or, alternatively, indent the first line of each new paragraph.
2. *Spelling and grammar* - Checking your spelling and grammar in the completed dissertation are equally important parts of presentation and clarity for the dissertation. Consistent errors distract the reader and therefore will be penalised. Equally, lengthy sentences can make reading the dissertation more difficult.
3. *Writing style* - The dissertation is an academic study. Therefore, the use of slang terms or colloquialisms will be unacceptable. Similarly, avoid over elaborating any of the points you are trying to make. In other words, do not use ten sentences when the same information can be provided in one. Try to ensure the strength of the claim you make reflects the strength of the evidence you have to support it. So, for example, a sentence that starts “there is overwhelming evidence to suggest …” would be expected to be supported with reference to a high quality systematic review or multiple high quality studies.

And finally…

We hope that this dissertation template and guide is useful and helps you to prepare and present your dissertation and achieve the grade you desire. Please contact your supervisor if you require any further assistance.

- **Appendices**

The purpose of the appendices is to provide information which supports or adds value to the reporting of the research that has been conducted. As previously noted, this is likely to include your search terms and results from your literature search. You must also include a record of your supervision meeting with your supervisor.

(This form should be completed jointly by the research student and supervisor(s) at the conclusion of each meeting)

DATE OF MEETING **Duration of meeting**	
Points for discussion	**Action points.**
Agreed timeframes	
DATE and time OF NEXT MEETING	