An action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals

by

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DECLARATION

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I proclaim that this thesis, **AN ACTION PLAN TO ENHANCE TRANSFER OF LEARN-ING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN TEACHING HOSPITALS,** is my own work and that all sources used or cited have been recognized and acknowledged using a comprehensive list of references.

This thesis has also been subjected to reliable software testing to check its originality.

I further confirm that this has never been submitted at any institution of higher learning elsewhere before, including submission to Unisa for any degree purposes.

Signature:_____   **Date: 18/02/2024**

DEDICATION

I dedicate this work to:

Proverbs 1:7: The fear of the LORD is the beginning of knowledge. I would like to express my sincere gratitude to Almighty God, Allah, for carrying me and my supervisor through this process.

My wife (Pauline Kolobe) and our children, thank you for your patience in waiting and supporting the time I spent in this study process.

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AN ACTION PLAN TO ENHANCE THE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN TEACHING HOSPITALS

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ABSTRACT

Purpose: The purpose of this study was to develop an action plan that would facilitate the enhancement of the transfer of learning (TOL) of pain management competencies amongst nurses at teaching hospitals in Saudi Arabia.

Methods: The study employed a five-phase explanatory sequential mixed method design. The study commenced with quantitative data collection and analysis, followed by qualitative data collection and analysis. Nurses and clinical facilitators completed a self-administered questionnaire to assess pain assessment resources in Phase 1. Phase 2 collected data and analysed nurses' characteristics and learning styles with a self-administered questionnaire. Phase 3 described hospital teaching methods, the learning content, and the learning climate using clinical facilitator data from self-administered surveys with closed and open-ended questions. In Phase 4, Phases 1, 2, and 3 data and a literature review were used to develop an action plan to enhance nurses' pain management competencies. In Phase 5, a purposively selected panel of clinical facilitators and nurses validated the action plan to enhance the transfer of learning of pain management competencies of nurses within the context.

The Systemic Model of Transfer of Learning by Donavan and Darcy (2011) was the study's theoretical framework. This model suggests individual and organizational performance as the link between the transfer of learning and work environment

characteristics. The model is based on the idea that four factors influence the transfer of learning in the workplace: 1) trainee characteristics (the nurses), 2) training design (learning content), 3) training transfer climate, and 4) work environment.

The findings:

The action plan was validated and approved to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. The action plan encompassed the specified actions, which were to motivate nurses to further their studies, make appropriate and relevant pain management tools accessible to the nursing team in every clinical area, develop a practice-oriented content-specific short pain management training program, develop a pain management short program that accommodates all learning types, incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management, develop strategies to motivate nurses to participate in the short training program and motivate nurses to apply the knowledge gained in the training program into practice.

Conclusion:

The action plan was prepared by incorporating the insights of twelve e-Delphi panellists consisting of clinical facilitators and registered nurses. The presence of two teaching hospitals in Saudi Arabia will increase the likelihood of adopting and implementing the action plan that will help nurses effectively transfer their knowledge of pain management and enhance their competencies.

Key concepts: Action plan, Competencies, Pain management, Transfer of learning.

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LIST OF ACRONYMS AND ABBREVIATIONS

AACN   American Association of Critical Care Nurses

ADLs   Activities of daily livings

ADPIE   Assessment, Diagnosis, Planning, Implementation, Evaluation

ATC   Around the clock

BPI   The Brief Pain Inventory

BPS   Behavioural Pain Scale

CAM-   Complimentary medicine and alternative medicine

CBAHI	Central Board for Accreditation of Healthcare Institutions
CBT	Cognitive behavioural therapies
CNE	Center of Nursing Education.
CNPI	Checklist of Nonverbal Pain Indicators
COLDSPA	Character, onset, location, duration, severity, pattern, and associated factors
CPOT	Critical Care Pain Observation
COX	Cyclooxygenase enzyme
CRIES	Crying, Required oxygen, Increased vital signs, Expression, Sleeplessness
CRN	Clinical Resource Nurse
CSPMS UK	Core Standards for Pain Management Service, United Kingdom
EMLA	Eutectic Mixture of Local Anaesthetics
FLACC	Face, Legs, Activity, Crying, Consolability
FPS	Wong-Baker FACES Pain Rating Scale
FPS-R	Revised FACES Pain Rating
IMI	Irish Management Institute
JCI	Joint Commission International
KAIMRC	King Abdullah International Medical Research Center
KSA	Kingdom of Saudi Arabia
LF-MPQ	Long -Form of McGill Pain Questionnaire
NIC	Nursing Interventions Classification
NIPS	Neonatal Infant Pain Scale
NMDA	N-Methyl D-Aspartate
NOPPAIN	Non-communicable Patients Assessment Instrument
NPASS	Neonatal Pain Agitation and Sedation Scale
NSAIDS	Nonsteroidal anti-inflammatory drugs
OLD CARTS	Onset of pain, location of pain, characteristics of pain, aggravating factors of pain, relieving factors, timing and severity
OPQRSTUV	Onset of pain, provoking/palliating, quality, region/radiation of pain, timing/treatment, understanding impact on one and values
PACSLAC	Pain Assessment Checklist for Seniors with Limited Ability to Communicate
PAINAD	Pain Assessment in Advanced Dementia Scale
PIPP	Premature Infant Pain Profile

PPQ	Vani Thompson Paediatric Pain Questionnaire
PQRST	Provocation and palliation symptoms, quality of pain, region and radiation of pain, severity of pain and timing
QOL	Quality of life
RNAO	Registered Nurses' Association of Ontario
WILDA	Words to describe pain, intensity, location, duration, and aggravating/alleviating factors
SF-MPQ	Short-Form of McGil Pain Questionnaire
SPSS	Statistical Package for the Social Sciences
TENS	Transcutaneous electrical nerve stimulation
TOL	Transfer of learning
QUESTT	Question the child/caregiver, use pain rating tools, evaluate behaviour, sensitise parents, take cause of pain into account and take pain into account
VAS	Visual Analogue Scale
VDS	Verbal Descriptor Scale
VRS	Verbal Rating Scale

CHAPTER ONE: OVERVIEW OF THE STUDY

1.1   INTRODUCTION AND BACKGROUND TO THE RESEARCH PROBLEM

As primary caregivers, nurses spend more time with patients than other healthcare providers. Patient outcomes and the well-being of every individual patient are therefore affected by the quality of nursing care they receive. Nurses are responsible for ensuring patient safety, including assessing and managing patients' pain to promote optimal pain management, using interventions based on individual patient's needs. Every nurse, therefore, has an essential role and responsibility towards pain management (Matzo & Sherman 2015:474; Cooper & Gosnell 2015:473; Arnstein 2010:5-10).

Pain management does not always form part of the curriculum of undergraduate programmes, or when included, there is limited input or emphasis on it (Dongara, Nimbalkar, Phatak, Patel & Nimbalkar 2017:31; Latchman 2014:11). This might be one reason for the low priority given by nurses to pain management (Baird 2015:153; Ferrel, Coyle & Paice 2015:136; Carter & Simons 2014:25). To overcome this barrier, some teaching hospitals established centres of nursing education that included pain management experts, such as pan team members or specialist nurses responsible for training other professional nurses (Drake & Williams (2017:9). Moreover, Dongara et al. (2017:25), Pretorius, Searle and Marshall (2015:378), Krokmyrdal and Andenaes (2015:792), Tse and Ho (2014:10); Ekim and Ocakci (2013:e226) also mention that other centres of nursing education provide ongoing education to improve the knowledge, skills and attitudes towards pain management. In two hospitals in Riyadh, Kingdom of Saudi Arabia, pain team members teach pain management twice monthly in a four-hour workshop in the Centre of Nursing Education (CNE). These pain management teaching courses are formally conducted at the CNE and in the respective units as unit-based in-service education opportunities.

Despite all training opportunities available, pain management teams and clinical facilitators still experience persistent challenges and barriers related to pain management

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skills, possibly due to challenges in the transfer of learning of pain management competencies of nurses. Even though pain management education is highly prioritised in the mentioned two specific Saudi Arabian teaching hospitals, it appears as if nurses are not compliant with applying what they learned despite repetitive educational efforts and the availability of guidelines about pain management (Gordon Rees, McCausland, Pellino, Sanford-Ring, Smith-Helmenstine & Danis 2008:509).

Patient satisfaction surveys are considered the most valid determinant of patient satisfaction and are used by hospitals to measure quality care and evaluate whether that service provides adequate pain management care (Khoie, Tabrizi, Khorasani, Rahimi & Marhamati 2017:1; Karabulut, Aktas, Gürcayir, Yilmaz and Gökmen 2015:17). Pain reassessment also contributes to patient satisfaction (Glowacki 2015:38; DeVore, Clontz, Ren, Cairns & Beach 2016:e23).

Some surveys indicated that patients were not satisfied with pain management in both the study hospitals, as patients indicated that the nurses did not evaluate the effectiveness of analgesia given to them (Acute Pain Service Quality Improvement Pain Data 2017). An average of only 40% of patient satisfaction regarding pain reassessments after interventions was recorded (Acute Pain Service Quality Improvement Pain Data 2017).

Poor pain management might be due to a possible challenge with the transfer of learning of pain management competencies of nurses (DeVore et al. 2016:e23). To conquer the pain management theory-practice gap, educators, supervisors, and clinical facilitators may play a major role in teaching nurses about pain management and the appropriate scales to use for conducting the assessment. They need to understand the characteristics of their students, thus enabling them to apply information obtained during training in order to improve pain management (Keefe & Wharrad 2012:e70; Donovan & Townsend 2011:32). The transfer of learning in pain management education, therefore, plays an essential role in improving nurses' competencies (Long 2013:225; Tse & Ho 2014:9). Educators should comply with the principles of the transfer of learning. These principles refer to (1) selecting the correct teaching approach, (2) identifying

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the characteristics and learning style of the students, (3) choosing the learning content, and (4) ensuring a learning climate (Donovan & Darcy 2011:123; Botma, Van Rensburg, Coetzee & Heyns 2015:499; Botma & MacKenzie 2016:105).

The literature regarding the transfer of learning justifies the need to develop an action plan to enhance the transfer of learning of nurses' pain management competencies.

1.2   STATEMENT OF THE RESEARCH PROBLEM

The effects of poor pain management contribute to patient dissatisfaction, prolonged institutionalization, readmissions, and increased costs (Hardin & Kaplow 2016:279; Arnstein 2010:48). Patients with inadequate pain management have a reduced capacity to perform physical and complex cognitive tasks due to direct distraction of pain and or related to associated fatigue, sleep deprivation, depression and anxiety (Cardenas & Hooton 2015:8; Glowacki 2015:35).

Therefore, pain management education for health care professionals is highly prioritised internationally to improve patient outcomes and patient satisfaction. In countries such as Brazil, the Ministry of Health created a national program for professional education and assistance with pain and palliative care (De Freitas, De Castro, Castro & Heineck 2014:808). At the same time, in the United Kingdom, the Core Standards for Pain Management Service (CSPMS) prioritises professional education in pain management (CSPMS UK 2015:137).

Although pain management education is also highly prioritised in the two Saudi Arabian teaching hospitals, "Hospital A" and "Hospital B" nurses still demonstrate poor pain management competencies (Eid, Manias, Bucknall & Almazzrooa 2014:e34; Alqahtani & Jones 2015:47). A factor, amongst others, might be the challenges about the transfer of learning of pain management competencies. An action plan to enhance the transfer of learning of pain management competencies of nurses might contribute to better pain management competencies and ultimately to better patient outcomes.

1.3   RESEARCH AIM/PURPOSE

This study aimed to develop an action plan to enhance the transfer of learning (TOL) of pain management competencies of nurses in Saudi Arabian teaching hospitals.

1.4   RESEARCH OBJECTIVES

The objectives of this study were to:

1) Identify and describe the resources available to conduct pain assessments (Phases 1 and 3).

2) Identify and describe nurses' characteristics and learning styles that enhance the transfer of pain management competencies (Phase 2).

3) Explore the teaching approaches employed by the clinical facilitators during the pain management education of nurses (Phase 3).

4) Describe the learning content regarding pain assessment and management (Phase 3).

5) Describe the transfer of a learning climate within the hospitals' nursing care areas (Phase 3).

6) Develop an action plan to contribute to enhancing the transfer of learning of pain management competencies of nurses (Phases 4 and 5).

1.5   RESEARCH QUESTIONS

Central question: What action plan can be developed within Saudi Arabian teaching hospitals to enhance the transfer of pain management learning?

The following subsidiary-questions further structured the research study:

1) What are the available resources for pain assessment?

2) Which characteristics and learning styles of nurses enhance the transfer of pain management competencies?

3) Which teaching approaches are employed by the clinical facilitators during the pain management education of nurses?

4) What is the learning content regarding pain assessment and management?

5) What is the transfer of a learning climate within the hospitals' nursing care areas?

6) Can an action plan to enhance the transfer of learning of pain management competencies of nurses be developed?

1.6   THEORETICAL FRAMEWORK

This study adopted the Systemic Model of Transfer of Learning, as developed by Kontoghiorghes (2004) and adapted by Donovan and Darcy (2011:125). Donovan and Darcy (2011:125) indicated that transfer occurs within a specific system where each factor influences the transfer of learning.

This model suggests individual and organizational performance as the link between the transfer of learning and work environment characteristics (Donovan & Darcy 2011:124). The model is based on the idea that four factors influence the transfer of learning in the workplace: 1) trainee characteristics (the nurses), 2) training design (learning content), 3) training transfer climate and 4) work environment as illustrated by Donovan and Darcy (2011:125), Botma and MacKenzie (2016;105), Ma, Bai, Bai, Ma, Yang and Li (2018:2).

This model is appropriate within this study context as all four factors are applicable if an action plan to enhance the transfer of learning of pain management competencies of nurses is to be developed. The nurse is an individual with specific characteristics that include cognitive ability, personality and motivation to learn and transfer that knowledge. These characteristics influence the transfer of learning of pain management competencies. Another aspect is the pain management educational design that includes principles of learning, sequencing, learning content and material consistent with the clinical requirements, which may also influence the transfer of pain management competencies. The nurses need to apply their acquired competencies in pain management in a favourable transfer climate supported by supervisors, clinical facilitators, and co-workers to enhance the transfer of learning. To learn to transfer successfully, nurses need the resources and opportunities to apply their new skills and

abilities to the workplace. The Systemic Model of Transfer of Learning is significant for this study as nurses are primarily responsible for managing pain.

1.7   DEFINITIONS OF KEY THEORETICAL CONCEPTS

1.7.1   Action plan

An action plan is a formal or informal strategy to help the learner to change in doing things differently by setting a goal, creating a vision, thinking about a timeframe, considering boundaries and resources, alternatives, options, implementation and consequences of change to help the learner and influence others visible to them (Cranton 2016:131).

1.7.2   Clinical facilitator

A clinical facilitator is described by Tollefson, Bishop, Jelly, Watson and Tambree (2011:viii) as a skilled or experienced nurse who is knowledgeable and confident, employed within assigned clinical areas, supernumerary to the ward and solely responsible for clinical education and support.

1.7.3   Competency

Competency is a process that continually verifies an individual's capacity to integrate knowledge (cognitive ability), skills (psychomotor capabilities), and attitudes (affective inclinations) reflected in the quality of clinical practice that benefits others, which can be evaluated by professional standards and be developed and enhanced through professional training and reflection (Avis 2016:123; Still, Sarwer & Blankenship 2014:188).

1.7.4   Learning

According to Kolb (2015:49), learning is the process whereby knowledge is created through experience transformation.

1.7.5 Transfer of Learning (TOL)

Transfer of Learning is the application of knowledge, skills and attitudes obtained in learning situations in practice (Donovan &Townsend 2011:6).

1.7.6 Nurse

In most countries, a nurse is either registered, licensed or qualified and is a person equipped and authorised to: "(1) engage in the general scope of practice, promotion of health, prevention of illness, and care of physically ill, mentally ill, and community settings; (2) carry out healthcare teaching; (3) participate as a member of the healthcare team; (4) supervise and train nursing and healthcare auxiliaries; and (5) be involved in research" (Oulton & Caldwell 2008:565).

1.7.7 Pain management

Pain management is the process or techniques of providing medical or nursing care that prevents and provides treatment or interventions that alleviate, reduce or control the levels of pain an individual experiences for the longest possible time (DeWit & Kumagai 2013:134)

1.8 KEY OPERATIONAL DEFINITIONS

1.8.1 Clinical facilitator

Clinical facilitator in this study context refers to a "clinical resource nurse" (CRN) employed within the assigned clinical areas, supernumerary to the ward and solely responsible for clinical education and the support of nurses.

1.8.2 Competency

Competency in this study refers to nurses' knowledge, skills and attitudes pertaining to the comprehensive assessment and management of pain.

1.8.3 Nurses

In this study, the word "nurses" refers to expatriate and Saudi registered nurses, all registered with the Saudi Council for Health Specialities and working in medical, surgical, oby-gynae, cardiac and paediatric wards with experience in providing pain management.

1.9 RESEARCH METHODOLOGY

1.9.1 The Research Paradigm

The study was done within the pragmatist paradigm using a mixed methods research methodology. Polit and Beck (2021:587), Johnson and Christensen (2012:32), and Creswell and Clark (2011:41) assert that the pragmatist or pluralist paradigm is associated with mixed methods research and assumes that the focus is on the consequences of research, on the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under investigation. This means that the research design should be planned and conducted based on what will best help to answer the research question of the study (Minton & Lenz 2019:93; Johnson & Christensen 2012:32). Mixed methods research enables the researcher to avoid the limitations of a single approach as both qualitative and quantitative in a single study are complementary (Polit & Beck 2021:587) and deemed appropriate (refer to Section 3.3.1).

1.9.2 Research design

An explanatory sequential mixed method design was adopted for the study. The explanatory sequential design started with the collection and analysis of quantitative data, which has the priority for addressing the study's questions, followed by the subsequent collection and analysis of qualitative data as suggested by Polit and Beck (2021:594), DeCuir-Gunby and Schutz (2017:86), and Creswell (2015:37-38). The research was conducted in different phases, where different approaches and research techniques surfaced, as illustrated in Figure 1.1.

An Explanatory Sequential Mixed Method approach

Phase 1
(Chapter 3)
Objective: To identify and describe the resources available to conduct pain assessments.

Design: Quantitative phase.

Population: 1462 Nurses and 47 Clinical facilitators.

Sample:483 Nurses and 45 Clinical facilitators using proportionate stratified sampling.

Research technique: Survey questionnaire

Phase 2
(Chapter 3)
Objective: To identify and describe the nurses' characteristics and learning styles that enhance transfer of pain management competencies.

Design: Quantitative phase.
Population:1462 Nurses.

Sample: 483 Nurses using proportionate stratified sampling.

Research technique: Survey questionnaire.

Phase 3
(Chapter 3)
Objectives: To: (i) explore the teaching approaches employed by the clinical facilitators during pain management education of nurses. (ii) Describe the learning content regarding pain assessment and management and (iii) Describe the transfer of learning climate within the hospitals' nursing care areas.
Design: **Quantitative** phase.
Population: 47 Clinical facilitators.
Sample:45 Clinical facilitators using proportionate stratified sampling.
Research technique:

(Chapter 4)

Data analysis and interpretation of findings from Phases 1, 2 and 3

Phase 4
(Chapter 5)

- Merged data of Phases 1,2 & 3

- Literature review.

Phase 5
(Chapter 6)

Objective: Validate the draft action plan.

Design: Qualitative phase

Sample: Panel of 2 Clinical facilitators and 10 nurses used purposive nonprobability sampling

Research technique: Delphi technique for validation of developed draft action plan

Figure 1.1   Structural overview of the research design

1.9.2.1 Phase 1: (Quantitative)

In Phase 1, the resources available for pain assessment were assessed using a self-administered questionnaire to gather data from nurses and clinical facilitators.

1.9.2.2 Phase 2: (Quantitative)

In Phase 2, the nurses' characteristics and learning styles were assessed using a self-administered questionnaire.

1.9.2.3 Phase 3: (Quantitative)

In Phase 3, the teaching approaches employed, the learning content and the learning climate within hospitals were described from data obtained from the clinical facilitators using self-administered questionnaires with closed and open-ended questions.

1.9.2.4 Phase 4:

In Phase 4, the combined data from Phases 1, 2, and 3, as well as a literature review, were utilised to develop an action plan to enhance the transfer of learning of pain management competencies.

1.9.2.5 Phase 5 (Qualitative)

During Phase 5, the developed action plan to enhance the transfer of learning of pain management competencies of nurses was validated by a purposively selected panel of clinical facilitators and nurses to seek agreement on the actions, the responsible persons as well as the time frame included in the plan to ensure quality, faithful interpretation and applicability within the specific context (Baldwin 2018:20, DeCuir-Gunby & Schutz 2017:190; Bazeley 2013:408; Cohen, Manion & Morrison 2011:404).

1.9.3   Research setting

A research setting is defined by Polit and B,eck (2021:42), Richards (2021:58) and Grove, Gray and Burns (2015:38) as the specific places where information is collected or the location in which a study is conducted.

The Kingdom of Saudi Arabia (KSA) is a sovereign Arab state in Western Asia, also called the Middle East and is divided into 13 regions bordered by Jordan and Iraq to the north, Kuwait to the northeast, Qatar, Bahrain and the United Arab Emirates to the East, Oman to the southeast and Yemen to the south. The Gulf of Aqaba separates the KSA from Israel and Egypt (see Figure 1.2).

Riyadh is the capital city, and within the capital city, there are four teaching hospitals. The study was conducted in two purposively selected teaching hospitals, as access to the other two hospitals was impossible due to the researcher's work permit control.
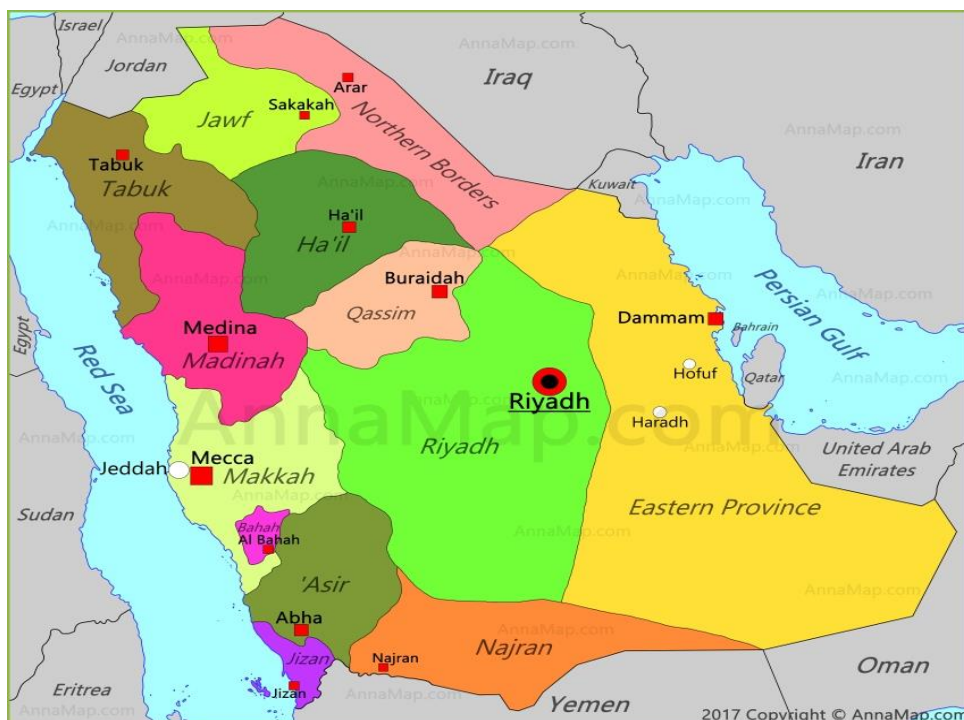
Figure 1.2 Map of the Kingdom of Saudi Arabia

The two teaching hospitals cater to all Ministry of National Guard employees, their families, and civilians in need of medical care. In the backyard of the two hospitals is King Saud bin Abdulaziz University for Health Sciences, which collaborates with the two hospitals for student training with faculties of nursing, medicine, pharmacy, dentistry, science and health professionals and a postgraduate training centre for all health care providers. In the same vicinity is the King Abdullah International Medical Research Center (KAIMRC) for all medical and nursing research (see Figure 1.2). For continued nurse professional development, the two hospitals use one nursing education centre erected in their backyard.

Even though there are other nursing divisions, it was decided to conduct the study in five nursing care divisions that mainly met the highest eligibility criteria of the study, namely 19 (nineteen) medical wards, 9 (nine) surgical wards, 9 (nine) paediatric wards, 4 (four) cardiac wards and 7 (seven) obs-gynae (obstetric-gynaecologist) wards with professional nurses and clinical facilitators ("clinical resource nurses") working in the selected hospitals.

In Hospital A, there are 15 (fifteen) medical wards, 8 (eight) surgical wards, 4 (four) cardiac wards, 1 (one) paediatric cardiac ward and 5 (five) obs-gynae wards, while in Hospital B, there are 4 (four) medical wards,1 (one) surgical ward and 8 (eight) paediatric wards (see Table 1.1).

Table 1.1 The five-nursing care divisions of hospitals A and B

Nursing Care Divisions	Wards in Hospital A	Wards in Hospital B
19 Medical wards	15	4
9 Surgical wards	8	1
9 Paediatric wards	1	8
4 Cardiac wards	4	0
7 Obs-gynae wards	5	2

1.9.4   Population

Ngulube (2021:299), Patel (2018:85) and Jha (2014:182) refer to the population as the entire group, person or object that is of interest to the researcher. In other words, the population meets the variable the researcher is interested in studying. The study population was all 1462 professional registered nurses (Hospital A = 1041 and Hospital B = 421) working in the five nursing care divisions (see Table1.2) as well as the 47 clinical facilitators (Hospital A = 32 and Hospital B = 15) working in the two teaching hospitals. Table 1.2 below indicates the population size of nurses and clinical facilitators ('CRNs') in both hospitals' five nursing care divisions.

Table 1.2   Accessible Population

Nursing Care Divisions	Hospital A		Hospital B	
	Population size of nurses	Population size of Clinical facilitators	Population size of nurses	Population size of Clinical facilitators
1. Medical wards	459	14	135	5
2. Surgical wards	282	8	35	1
3. Paediatric wards	20	1	216	8
4. Cardiac wards	166	4	0	0
5. Obs-gynae wards	114	5	35	1
Total	**1041**	**32**	**421**	**15**

1.9.5   Sample and sampling methods

A sample is a subset of the population that is selected for a study (Polit & Beck 2021:802; Grove et al. 2015:46). Sampling can be defined as the process of obtaining a small number of participants for research to draw conclusions regarding the whole population (Ngulube 2021:300) because it is generally impractical to study an entire population.

1.9.5.1 Phases 1, 2 and 3: Quantitative

A probability sampling method, namely a proportionate stratified sampling method (Messinger & Guadalupe-Diaz 2020:343; Dillman, Smyth & Christian 2014:76), was used to select the registered nurses as well as the clinical facilitators from the five nursing care divisions within the two participating hospitals. The rationale for choosing stratified random sampling in Phases One, Two and Three was to enhance represent-atives and reduce sample error (Maxfield & Babbie 2018:214; Leedy & Ormrod 2015:179; Polit & Beck 2014:180; Dillman et al. 2014:76). Each of the five nursing care divisions had equal representation as the sample size from each nursing care division stratum was determined at a 95% level of confidence as recommended by Polit and Beck (2021:387) and Babbie (2020:206). To calculate the size of each stratum and the sample of this study, the Raosoft 2011 sample size calculator was used to calcu-late the margin of error and confidence level, as Zizile and Tendai (2018:229) recom-mend. Table 1.3 indicates the population, the sample size in each stratum, and the total size of all five strata, calculated at a 95% confidence level of each nursing care division of each participating hospital. The rationale for using a 95% level of confidence in each nursing care division in both hospitals was to draw valid and reliable data by drawing a proportional sample size, as supported by Privitera (2022:42) and Jha (2023:143).

Table 1.3 Population and sample in each stratum of the participating hospitals

Nursing care di-vision	Medical wards		Surgical wards		Paediatric wards		Cardiac wards		Obs-gynae wards		Total Population	
	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B
Population size of nurses	459	135	282	35	20	216	166	0	114	35	1041	421

Sample size of nurses	210	101	163	33	20	139	117	0	89	33	281	202
Population size of Clinical facilitators	14	5	8	1	1	8	4	0	5	1	32	15
Sample size of Clinical facilitators	14	5	8	1	1	8	4	0	5	1	30	15

Hospital A mainly had nurses working in adult patients' wards, while Hospital B was more for paediatric wards. There are also adult patients' wards.

A recruitment letter (see Annexure 1) was e-mailed to the nurse managers who acted as gatekeepers, together with the letter to the gatekeeper (see Annexure 2) of each ward in the participating hospitals. The nurse manager was requested to select the participants and distribute the recruitment letters via e-mail to nurses and clinical facilitators who have complied with the following criteria:

1. Nurses who attended at least one pain management workshop within the past 3 years.

2. Nurses who attended ward in-service training about pain management in the past 12 months.

3. Participants who were willing and comfortable to be interviewed in English.

4. Clinical facilitators who educate nurses about pain management in the five nursing care divisions.

The researcher randomly selected the sample in each stratum from the volunteers who provided contact details to the nurse managers (gatekeepers).

1.9.5.2 *Phase 5, Qualitative*

The Delphi technique is defined as a structured group communication process in research within the social sciences to identify degrees of consensus on practice issues within a group of diverse, knowledgeable advisors (Polit & Beck 2021:236; Lloyd & Stirling 2015:3). It was used in Phase 5. A purposive non-probability sampling was used to select a panel of two clinical facilitators (one from each hospital) and ten nurses (five from each nursing care division in both hospitals) to ensure representativeness (Polit & Beck 2021 268; Mellenbergh 2019:23). The participants were selected based on their consent to participate, their expertise in pain management, and their active participation in pain management either as a nurse or as a facilitator.

1.9.6 Data collection methods and procedures

1.9.6.1 *Administering the data collection instrument*

In Phases 1, 2 and 3 (refer to Sections 3.9, 3.10, 3.11 and 3.13 for detailed discussion), self-designed questionnaires were used (see Annexures 4, 5 and 8) with closed-ended and open-ended questions at the end of the last section of each questionnaire.

As mentioned, a memo was sent to gatekeepers (nurse managers of units) through emails to recruit potential participants (see Section 3.13) who comply with the inclusion criteria (see Annexures 1 & 2). From the list of volunteers and contact details received from the nurse managers, the researcher randomly selected the sample and delivered the questionnaire to the respondents in person. After completing the questionnaires, the respondents placed them in a closed box provided in each ward, and they were fetched afterwards by the researcher.

In Phase 4 (refer to Section 5.2.5 for detailed discussion), an instrument was not used as the data obtained in Phases 1-3 and the literature review were used to develop the draft action plan.

In Phase 5, the Delphi technique was used. Following the five phases, the Delphi technique, using open-ended questions, was implemented, as advised by Grima,

Sood and Özen (2023:28), and Botma, Greeff, Mulaudzi and Wright (2010:253-254). The panel of two clinical facilitators and ten nurses validated the developed action plan as a representative group. The structured tool with open-ended questions (see Annexure 10), called a validation tool, was used to give the panellists space to provide their written opinions (Grima et al. 2023:28; Botma et al. 2010:253). They used it to make suggestions for improvement. The developed action plan, with the incorporated assessment tool, was circulated via e-mail to each panel member. They were allowed ten working days to assess the plan and provide recommendations and feedback. After receiving feedback, the researcher collated and analysed the feedback and re-sent a revised draft to the panellists. The process was continued until a 75% agreement was reached.

1.10 MEASURES TO ENHANCE THE QUALITY OF THE STUDY

The study addressed method-specific quality criteria in the quantitative and qualitative components of mixed methods research to help achieve external consequences, as Yardley and Bishop (2008, cited in Bishop 2015:8) recommend.

1.10.1 Validity and reliability

In Phases 1, 2 and 3, the principles of validity and reliability were applied to minimize errors that might arise from measurement problems in the research study.

1.10.1.1 Reliability

Reliability is "the consistency, stability, and repeatability of observations or measures" (Gray and Grove 2021:458; Curry & Nunez-Smith 2015:176). The reliability of the survey questionnaire was assessed to ensure stability and internal consistency. Test-and-retest for reliability of the questionnaires was used to measure changes in people over two weeks, as recommended by Rubin (2020:99) and Cairns (2019:177). A total of 10% of the total sample of nurses and clinical facilitators for each hospital was pre-tested with subjects from other nursing divisions with characteristics similar to those of the main study (see Section 3.10 for detailed discussion). The actual survey results

were then compared and correlated with the initial results found in the pilot study and expressed by the "correlation coefficient r". The correlation above .70 or .80 was deemed acceptable stability (Rubin 2020:99; Rubin & Babbie 2014:219). Cronbach's alpha (α) coefficient test was used for assessing internal consistency using the R Statistical Software ("R") as recommended by Rey, Pena and Neto (2020:71). Inter-item correlation reliability was examined based on the correlation matrix of all items on the scale, corrected item-total correlation, and alpha if an item was deleted to improve scale reliability (Hogan 2019:107).

1.10.1.2 *Validity of instrument*

The concept validity of an instrument refers to the extent to which an instrument actually reflects or is able to measure the construct being examined (Khakshooy & Chiappelli 2018:35). Face and content validity were used to validate the questionnaire, as embraced by Gray and Grove 2021:463. The face and content validity were evaluated by the supervisor and a scientific committee that provided input and feedback for modifications as supported by Shrotryia and Dhanda (2019:4) (refer to Section 3.11 for detailed discussion). The questionnaires were pre-tested for refinement before being utilised in the main investigation, as Jönsson and Prins. (2019:63) recommend.

1.10.2 Rigour

In Phase 5, rigour or trustworthiness, as described by Lincoln and Guba (1985) cited in Polit and Beck (2021:569) and Liamputtong (2013:25-27), was adopted. Trustworthiness is the criterion for evaluating the rigour of qualitative research (Grundström 2018:75; Rubin & Babbie 2014:485). The criteria credibility, dependability, confirmability, transferability, and authenticity, as described by Polit and Beck (2021:322-323), were utilised (see Section 6.2.11 for detailed discussion).

1.10.3 Inference quality

Inference quality refers to the believability and accuracy of deductively derived conclusions from a mixed-method study (Polit and Beck 2021:605). Phases 1, 2, and 3 data and a literature review were combined in Phase 4 to develop a draft action plan to enhance transfer learning of nurses' pain management competencies. In Phase 5, a developed and validated action plan, based on the panel members' consensus, resulted in the study's outcome.

1.11 DATA ANALYSIS

This is a five-phase design in which quantitative data analysis was followed by qualitative data analysis as proposed by DeCuir-Gunby and Schutz (2017:186)

1.11.1 Phases 1, 2 and 3: Quantitative data analysis

The quantitative data in Phases 1, 2, and 3 were analysed using the Statistical Package for the Social Sciences (SPSS) version 25. The data were explored by conducting descriptive analyses and variances of response to each item, as explained by Polit and Beck (2021 366). The open-ended questions in Phases 1, 2 and 3 were coded, and a thematic content analysis was done to draw valid inferences as mentioned by Gottschalk (20,20: 57) (see Section 4.2.3, 4.3.4 and 4.4.6, where these are discussed in detail).

1.11.2 Phase 5, Qualitative data analysis

The developed action plan was scrutinised and assessed by the panellists who took part in the Delphi technique. All comments and recommendations received during each round were thematically analysed using a six-phase guide as described by Clarke and Braun (2013:121) and Maguire and Delahunt (2017:3354). This consisted of Step 1, becoming familiar with the data; Step 2, generating initial codes; Step 3, searching for themes; Step 4, reviewing the themes; Step 5, defining the theme; and Step 6, writing up the themes as a final refinement of the themes and subthemes to interact and relate to each other to create the drafted action plan. The

recommendations were implemented in a new draft action plan (see Section 6.2.10 for detailed discussion). All Likert scale items were also analysed and incorporated in the new draft version of the action plan.

1.11.3 Integration of the findings

Merged integration occurred after both the quantitative Phases 1, 2 and 3 and qualitative Phase 5 data collection and analysis were completed, as described by Curry and Nunez-Smith (2015:10). The merged integration contributes to the final agreed-upon action plan developed to enhance the transfer of learning of pain management competencies of nurses (DeCuir-Gunby & Schutz 2017:119).

1.12 ETHICAL CONSIDERATIONS

The principles of ethics and moral issues were adhered to as described by Polit and Beck (2021:131--148) and Ngulube 2019:76). They include the following items.

1.12.1 Respect for human dignity and self-determination

The information letter (see Annexures 3 and 9) informed the respondents that participation is voluntary and that they could withdraw at any time without fear of penalty.

1.12.2 Informed consent

An information letter (see Annexure 3) and consent letter (see Annexure 9) were provided to ensure the participants knew all information relevant to the study and their participation. The participants were asked to give informed written consent before participating in the study.

1.12.3 Confidentiality and anonymity

All information and data collected were portrayed confidentially. Confidentiality and anonymity were maintained by pledging to the participants that their information would not be disclosed to their leadership, colleagues or anybody else and their identity would not be published in the research report or thesis. Complete confidentiality was

ensured by keeping the completed questionnaires in locked storage to prevent unauthorised access to the data.

1.12.4 Researcher-Participant Relationship

The researcher maintained rapport and respect with the participants while negotiating their participation in the study by assuring them that their participation would not be used against them in any way, ensuring the relationship was not exploited (Polit & Beck 2021:144).

1.12.5 Protecting the rights of the institution

Permission to conduct the research was first sought from the Research Ethics Committee of the Department of Health Studies, Unisa (see Annexures 6a and 6b), followed by application from the King Abdullah International Medical Research Center (KAIMRC) Review Committee and Institutional Review Boards (IRB) of the two selected Saudi Arabian teaching hospitals. The Nursing Administration, KAIMRC and IRB reviewed the proposed study and monitored it to ensure that ethical standards were applied, such as the privacy and confidentiality of the hospitals (see Annexures 7a, 7b, 7c and 7d for IRB approval Memo SP 18-036-R).

1.12.6 Scientific integrity of the research

Polit and Beck (2021:147) and Iphofen (2017:97) emphasise the responsibility of the researcher to monitor the integrity of the research proposal, results and publications. The researcher maintained honesty by avoiding duplicating any other work or any other form of misconduct, such as fabrication, falsification, dishonesty and plagiarism. There was voluntary participation with no compensation.

1.13 ORGANISATION AND STRUCTURE OF THE THESIS

The structure of the study is illustrated in Table 1.4.

Table 1.4 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	**Chapter outline**	**Chapter content**
Chapter 1	Overview of the study	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review	Consists of the literature review related to: 1) Systemic Model of Transfer of Learning by Donovan and Darcy, 2) Transfer of learning and 3) Pain management and tools.
Chapter 3	Research design and methodology	1) Illuminates the overarching research design 2) Phase 1, 2 and 3 (quantitative phases): methodology and 3) data gathering
Chapter 4	Data analysis and interpretation	Presents the data analysis and interpretation of the findings from Phases 1 to 3.
Chapter 5	Phase 4	Includes a description of Phase 4 of the study: a) Literature review on action plan development b) Development of the draft action plan
Chapter 6	Phase 5	Outlines and describes Phase 5 of the study (qualitative phase): a) Methodology b) Validation of the action plan: c) The validated action plan
Chapter 7	Conclusion, recommendations, and limitations	Deals with the conclusion, recommendations and limitations of the study.

1.14 CHAPTER SUMMARY

This chapter provided an overview of the study, the methodology followed, and the intended outcome. Chapter 2 will review the literature on the Systemic Model of Transfer of Learning by Donovan and Darcy, as well as the transfer of learning, pain management, and tools as described in Figure 2.1.

CHAPTER TWO: LITERATURE REVIEW

2.1   INTRODUCTION

A thorough literature search was conducted to prepare and present the literature review. The purpose of the review was to obtain relevant literature that supports the problem statement and could be used as the basis for developing the questionnaires used in Phases 1, 2, and 3 of the study, as illustrated in Table 2.1.

Table 2.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	**Chapter outline**	**Chapter content**
Chapter 1	Overview of the study	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review	Consists of the literature review related to: 1) Systemic Model of Transfer of Learning by Donovan and Darcy, 2) Transfer of learning and 3) Pain management and tools.
Chapter 3	Research design and methodology	1) Illuminates the overarching research design. 2) Phase 1, 2 and 3 (quantitative phases): methodology and 3) data gathering.
Chapter 4	Data analysis and interpretation	Presents the data analysis and interpretation of the findings from Phases 1 to 3.

Chapter 5	Phase 4	Included a description of Phase 4 of the study: a) Literature review on action plan development. b) Development of the draft action plan.
Chapter 6	Phase 5	Outlines and describes Phase 5 of the study (qualitative phase): a) Methodology. b) Validation of the action plan: c) The validated action plan.
Chapter 7	Conclusion, recommendations, and limitations	Deals with the conclusion, recommendations and limitations of the study.

The following databases were searched via the Unisa Library: Academic Journals, Academic Search Premier, BioMedCentral, CINAHL, Cochrane Library, eBook, EM-BASE, Global Health, Health Source: Nursing/Academic Edition, Google Books, Google Scholar, OVID, Medline, Nursing & Allied Health Database, Pubmed Central, PsychINFO, PsyARTICLES, Routledge publishers, South African Journal, Wiley Online Library, and Unisa Institutional Repository. Books published between 2010 and 2018 were included in the review, while articles published between 2013 and 2018 were searched. Additional searches included Clinical Key, Academia.edu and Research gate.net.

The search in the review was limited to the English language. It included keywords such as pain behavioural cues, transfer of learning, training transfer, Systemic Model of Transfer of Learning, pain assessment, comprehensive pain assessment, pain nursing assessment, pain interventions, pain rating scale, pain nursing diagnosis, pain pharmacological interventions, and pain non-pharmacological interventions.

The chapter consists of three main segments: (1) The concept of transfer of learning, (2) The Systemic Model of Transfer of Learning by Donovan and Darcy (2011), and (3) Pain management and pain management tools nurses use for assessment of pain.

All searched items were saved in Mendeley's library for easy access and sorting of similar keywords.

2.2 THE CONCEPT TRANSFER OF LEARNING (TOL)

The concept of transfer of learning is widely discussed and defined within the extant literature and was initially penned by Edward Thorndike and Robert Woodworth in 1901, who were interested in how individuals would transfer learning from one context to another (Findlay 2015:34; Snowman & McCown 2015:372). Transfer of learning can be described as the degree to which trainees effectively apply knowledge, skills and attitudes gained in a training context to an application context (Babu & Gayathri 2018:101; Ma et al. 2018:2; Botma & MacKenzie 2016:105; Daffron, Moore & Chicovsky 2015:50; Aluko & Shonubi 2014:641; Shalin 2014:36; Salvendy 2012:517). The term transfer of learning is interchangeably used as "transfer of training", "transfer of knowledge", "training transfer", "learning transfer", or "transfer" (Daffron & North 2011:2; Aluko & Shonubi 2014:641; Seel 2011:3337). According to Dirani (2017:104), Aluko and Shonubi (2014:641), and Kaiser, Kaminski and Foley (2013:5), transfer of learning relates to adult education, vocational or professional training, or workplace education. Transfer of learning involves three processes: (i) learning or mastering the knowledge and skills gained during a training program, (ii) using the new knowledge and skills within the practice, and (iii) maintaining the changed behaviour over time (Aluko & Shonubi 2014:641).

Within a profession such as nursing, transfer of learning is about theory-practice integration, which is the process of application of acquired theoretical knowledge, such as knowledge about pain management and the application of this knowledge in the real world (Botma et al. 2015:499; O'Connor 2015:235). Four hierarchical domains of knowledge, namely, demonstration of knowledge, comprehension of knowledge, application of knowledge, and analysis of knowledge, all play a role in the transfer of learning in the workplace. The Systemic Model of Transfer of Learning discussed in 2.3 describes how the four domains of knowledge influence the transfer of learning.

2.3 SYSTEMIC MODEL OF TRANSFER OF LEARNING BY DONOVAN AND DARCY (2011)

Various frameworks or models related to the transfer of learning have been adopted and adapted in the literature to refer to the transfer of learning. The most quoted and used models are Baldwin and Ford's (1998) "Transfer of Training Model"; Holton, Bates, and Ruona's (2000) "Learning Transfer System Inventory (LTSI) model"; Kirkpatrick's (1996) "Training Evaluations Framework"; and Donavan and Darcy's (2011) "Systemic Model of Transfer of Learning". The first three models mentioned are considered traditional transfer of learning models as they ignore the systemic or holistic factors that affect the transfer of learning (Donovan & Darcy 2011:124; Dirani 2017:101). For the following reasons, the Systemic Model of Transfer of Learning was deemed the most appropriate to be used in this study: (i) This model views learning as systemic in nature and explores factors within a specific system where each factor is interrelated to each other to influence the transfer of learning back to the workplace (Donovan & Darcy 2011:124). (ii) Originally, this model was utilised in human resource development but has been adapted and utilised in higher nursing education institutions to achieve its principal motivation, which is to promote the integration of theory with practice (Donovan & Darcy 2011:125; Botma et al. 2015:499; Botma & MacKenzie 2016:105).

The Systemic Model of Transfer of Learning, as developed by Kontoghiorghes (2004) and adapted by Donovan and Darcy (2011:125), is based on research conducted in the Irish Management Institute (IMI), an executive education institution in the Republic of Ireland (Donavan & Darcy 2011:125). Donovan and Darcy (2011:125) indicate that the transfer of learning in the work environment occurs within a specific system where each factor influences the transfer of learning. This model suggests that individual and organizational performance is the link between the transfer of learning and work environment characteristics (Donovan & Darcy 2011:124). Similar to any other model of transfer of learning, the primary objective is to improve the performance of the individual or organisation by producing desirable behavioural and or organisational change through the transfer of learning (Donovan & Darcy 2011:123). In this study context, it

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can imply that the model's objective will be to improve the pain management compe-
tencies of nurses to ensure effective pain relief of patients within the healthcare insti-
tution through the transfer of learning. The Systemic Model of Transfer of Learning is
described within several dimensions.

2.4   DIMENSIONS OF THE SYSTEMIC MODEL OF TRANSFER OF LEARNING

The Systemic Model of Transfer of Learning designates four dimensions of factors that
influence transfer of learning in the workplace namely, (1) trainee characteristics, (2)
training design, (3) training transfer climate, and (4) workplace environment charac-
teristics (Donovan & Darcy 2011:125; Ma et al. 2018:2; Botma & MacKenzie 2016;105;
Schneider 2014:68). Each of the four factors influencing transfer of learning is illus-
trated in Figure 2.1.
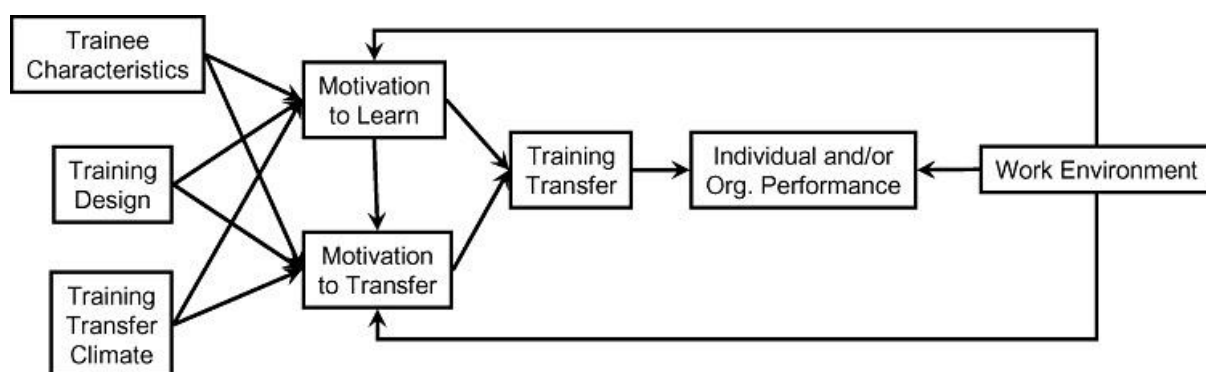
Figure 2.1 The Systemic Model of Transfer of Learning

Source: Adopted from Donovan and Darcy (2011), cited in Donovan and Darcy
(2011:125).

2.4.1   Trainee characteristics

Trainee characteristics refer to how prepared the trainees are to attend training pro-
grammes to acquire knowledge, how motivated they are to apply their learning, and
how positive they are to improve their performance (Suleiman, Dassanayake & Oth-
man 2016:22; Nazli, Sipon, Zumrah & Abdullah 2015:56; Landy & Conte 2010:321;
Donovan & Darcy 2011:123). Although there are several factors influencing the

transfer of learning under trainee characteristics, the Systemic Model of Transfer of Learning stipulates factors such as ability, personality, and motivation (Donovan & Darcy 2011:123; Wen & Lin 2014:123; Madagamage, Warnakulasooriya & Wickrama-suriya 2014:13; Daffron & North 2011:36).

The "ability factor" of a trainee is an important characteristic that influences the trainee, in this study context, the nurse, to understand, comprehend information, process the information, and then have a positive attitude towards learning and be motivated to learn new material or skills (Daffron & North 2011:36).

2.4.1.1 Ability

An ability-related element of trainee characteristics influences the transfer of learning as it includes both the cognitive and psychomotor abilities that trainees need to pos-sess to be able to learn the content of the training (Wen & Lin 2014:115; Nazli et al. 2014:56). The ability of any trainee, including a nurse, to apply knowledge, skills, and attitudes are influenced by their readiness to learn, self-efficacy, motivation to learn and the motivation to transfer that learning (Landy & Conte 2010:321; Ma et al. 2018:4). The nurses` ability to transfer their knowledge about pain management is enhanced by their general mental ability, general intelligence (cognitive ability), and psychomotor ability (Madagamage, Warnakulasooriya & Wickramasuriya 2014:61; Landy & Conte 2010:321). Nurses or trainees with higher cognitive abilities and expe-riences after training will demonstrate higher performance for information processing and the ability to retain knowledge (Nazli et al. 2015:56; Wenzel and Cordery 2014:23). Psychomotor ability refers to nurses' utilisation of their physical energy to learn and practice the skills in the clinical area or practising of skills during a learning program (Pillitteri 2014:1015; Bastable 2014:447). The abilities of the nurses or trainees that exert effectiveness in applying knowledge and skills acquired in a training program at the workplace are determined by their characteristics.

2.4.1.2 Personality

Personality can be defined as the intrinsic organisation of an individual's mental world that is stable and consistent over time and in different situations (Gandevani 2017:34). The nurses' (as trainees) personality characteristics that increase the transfer of learning are factors such as personality traits, work-related attitudes, individual goal intentions, and utility expectations (Tonhäuser & Bürker 2016:148; Wenzel & Cordery 2014:14). The personality characteristics of trainees that primarily influence the transfer of learning are intellectual curiosity, conscientiousness, extraversion, openness to experiences, agreeableness, and neuroticism (Laguna & Purc 2016:2; Tonhäuser & Bürker 2016:145; Wenzel & Cordery 2014:13). The trainees, in this case nurses, with more positive personality characteristics during training, are better able to explore, to be flexible, to accept and to adopt new skills (Laguna & Purc 2016:2; Nazli et al. 2015:56). The nurses' (trainees') reaction after attending training as well as their characteristics influence the effectiveness of the transfer of training (Nazli et al. 2015:56). The "motivation factor" of the nurses (trainees) to learn and to transfer learning are directly influenced by their ability and personality.

2.4.1.3 Motivation

The concept of motivation is defined as "the process whereby goal-directed activities are initiated and sustained" (Cook & Artino Junior 2016:997; Andrade & Evans 2013:24). Motivation involves internal processes such as goals, beliefs, views and expectations that shape and direct trainees' behaviours that enhance the transfer of learning (Andrade & Evans 2013:24). The "trainee motivation" can be defined as the extent to which the trainees, or nurses, are interested in attending training, learning from training, and applying the skills and knowledge acquired in training back to the workplace (Landy & Conte 2016:264; Andrade & Evans 2013:24; Landy & Conte 2010:325), thus apply their knowledge about pain management in practice. The motivation factors for the transfer of learning include motivation to learn and transfer, as illustrated in Figure 2.1.

- *Motivation to learn*

Motivation to learn is comprehensively defined as a specific desire of the trainee to join and learn the content of the training program to obtain knowledge and skills (Nafukho, Chakraborty, Johnson & Cherrstrom 2017:333; Kirwan 2016:93; Lee, Lee, Lee & Park 2014:2839). Motivated trainees (nurses) are more likely to perform better because of the increased transfer of learning (Nafukho et al. 2017:349). The nurses who are motivated to learn, take responsibility for their learning and practice self-regulated learning strategies (Hoyle 2015:42; Andrade & Evans 2013:24). The higher motivation of trainees or nurses to learn and participate in education programs influences their transfer of learning and competency (Nafukho et al. 2017:347; Wen & Lin 2014:117; Schneider 2014:88; Kasurkar, Cate, Vos, Westers & Croiset 2013:57). Participation in a training program is guided by self-motivation, self-efficacy, and expectations set by management (Nafukho et al. 2017:347; Tonhäuser & Bürker 2016:142; Daffron et al. 2015:54; Wen & Lin 2014:117; Schneider 2014:88; Kasurkar, Cate, Vos, Westers & Croiset 2013:57). The trainees, or nurses, who attended a course (pain management) intending to gain knowledge or skills which are interesting ("training efficiency") or useful to them ("training relevance"), tended to display higher levels of transfer of learning (Nafukho et al. (2017:349). Nurses or trainees who are provided with choices and inputs to attend a training program, such as pain management, may indicate a high transfer of learning ability (Schneider 2014:88; Saks & Haccoun 2010:297; Gegenfurtner, Könings, Kosmajac & Gebhardt 2016:293). This is typical of the participation of nurses in designing pain management training programs or if they are autonomous in deciding whether to attend. Nurses or trainees motivated to learn about pain management may develop "motivation to transfer" in their practice areas.

- *Motivation to transfer*

Motivation to transfer learning is defined as the trainees' desire to apply and connect back to their everyday work routine their newly acquired competencies from a particular training program (Reinhold, Gegenfurtner & Lewalter 2018:3; Govaerts, Knydt & Dochy 2017:8; Banerjee, Gupta & Bates 2017:609; Kirwan 2016:93; Snoek & Volman 2014:95; Wen and Lin 2014:117). Donovan and Darcy (2011:123) illustrated that

motivation to transfer learning is integrated and influenced by factors related to train-ees' personality, age, situational variables such as pre-training situations, self-efficacy, valence, and job or career variables that affect what motivates them to learn new skills and knowledge. Nafukho et al. (2017:333), Madagamage et al. (2014:13), Wen and Lin (2014:86), and Donovan and Darcy (2011:124) indicate that many beliefs influence motivation to transfer learning, but in particular, pointing out three main beliefs:

- A belief that a particular act will precede a particular outcome and suggesting that behaviour is followed by desirable outcomes ("Vroom expectancy the-ory").
- The logic is that trainees want to be treated fairly, and if they feel that by transfer of learning, they can gain equity through pay, promotion, or any other kind of rewards, then they will transfer learning ("equity theory").
- A person's intention is a function of attitude, subjective norms, and behaviour control, which influence willingness ("theory of planned behaviour").

Significant predictors that enhance motivation to transfer are trainees' self-efficacy factor, positive learning transfer climate, job motivation, satisfaction, organisational commitment, and motivation to learn (Nazli & Khairudin 2018:126; Mohanty, Dash & Dash 2017:234; Singh 2017:3; Khan, Mufti & Nazir 2015:200). The nurses' or trainees' characteristics and motivation factors should be taken into consideration by the trainer, such as the nurse educator or facilitator designing and planning the pain management training program in order to enhance transfer of learning (Daffron et al. 2015:60; Sal-vendy 2012:517).

2.4.2 Training design

Training design "refers to the relationship between the activities engaged in on the training programme and the actual job requirements of the trainee" (Donovan & Darcy 2011:123). It is important that the educator or facilitator carefully prepare the training program by assessing the needs of the trainees that will address knowledge and skills issues (Czaja & Sharit 2016:1; Munkvold & Kolās 2015:132; Wan 2013:13). The trainer or facilitator, like the nurse educator or facilitator, should plan the learning objectives

and outcomes, materials to use, content and specific instructional strategies that make it easier for trainees to apply the new knowledge and skills (Kirwan 2016:16; Czaja & Sharit 2016:1; Munkvold & Kolås 2015:132; Wan 2013:13; Kaiser et al. 2013:34). The nurses trainees should have opportunities to practice skills and give feedback related to the programme (Schneider 2014:68; Cartaxo & Simões 2014:0460; Kim & Callahan 2013:188). A transfer-oriented educational design is highly recommended as it consists of various elements and sub-elements that influence the trainees (as nurses) to introduce change in work performance (Donovan and Darcy 2011:123; Leberman & McDonald 2016:22; Wenzel and Cordery 2014:7). Factors such as principles of learning, sequencing of training content and training content are considered as part of the transfer-oriented educational design (Donavan & Darcy 2011:123; Wenzel & Cordery 2014:7).

2.4.2.1 Principles of learning

Principles of learning are referred to as laws of learning applicable to the learning process that provide additional insight into what makes the trainees learn and the teaching effective during the training program (Lopez 2010:116). Adult education principles of learning should be applied using a variety of methods of delivery and involvement with the trainee (Daffron et al. 2015:61). Specific methods of training should be used based on how nurse participants learn best and methods to increase the incidence of learning transfer should also be used. As discussed in earlier dimensions of the Systemic Model of Transfer of Learning, it is obvious that adult learning is influenced by an individual's motivation to learn. The principles of learning have great value for enriching human life in all its spheres and may enhance the transfer of learning. Four basic learning principles to be incorporated during the design and delivery of training programs that influence the transfer of learning are identical elements, general principles, stimulus variability, and conditions of practice (Schneider 2014:69). The consideration of the four principles of learning during training design may maximise the transfer of learning as follows:

- *Identical elements learning principles* are those stimuli and response elements of learning that are similar to the actual training and transfer settings and which

increase the retention of both motor actions and behaviours (Nafukho et al. 2017:331; Schneider 2014:69). Examples during pain management training may include using simulation training to imitate real-life practice such as case studies; games or role-plays; preparing the training surroundings similar to the workplace; practising the tasks the same as at the workplace; and preparing the equipment is the same as used in the workplace (Nafukho et al. 2017:331; Schneider 2014:69; Werner & DeSimone 2012: 80; Daffron & North 2011:52).

- *Teaching through general principles* is when the design of the course content includes theory and general rules that underlie fundamental elements of a concept to be learned rather than a specific skill set for each situation (Schneider 2014:69; Werner & DeSimone 2012:81). Examples during pain management training may be: videos, case studies, tutorials, discussion groups, demonstrations, presentations, handouts, simulation, action learning, role-play in the educational environment, the level of learner centeredness, active engagement with learning material that is applicable to the practice and job requirements as well as the atmosphere in which learning occurs (Nazli et al. 2015:57; Kirwan 2016:9; Botma & MacKenzie 2016:105; Schneider 2014:69).

- The *stimulus variability principle* is described as the learning principle whereby the nurse educator or clinical facilitator employs and engages the trainees in several different practice situations to strengthen their understanding, as suggested by Nafukho et al. (2017:331); Schneider (2014:69); Werner and DeSimone (2012:81); and Daffron and North (2011:52).

- *Various conditions of practice* include decisions by nurse educators or clinical facilitators to use strategies of learning that promote appropriate response at an appropriate time (Nafukho et al. 2017:331; Schneider 2014:69). Examples during pain management training can be to divide training into sections either as a whole or part training; providing feedback, and over-learning which is the process to provide trainees with the opportunity to practice beyond the mastery of a task (Nafukho et al. 2017:331; Schneider 2014:69).

It is vital that the nurse educator or clinical facilitator consider the principles of learning for effective teaching during a training program by determining the sequence of the training content.

2.4.2.2 Sequencing of the training content

Sequencing of the training content is the decision to group and to determine the learning content that is logical and arranged rationally according to learning objectives that will enhance the transfer of learning (Czaja & Sharit 2016:134; Carliner 2015:96). There are nine known approaches to sequence training content, including chronological, topical, whole-to-part, part-to-whole, known-to-unknown, unknown-to known, step-by-step, part-to-part-to-part and general-to-specific sequencing (Alvord 2010:82). For instance, in a pain management training program the first topic or assignment may be designed by (a) using fading prompts or cues, (b) using step by step prompts, and (c) breaking or segmenting down the activities into manageable portions (Allen & Cowdery 2015:321).

The two basic patterns of sequencing strategies that can be applied to enhance the transfer of learning are topical and spiral sequencing (Czaja &Sharit 2016:134). With topical sequencing, a topic or task is taught to some target level of depth of understanding or competence before the subsequent task is initiated (Czaja and Sharit 2016:134). In a pain management training program, the first topic may focus on fundamental concepts of pain before presenting a topic on how to assess pain (Bement & Sluka 2015:146; Bement, St. Marie, Nordstrom, Christensen, Mongoven, Koebner, Fishman & Sluka 2014:452; Fishman, Young, Arwood, Chou, Herr, Murinson, Watt-Watson, Carr, Gordon, Stevens, Bakerjian, Ballantyne, Courtenay, Koebner, Djukic, Koebner, Mongoven, Prasad, Singh, Sluka, St. Marie & Strassels 2013:975).

Within spiral sequencing, the trainees have to master several interrelated tasks by passing through all the tasks until the target level of learning is achieved (Czaja and Sharit 2016:134). In a pain management training program, the fundamental concepts

of pain may be interrelated with how to assess pain (Bement & Sluka 2015:146; Bement et al. 2014:452; Fishman et al. 2013:975).

The literature indicates that educators or clinical facilitators should design the training program by maintaining the following sequence:

1) *Conduct needs assessment* for underdeveloped skills, insufficient knowledge or inappropriate worker attitudes, such as a gap between nurses' knowledge regarding pain assessment and the application of their knowledge to patient care (Joly, Coranado, Bickford, Leider, Alford, Mickeever & Harper 2018:4; Kizza, Muliira, Kohi, Nabirye 2016:23; Ufashingabire, Nsereko, Njunwa & Brysiewicz 2016:21; Aziato & Adejumo 2013:3; Van der Akker, Branch, Gustafson, Nieveen & Plomp 2012:63).

2) *Develop training objectives*, for instance, to enhance nurses' levels of knowledge towards pain assessment and apply what they learn in pain management training programmes (Kizza 2016:26; Ufashingabine et al. 2016:25; Aziato & Adejumo 2013:5; Van der Akker et al. 2012:63).

3) *Design a curriculum* that covers pain management core competencies such as the multidimensional nature of pain, pain assessment and measurement, management of pain, and context of pain management (Herr et al. 2015:317; Doorenbos, Gordon, Tauben, Palisoc, Drangsholt, Lindhorst, Danielson, Spector, Ballweg, Vorvick & Loeser 2013:1534; Van der Akker et al. 2012:63).

4) *Select instructional strategies and training methods* that will enhance the transfer of learning. In this state, in pain management, these may comprise immersive simulation games, questions, demonstrations, role-playing, problem-solving, job aids, positive feedback, focus groups, post-training coaching and action planning, self-paced study, a recorded portion of the lecture (Kaiser et al. 2013:13; Sankaranarayanan & Sindhu 2012:89; Van der Akker et al. 2012:63; Daffron & North 2011:56).

5) *Design an evaluation approach*, for example, effectiveness of pain management training similar to (i) formative evaluation by asking nurses' feedback attending the pain management training to evaluate the education they received, and (ii)

summative evaluation to assess the value the pain management education has to the transfer of learning (Dolin, Deierlein & Evans 2018:54; Griffin 2014:14; Hatzipanagos & Rochon 2012:76; Van der Akker et al. 2012:63).

6) *Conduct the training*, in the case of pain management education to nurses it will be related to core competencies in pain assessment and pain management (Czarnecki & Turner 2018:597; Herr et al. 2015:319; Doorenbos et al. 2013:1536; Fishman et al. 2013:975; Van der Akker et al. 2012:63).

7) *Measure the results of the effectiveness and efficiency of training outcomes*. In this study, it will be pain management content on how much the nurses learned and can apply from what they learned in their nursing areas (Orey 2015:116; Schneider 2014:25; Van der Akker et al. 2012:63).

When designing the training content that will positively influence the transfer of learning, the pain management educator and clinical facilitator should integrate the learning objectives and outcomes into nurses' clinical practice (Beek, Dawson & Whelan 2017:7; Botma & MacKenzie 2016:106; Kim & Callahan 2013:188).

2.4.2.3 Training content

The training content may be defined as the information delivered during continuous education to develop trainees' skills, knowledge, and attitudes related to specific competencies (Janet 2016:36; Manichander 2016:79). Training content in this context is pain management learning that needs to be delivered to nurses. Content such as the fundamental concepts of pain, pain assessment and measurement, management of pain, and the role of the nurses in pain management must be addressed (Herr et al. 2015:319; Doorenbos et al. 2013:1536; Fishman et al. 2013:975). To improve the transfer of learning, the training content should be congruent with work requirements and be recognised as relevant by the trainees (Donovan & Darcy 2011:130; Cartaxo & Simões 2014:0460; Schneider 2014:86). If the training content is relevant and addresses the needs of the trainees, the transfer of learning is maximised (Ma et al. 2018:4; Schneider 2014:87; Daffron et al. 2015:55). To enhance the transfer of learning, the educator or clinical facilitator must have the knowledge and skills to deliver the

training content (Donovan & Darcy 2011:130; Freitas & Silva 2017:311). The educator or clinical facilitator who presents training on pain management must know about pain management, have professional experience in pain management, have knowledge of learning styles and be aware of the teaching approaches that enhance the transfer of learning of pain management competencies to nurses (Sankaranarayanan & Sindhu 2012:88; Donovan & Darcy 2011:130).

The content learned in the training program can further be successfully transferred if the work environment supports the trainees.

2.4.3   Training transfer climate

The training transfer climate is described as the characteristics of the relationship between the work environment and the motivation to transfer learning (Donavan & Darcy 2011:123; Srimannarayana 2016:263; Landy & Conte 2016:277; Qureshi, Bhutto & Memon 2015:106). A favourable or positive training transfer climate is considered multidimensional, as stated by Donavan and Darcy (2011:130), Singh (2017:4), Frasard and Prasuhn (2016:130), Srimannarayana (2016:264), and Daffron and North (2011:4). Some of those dimensions are the following:

- There must be supervisory and managerial support for new skills, such as reinforcing learning on the job.
- Peers or co-workers must support the development of new skills.
- The perceived utility or value outcomes of training must include that it will provide opportunities to apply skills learned in training.
- It must have a career or job utility, referring to planning or exploration by trainees to achieve their learning goals.
- There must be training accountability.
- There must be an opportunity to practice.
- Trainees must be able to perform or use learning at the workplace, an opportunity to use new skills and knowledge.
- There must be intrinsic and extrinsic rewards for using new skills and knowledge, a transfer design, and positive personnel outcomes.

- There should be no adverse personal outcomes but organisational commitment through behaviour, systems and processes.

According to various authors (Ma et al. 2018:4; Govaerts et al. 2017:5; Beek et al. 2017:7; Singh 2017:4; Qureshi, Bhutto & Tunio 2017:361; Frasard & Prasuhn 2016:144; Botma & MacKenzie 2016:105; Bansal & Thakur 2013:54; Lee at al 2014:2846) supervisors or managers should support the trainees who attend training programs with the following:

- Resources and opportunities to apply the learning.
- Encourage trainees to attend trainings, seminars, conferences, discussion forums or presentations; participate in goal-setting activities; champion and reinforce new ideas to influence the transfer of learning.
- Provision of adequate support to trainees to apply learned theory to the specific tasks at the workplace.
- Practice a good communication style about training programs and create times and places to learn at the workplace.

The peers or co-workers should also support the trainees after their training by setting goals, adopting coaching-mentoring relationships, and providing positive feedback and encouragement concerning what was learned in the training (Donovan & Darcy 2011:129; Ma et al. 2018:4; Qureshi et al. 2017:361; Frasard & Prasuhn 2016:129).

The hospital's nursing leadership, for example, the associate executive director of nursing, may contribute by valuing the training programs and putting in place policies that support the empowerment of the competencies of their employees (Donovan and Darcy 2011:129; Snoek & Volman 2014:92; Daffron & North 2011:108; Lee et al. 2014:2846; Bansal & Thakur 2013:53). In two Saudi Arabian teaching hospitals, the associate executive directors of nursing, as well as the director of nursing education, support the pain management training programs. This is evidenced in the Administrative Policy and Procedures (APP) 1430-07 (2017:5), which mandates regular education for nurses.

The transfer climate of training can be enhanced through a workplace with a conducive environment that will promote the transfer of what was learned in the training program.

2.4.4. Workplace environment characteristics

Workplace environment characteristics refer to workplaces that allow trainees to practice new skills acquired during training (Donovan & Darcy 2011:123). The nurses who believe that their work environment is supportive and conducive to learning will demonstrate high performance in learning efforts (Donavan & Darcy 2011:124; Nazli et al. 2015:56). For instance, encouragement and motivation of nurses by supervisors, peers, and co-workers and the organisation to apply what was learned during pain management training will create a supportive and positive work environment (Suleiman et al. 2016:23; Yasin, Nur, Ridzwan, Bekri, Arif, Mahazir & Ashikin 2014:184).

In essence, the Systemic Model of the transfer of learning is significant for this study as nurses who attend training programs for pain management are largely responsible for their learning and applying their knowledge in different nursing units. Other factors to be considered to enhance trainees' ability to apply what they learned after training are the different learning transfer levels.

2.5 LEVELS OF TRANSFER OF LEARNING

Different levels of the transfer of learning are described in the literature. Haskell's taxonomy identified six levels of the transfer of learning, namely, (1) non-specific transfer, (2) application transfer, (3) context transfer, (4) near transfer, (5) far transfer, and (6) displacement or creative transfer (Mishra 2016: 314; Sangster 2016:21); Schneider 2014:54; Kaiser et al. 2013:7). The six levels of the transfer of learning are briefly described below:

2.5.1. Level 1: Non-specific or general transfer

Non-specific transfer implies that all learning is transferred because the mind recalls prior learning, which is applied in a daily work environment (Leberman & MacDonald 2016:29; Mishra 2016:314; Sangster 2016:21; Cox 2013:139). For example, nurses

know what pain assessment is because it is part of what is done during their daily practice.

2.5.2   Level 2: Application transfer

Application transfer refers to the application of knowledge that was learned during a specific learning situation that is similar to a specific work environment (Leberman & MacDonald 2016:29; Sangster 2016:21). An example is when nurses understand what pain assessment is and can assess the pain of patients experiencing pain.

2.5.3   Level 3: Context transfer

Context transfer is described as the application of what one has learned under slightly different situations where the learning situation and the work context are not related to the learning content to be transferred (Sangster 2016:21; Leberman & MacDonald 2016:29; Schneider 2014:55). This is, for example, when nurses who learned about pain assessment and management in clinical settings can use their experience to assess and manage pain in home settings.

2.5.4   Level 4: Near or specific transfer

Near or specific transfer occurs when the knowledge domains and settings from learning situations are highly similar to the work environment (Leberman & MacDonald 2016:29; Sangster 2016:22; Snowman & McCown 2015:373; Schneider 2014:55; Kaiser et al. 2013:28; Cox 2013:139). Nurses who learned skills about assessing pain in a training program are examples of near or specific transfer for someone who has already learned and practised a similar skill to assess pain at the bedside.

2.5.5   Level 5: Far or general transfer

Far or general transfer occurs when applying knowledge and skills to a work context that is entirely different from the original setting of learning situations (Leberman & MacDonald 2016:29; Sangster 2016:22; Snowman & McCown 2015:373; Kaiser et al. 2013:7; Cox 2013:139). For example, nurses who learned about electrical conduction

during physical science studies will be able to connect their understanding of the process of nociception of pain when learning about the physiology of pain.

2.5.6 Level 6: Displacement or creative transfer

Displacement or creative transfer results in the discovery of new concepts because of the interaction of the newly perceived similarity between the new work situation and the old learning situation (Leberman & MacDonald 2016:29; Sangster 2016:22; Schneider 2014:55). In this study context, it can be when a nurse conducted a research study on pain management and created and published new pain models to contribute to the knowledge of pain management.

In addition to the classification of the *levels* of the transfer of learning according to Haskell's taxonomy, it may also be identified by *types* of the transfer of learning.

2.6 TYPES OF TRANSFER OF LEARNING

Depending on the learning situation faced by the learners, the following types of the transfer of learning can be identified: (1) positive transfer, (2) negative transfer, (3) zero transfer, (4) horizontal or lateral transfer, (5) vertical transfer, (6) high road transfer and (7) low road transfer (Hale & Stanney 2015:783; Kaiser et al. 2013:7; Ahmad, Mustafa, Gessler & Spöttle 2013:199). These types of transfer of learning are briefly explained:

2.6.1 Positive transfer

Positive transfer is the desired type of transfer of learning that helps trainees to function effectively as learning from a previous context complements a current context (Babu & Gayathri 2018:102; Blumberg 2014:190; Kaiser et al. 2013:7; Yasin et al. 2014:180; Ahmad, Razzaq, Mustafa, Ahmad, Gessler & Spöttle 2013:201). For example, nurses may learn how to document pain assessment in a new electronic medical record after being accustomed to a different electronic medical record. This means the learning occurred in one context but improves performance in some other context. Contrary to positive transfer, the transfer of learning may be negative.

2.6.2 Negative transfer

Negative transfer is when the prior learning or previous experiences interfere with or impact negatively on learning and transfer in the work situation due to either contrary experiences, expectations, or connotations between the two (Babu & Gayathri 2018:102; Snowman & McCown 2014:372; Kaiser et al. 2013:7). An example can be that of nurses who worked in hospital settings where pain management was not taught or prioritised this may hinder their competencies of pain management when working in hospital settings that prioritise pain management training and practices.

2.6.3 Zero transfer

Zero transfer denotes the fact that the learning or training in one situation does not influence the work situation. This means no transfer effect from the learning situation to the work situation (Babu & Gayathri 2018:102; Snowman & McCown 2015:372), such as when the nurse attended pain management training but still did not demonstrate change or improvement in their usual practices.

2.6.4 Horizontal transfer

Horizontal or lateral transfer resembles learning new skills or performing new tasks in work situations that differ significantly from the original learning situation (Landy & Conte 2016:278; Hale & Stanney 2015:783; Burns & Dobson 2012:346). Nurses might learn from their peers how to assess and manage pain during preceptorship, mentoring, or exchange of information at the workplace. The opposite criterion of horizontal transfer is vertical transfer.

2.6.5 Vertical transfer

Vertical transfer refers to applying previously acquired knowledge and skills from a learning situation in the same product to identical work situations and new knowledge or skills, building hierarchically (Landy & Conte 2016:278; Hale & Stanney 2015:783). In this context, nurses who learned about pain management during their prelicensure

or undergraduate training may be able to manage patients experiencing pain as registered nurses.

2.6.6 High-road transfer

High-road or mindful transfer refers to applying knowledge and skills over longer periods to work situations that look somewhat different from the learning situations (Hale & Stanney 2015:783; Snowman, McCown & Biehler 2012: 357). High-road transfer involves a trainee being able to reflectively think (mindful abstraction) about what was learned and then deliberately abstract from the original context to connect it to the work contexts (Snowman & McCown 2015: 374; Kaiser et al. 2013:7). Nurses who might have learned about electrical conduction during physical science will be able to understand the process of nociception of pain when thinking about the physiology of pain. To achieve high-road transfer, the trainee should be assisted by encouraging cognitive understanding, purposeful and conscious analysis, mindfulness, and application of strategies across disciplines (Hale & Stanney 2015:783; Snowman & McCown 2015: 374; Kaiser et al. 2013:7).

2.6.7 Low-road transfer

Low-road or reflexive transfer refers to a situation in which a previously learned skill or idea is automatically retrieved from memory and applied in a similar current task (Hale & Stanney 2015:783; Snowman & McCown 2015: 374; Snowman et al. 2012: 357; Kaiser et al. 2013:7). In this case, it may apply to nurses working at the bedside who become educators or clinical facilitators of pain management to support other nurses.

Training and learning play a significant role in developing nursing knowledge, skills, and behaviours to apply during care in clinical areas (Almasi, Bavani & Mohammadpour 2018:242), for example, enhancing nurses' "pain management" competencies.

2.7   PAIN MANAGEMENT

Pain management can be defined as the process of providing medical or nursing care that prevents and provides treatment or interventions that alleviate or reduce types of pain disorders for the longest possible time (DeWit & Kumagai 2013:134; Fritz & Chaitow 2011:10; Sun 2011:34; Leifer 2011:160; Fishman, Ballantyne & Rathmell 2010:678; Pillitteri 2010:1125).

An interprofessional consensus summit engaged healthcare experts to categorise core competencies for pain management. Four domains were identified, namely: (1) the multidimensional nature of pain, (2) pain assessment and measurement, (3) management of pain, and (4) the context of pain management (Bement & Sluka 2015:146; Bement et al. 2014:452; Fishman et al. 2013:972). The core competencies serve as foundations for developing comprehensive pain management curricula across all health professionals designed to advance care that effectively responds to pain (Bement & Sluka 2015:146; Bement et al. 2014:452; Fishman et al. 2013:972).

Each of the four domains of the pain management core competencies for nurses are briefly described below:

* 1) The multidimensional nature of pain domain focuses on the concepts and complexity of pain (Fishman et al. 2013:976). In this regard, it is the responsibility of nurses to know the pain and understand its mechanisms (Pickering, Zwakhalen & Kaasalainen 2018:104; Royal College of Nursing (RCN) 2018:29).
* 2) The pain assessment and measurement domain relates to how pain is observed, assessed, and measured (Fishman et al. 2013:976). For example, it is the role of nurses to have knowledge and skills to assess patients' pain accurately and reassess it by using valid and reliable pain scales (Lim, Han, Lee, Lee, Kim, Yun, Park, Park, Choe, Ryoo, Lee, Cho, Zang & Choi 2015:228; Washington & Leaver 2015:226; Nicol, Bavin, Cronin, Rawlings-Anderson, Cole & Hunter 2012:66).
* 3) The Management of pain domain focuses on relieving pain (Bement & Sluka 2015:146). This also illustrates that nurses have a significant role in applying their

knowledge and skills regarding collaborative approaches and effective pain management options for each patient to ensure effective pain management (Ojong, Ojong-Alasia & Nlumanze 2014:316; Van Griensven, Strong & Unruh 2014:4).

- 4) The Context of pain management domain focuses on the role of the clinicians of different professions to apply the competencies of the first three domains and in the context of varied patient populations, settings, and care teams (Bement et al. 2014:452). It is, therefore, the role of the nurse to be competent in knowing the concept of pain, skills in pain assessment, and effective pain management skills depending on the context of the patient's care to be able to care for the patient effectively (Van Griensven et al. 2014:4; Ojong et al. 2014:319).

Within this study context, the core competencies for pain management by nurses will focus on their essential responsibilities in providing comfort to all patients by systematically implementing the steps of the nursing process that comprise (1) Assessment, (2) Diagnosis, (3) Planning, (4) Implementation, (5) Evaluations (acronym, ADPIE), and (6) Documentation (Krau & Overstreet 2017:433; Baird 2016:154; Ackley & Ladwig 2014; Van Griensven et al. 2014:4; Elsevier 2014:162; DeWit & Kumagai 2013:128; DeWit & Williams 2013:52; Registered Nurses' Association of Ontario (RNAO) 2013:7; Thomas 2011:17). The first step in the nursing process is portrayed in terms of "assessment" of pain.

2.7.1   Assessment

Assessment is defined as the initial phase of operation in the nursing process, whereby information available about the individual patient, family, or community is gathered using subjective or objective data (Black 2017:219; Stanhope & Lancaster 2012:424). Another definition of pain assessment is that it is a comprehensive, interactive, systematic, and collaborative process of gathering and synthesising data (symptoms of pain) by involving the patient, the family members, nurses, physicians, and other health professionals (RNAO 2013:7; Dougherty & Lister 2015:10; Song, Eaton, Gordon, Hoyle & Doorenbos 2015:461; DeWit & O'Neil 2014:52; Keogh 2012:6, Arnstein 2010:64). The data obtained form the basis for the identification and

application of correct individualised pain management. If a patient's primary complaint is pain, the assessment will guide the nurse in assessing the pain (Marx, Walls & Hockberger 2013:36).

Comprehensive pain assessment can be seen as a thorough interview with a patient informed by a detailed investigation of the patient's pain history, a physical examination or diagnostic test, biopsychosocial aspects of the patient's pain experiences, the prudent use of a standardized pain scale and psychometric inventories; clarification of the goals of interventions; and discussing options with the patient and family (Paice 2015:2; Ebert & Kems 2011:47, Vadivelu, Urman & Hines 2011:206); Alexander, Corrigan, Gorski, Hankins & Perucca 2010:376).

Within this context a comprehensive pain assessment that comprises the following steps will be regarded as acceptable: (1) screening of the pain; (2) obtaining the patient's self-report of pain; (3) proxy-reported pain; (4) using systematic pain assessment guide tools for pain history taking; (5) using pain rating assessment tools appropriate for diverse patient populations; (6) conducting a specific physical assessment of a patient with pain (7) observing for physiological indicators of pain; and (8) observing for behavioural indicators of pain (Acton 2013:36; Pasero & McCaffery 2011:123; Ebert & Kems 2011:47; Arnstein 2010:64). Pain screening therefore forms the initial step of pain assessment.

2.7.1.1 Pain screening

Pain screening is defined as the first step that precedes a comprehensive and systematic pain assessment whereby patients who can communicate are asked about the presence or absence of pain (Brown, Edwards & Seaton 2017:55; Moore 2013:102; Registered Nurses' Association of Ontario (RNAO) 2013:19; Ebert & Kems 2011:47; Arnstein 2010:61). The Joint Commission International (JCI), the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI), and Registered Nurses' Association of Ontario (RNAO) recommend that patients' pain should be screened during a healthcare visit, on admission to hospital, after a change in medical status, each time

vital signs are measured, and before, during and after an invasive procedure (JCI 2017:91; CBAHI 2015:66; RNAO 2013:20).

If pain is present during screening by the nurses, then they will proceed with a comprehensive and systemic assessment of the patient's pain experience using an appropriate pain scale (JCI 2017:99; CBAHI 2015:67; RNAO 2013:20). For patients who may verbalise their pain, it is essential to obtain a "self-report of pain".

2.7.1.2 Obtaining the patient's self-report of pain

Patients' self-report or subjectivity of pain is defined as what the patients say or verbally indicate about their pain (Van Griensven, Strong & Unruh 2014:26; RNAO 2013:25; Pasero & McCaffery 2011:21). It is considered the only truly direct and most accurate, reliable measure of pain. The subjectivity of pain includes the sensory component and the psychological, cultural, and emotional elements of the experience (Czarnecki & Turner 2018:218). It is deemed to be the "golden standard" for the existence and intensity of pain (Rababa 2017:1; Drake & Williams 2017:10; Hadjistavropoulos, Herr, Prkachin, Craig, Gibson, Lukas & Smith 2014:1220; American Association of Critical-Care Nurses (AACN) Practice Alert 2014:81; Daher, Versloot and Costa 2014:1; Howard and Liossi 2014:1; Nair & Neil 2013:3). The nurse must obtain a self-report of pain from the patient, believe and act on the patient's report of pain, and use pain scales to obtain pain ratings from patients to avoid underestimating their pain (Pasero and McCaffery 2011:15; D'Arcy 2011:42). According to Ebert and Kems (2011:48) and Pasero and McCaffery (2011:21) no objective measures of pain exist, as the sensation of pain is an entirely subjective phenomenon, meaning the nurse must accept a patient's pain history and self-report of pain as the primary source of pain assessment.

The comprehensive key elements of pain assessment that nurses should obtain from a patient's self-report of pain are a description of the quality of pain, the intensity and or severity of the pain, the location of the pain, the duration of the pain, the aggravating and alleviating factors of the pain; the patient's pain goals, thus telling the nurse the

acceptable pain level, previous interventions used, the effects or impact of pain on daily activities, and on the physical, mental, and social wellbeing of the patient (Joint Commission International [JCI] 2017:99; Kisser-Larson 2017:90; Saudi Central Board for Accreditation of Healthcare Institutions [CBAHI] 2015:69; RNAO 2013:20; Ebert & Kems 2011:48; D'Arcy 2011:42; Pasero & McCaffery 2011:50; Vadivelu et al. 2011:371; Arnstein 2010:65). The key elements needed from a patient to conduct a comprehensive pain assessment (Czarnecki & Turner 2018: 218; Burns 2015:320; RNAO 2013:21; D'Arcy 2011:59) are briefly discussed below:

- *Description of pain:* This involves the quality of the pain, referring to the specific physical sensations associated with pain (Czarnecki & Turner 2018:218). The patient must be asked to describe their pain in their own words, such as whether it is aching, stabbing, causing tenderness, tiring, numbing, feeling dull, throbbing, gnawing, burning, deep, shooting, nagging, squeezing, radiating, lancinating, tingling, jolting (as in electrical), causing numbness; creating pressure, cramping, distending, or stretching (Paice 2015:4; Rose 2013:144; D'Arcy 2011:43). The patient's language literacy level should be assessed as patients use different terms according to their ability and if necessary, an interpreter must be involved during the assessment (interview) of the patient (Perry, Potter & Ostendorf 2015:318).

- *The intensity of pain:* The intensity can be assessed by rating the pain using a valid pain self-reporting scale with numbers between 0 and 10 to represent the intensity of the pain, 0 is no pain, and 10 is the worst pain imaginable as the standard metric for pain intensity (Lim et al. 2015:230; Paice 2015:4; Arnstein 2011:65; D'Arcy 2011:43). According to Pasero and McCaffery (2011:86), patients and families should be given an education on how to use a pain rating scale as follows: to show the pain rating scale to the patient and family and explain its primary purpose; to explain the parts of the pain rating scale; to verify that the patient understands the broad concept of pain; to ask the patient to

practice using the pain rating scale with the present pain; to set goals for comfort and functioning or recovery by asking the patients what pain rating would be acceptable.

- *Location of the pain:* The patient must be asked to point to the specific painful area on the body (D'Arcy 2011: 42; Arnstein 2010:66). The site of the patient's pain or discomfort should be inspected for discolouration or swelling and palpated for a change of temperature, an altered sensation, painful area, areas that trigger pain, and range of motion (Perry et al. 2015:319; D'Arcy 2011:42, Arnstein 2010:66). The assessor, or in this context the nurse, should ask about the radiation of pain from the pointed area to another area of the body (Paz & West 2013:20; D'Arcy 2011:42; Pasero & McCaffery 2011:50).

- *The duration of pain:* The patient must be asked about the history of the pain, thus about the onset and pattern of pain over time; how it has changed since then; how long the pain lasts; and to find out whether the pain is continuous, intermittent, pulsatile, chronic or has a breakthrough nature (Nicol et al. 2012:67; D'Arcy 2011:43; Arnstein 2011:66; Vadivelu 2011:58).

- *Aggravating and alleviating factors of pain*: The patient must be asked to describe the factors that make the pain better or worse (Paice 2015:7; Paz & West 2013:20; D'Arcy 2011:44). This will help to refine the nursing diagnosis, care plan, and the interventions needed.

- *The patient's pain goal:* The nurse must ask the patient what level of pain rating would be acceptable or satisfactory to maintain quality of life, thus identifying a pain rating that will exist without interfering with the activities that the patient needs or wishes to perform (Cheatle & Fine 2017:112; Ebert & Kems 2011:49; Pasero & McCaffery 2010:86). For example, the nurse may set the comfort-function goal by working with a patient and identify a pain rating of 3 for ambulation as more acceptable.

- *Previous pain interventions used:* The nurse must ask the patient or family to describe previous pain experiences and methods used to manage

pain effectively and record the patient's response to the interventions (Perry, Hockenberry, Lowdermilk, Wilson 2014:377; Ebert & Kems 2011:48; Haugen & Galura 2011:53).

- *Physical, psychological, social, spiritual, or existential domains of pain and suffering:* The nurse must assess the impact of pain to maintain a patient's quality of life. For example, a patient with chronic or cancer pain may be assessed for (i) the presence of physical pain and its impact on functional activities, such as impaired mobility; (ii) the psychological aspects of pain, such as fear, sadness, depression, and anxiety; and (iv) the social impact of pain such as poor relationships with the family or community (Bruera, Higginson, Von Gunten, Morita 2016:92; Yarbro, Wujcik & Gobel 2014:76; Werth, Jr 2013:31).

Despite the self-report of pain that is deemed to be the golden standard of pain assessment, some patients' conditions create challenges for nurses to obtain self-reported pain, and therefore, "proxy-reported pain" becomes an alternative.

2.7.1.3 Proxy-reported pain

Proxy-reported pain is an alternative to self-report that occurs when caregivers, parents, or family members are involved in reporting pain on behalf of patients who are unable to report their pain (Stone & Walker 2017:72; Hla, Hegarty, Russell, Drake-Brockman & Ramgolam 2014:1127, D'Arcy 2013:19; Moore 2013:132).

Patients who cannot self-report their pain result from communication barriers related to different degrees of cognitive impairment, intellectual disabilities, being comatose, being on the verge of dying, being sedated, being a neonate, being a child intimidated or frightened by the hospital environment preventing them from communicating clearly about their pain as they are not familiar with typical pain behaviours or changes (Weissman-Fogel, Roth, Natan-Raav & Lotan 2015:915; RNAO 2013:26; Pasero & McCaffery 2011:123). Asking the family members to contribute to the pain assessment

implies enquiring about typical behaviour, changes in behaviour, and cognition (Yarbro et al. 2014:74), which then becomes important

2.7.1.4 Systematic pain assessment guide tools for pain history taking

Systematic pain assessment guide tools are condensed mnemonic tools used to guide the nurse to interview the patient when taking pain history during pain assessment (D'Arcy 2011:59). It is recommended to use pain assessment guide tools to help guide nurses through the interview portion of the pain assessment (Urman and Vadivelu 2011:4-1; Arnstein 2010:65; Pasero & McCaffery 2011:50). It is important to use and follow either one of the following frequently used pain assessment guide tools:

- "WILDA" for *words* to describe pain *intensity*, *location*, *duration* and *aggravating* or *alleviating* factors (Rose 2013:144; Alexander et al. 2010:376; Arnstein 2010:71).

- "PQRST" stand for *provocation* and *palliation* of symptoms, *quality* of pain, *region* and *radiation* of pain, *severity* of pain and *timing* (Stefan & Rodriquez-Galindo 2014:144; Urman and Vadivelu 2011:4-1; Chila 2010:260).

- "OPQRSTUV", an adapted pain assessment acronym for the *onset* of pain, *provoking*/*palliating*, *quality*, *region*/*radiation* of pain, *severity* of pain, *timing*/treatment, *understanding*/impact on you and *values* (Cooper & Gosnell 2015:71; RNAO 2013:21).

- "OLD CARTS" is another mnemonic for pain assessment similar to "OPQRST" for *onset* of pain, *location* of pain, *characteristics* of pain, *aggravating* factors of pain, *relieving* factors, *timing* and *severity* (Ballweg, Brown, Vetrosky & Ritsema 2018:396; Burns 2015:320; Quinlan-Colwell & D'Arcy 2012:43).

- "QUESTT", an adapted "QUEST", is specifically for the assessment of children's pain that stands for *questioning* the child/caregiver, *using* pain rating tools, *evaluating* behaviour, *sensitise* parents, *taking* the cause of pain into account, and

"*taking* the cause of pain into account" (Gladston, Emmanuel & Prasad 2016:55; Dolan & Holt 2013:271).

- "COLDSPA" abbreviates the *character*, *onset*, *location*, *duration*, *severity*, *pattern*, and *associated* factors (Weber & Kelly 2014:20; Weber, Kelly & Sprengel 2014:8).

- The "McCaffery Initial Pain Assessment Tool" guide is an interview form that guides the patient or health care professionals in completing an initial assessment of the verbal patient (Forbes & Watt 2016:233; Weber & Kelly 2014:153). It includes diagrams of the human body to help patients locate the pain they experience as well as questions to prompt the patient to describe the location, intensity, constant quality, onset, causes, effects, contributing factors of the pain, other comments, and plan (Rebeiro, Jack, Scully & Wilson 2013:298; Pasero & McCaffery 2011:50).

These pain assessment guide tools are used with pain measurement tools to rate the pain while assessing patients experiencing pain.

2.7.1.5 The use of different pain rating assessment tools

Pain measurement tools are pain scales used to rate patients' pain levels during pain assessment (Roberts, Custalow & Thomsen 2017:21; Pasero & McCaffery 2010:49). Most of the pain rating scales used are commonly categorised into four groups, namely: (1) Unidimensional pain scales; (2) Bidimensional pain scales; (3) Multidimensional pain scales and (4) Impact of pain tools (Teo, Johnson, Pandanaboyana & Windsor 2016:2).

1) *Unidimensional pain tools*: These are pain scales used to assess one aspect of pain, such as the severity of pain (Teo, Johnson, Pandanaboyana & Windsor 2016:2; D'Arcy 2013:24; Weigelt 2012:1624; Urman & Vadivelu 2011:4-3), for example, the visual analogue scale, the numeric rating scale, the verbal descriptor scale, and the Wong-Baker pain scale.

2) *Bidimensional pain tools*: They are pain scales that combine two aspects of pain, such as pain intensity (how much pain hurts) and pain-related interference with activities (how much a patient suffers) (Teo et al. 2016:2). For example, the Shoulder Pain and Disability Index (SPADI) scale was used to assess shoulder pain and dysfunction (Vrouva, Batistaki, Koutsioumpa, Kostopoulos, Stamoulis & Kostopanagiotou 2016:315).

3) *Multidimensional pain tools*: These are pain scales used to assess and provide more complex information about a patient's pain, that is, more than two aspects of pain including affective, sensory, quality and character of pain, satisfaction with pain control, and impact of pain on various indicators (Teo et al. 2016:2; Bruckenthal & Quinlan-Colwell 2012:62; Weigelt 2012:1624; Urman & Vadivelu 2011:4-4; Waldman 2011:359). Examples are the McGill Pain Questionnaire (MPQ) and the Brief Pain Inventory (BPI) (Gregory & Richardson 2014:1; Davies & D'Arcy 2013:24).

4) *Impact of pain tools*: These are pain tools used to evaluate the quality of life (QOL), the level of disability, and the effects of pain on mental and emotional states (Teo et al. 2016:2). An example is the Brief Impact Questionnaire (BPIQ) (D'Arcy 2013:32).

Pain assessment using scales must be used according to patients' age groups, such as neonates, preverbal toddlers, children, and adult patients (Chotolli & Luize 2015:111; Vael & Whitted 2014:302). Clinical conditions must also be taken into account, such as unconscious patients, cognitively impaired, intubated patients, sedated patients, non-verbal patients, elders with advanced dementia and critically ill patients (Upadhyay, Cameron, Murphy & Battistella 2014:367; Weber & Kelly 2013:149). The pain rating assessment tools are based on either self-reporting or observing behaviour (Nair & Neil 2013:3). In this study, the researcher decided to describe pain scales that were frequently reviewed as valid, reliable, and feasible for clinical utility. The rationale

for choosing these pain tools is that there is no consensus regarding which scales are preferable and mandatory (Andersen, Munsters, Vederhus & Gradin 2018:2).

The pain scales used according to the age group and ability of the patients to rate their pain (see Table 2.2) are (1) pain rating assessment tools for patients who can self-report their pain, (2) pain rating assessment tools for patients who cannot self-report their pain, and lastly (3) pain rating assessment tools used for elderly patients with dementia or cognitive impairment. It is important for nurses to use appropriate pain scales consistently and specific to the age group and ability of the patients to rate their pain, as this makes it possible to compare the pain ratings and to minimise confusion for both patients and nurses (Pasero& McCaffery 2011:68).

Table 2.2: Pain rating assessment tools and patient populations to assess

A. Pain rating assessment tools for patients who can self-report the pain	
Population of patients	The pain rating tools used
1.1 Children and adolescents able to verbalise their pain.	Wong-Baker FACES Numerical Rating Scale (NRS) Poker Chip Tool (Pieces of Hurt Tool) Varni-Thompson Paediatric Pain Questionnaires (PPQ)
1.2 Adults able to verbalise their pain.	Revised FACES Pain Rating (FPS-R) Numerical Rating Scale (NRS) Verbal Rating Scale (VRS) Visual Analogue Scale (VAS) Verbal Descriptor Scale (VDS) Pain Questionnaires and dairies: The Brief Pain Inventory (BPI) Long-Form and Short-Form of McGill Pain Questionnaire (LF-MPQ & SF-MPQ)
B. Pain rating assessment tools for patients who cannot self-report the pain	
2.1 Premature and neonates.	Premature Infant Pain Profile (PIPP) Neonatal Infant Pain Scale (NIPS) Crying, Required oxygen, Increased vital signs, Expression, Sleeplessness (CRIES) scale Neonatal Pain, Agitation and Sedation Scale (N-PASS)

2.2 Children and adolescents unable to verbalise their pain.	Face, Leg, Activity, Crying, Consolability (FLACC) The COMFORT-Behaviour pain scale
2.3 Adults unable to verbalise their pain.	Critical Care Pain Observational Tool (CPOT) Behavioural Pain Scale (BPS)
C. Pain rating assessment tools used for elderly patients with dementia or cognitive impairment	
3.1 Elderly patients with dementia or cognitive impairment.	Abbey Pain Scale Checklist of Nonverbal Pain Indicators (CNPI) Doloplus-2 Non-communicative Patient's Assessment Instrument (NOPPAIN) Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) Pain Assessment in Advanced Dementia Scale (PAINAD)

A: Pain rating assessment tools for patients who can self-report the pain

Self-report pain rating assessment tools are used to rate pain intensity, which is only one effective aspect of the patient's pain experience (Lim et al. 2015:226; Nicol et al. 2012:68). The self-report pain scales reviewed in this study are those that are common with high clinical utility, and it is evident that they are highly validated, reliable with feasibility for the criteria of pain assessment. In children and adolescent patients who can self-report their pain, it is recommended to assess pain with the following pain scales:

1) **Wong-Baker FACES pain rating scale (FPS)** is originally for use with children but also validated for use in adults and cognitively impaired populations (Tsui & Suresh 2015:82; Marmo & D'Arcy 2013:37; Pasero & McCaffery 2011:59). The scale consists of six animated smiling happy/sad faces or tears presented with the 0 to 10 metric that includes:(1) face 0 means not hurt; (2) face 1 hurts a little bit; (3) face 2 hurts a little more; (4) face 3 hurts even more; (5) face 4 hurts a whole lot; and (6) face 5 hurts worst to be explained to the patient (Forbes &

Watt 2016:233; Marmo & D'Arcy 2013:37). The patient is asked to choose the face that best describes own pain at that moment (Tsui & Suresh 2015:82; Pasero & McCaffery 2011:66; D'Arcy 2011:78).

2) ***Numerical Rating Scale (NRS)*** is a self-report pain assessment ordinal scale used for cognitively intact adults and children aged seven or more who may self-report pain and have the mathematical skills required for pain rating using the numeric rating scale (Paice 2015:7; Tsui & Suresh 2015:82; Howard & Liossi 2014:2). The scale consists of an 11-point set of numbers from 0 to 10 where 0 means "no pain", and 10 means the "worst possible pain" presented graphically as a horizontal or vertical line (Fell et al. 2018:138; Czarnecki & Turner 2017:223; Ismail, Ghafar, Shamsuddin, Roslan, Kaharuddin& Muhamad 2015:289; D'Arcy 2011:57). Patients must point or mark a number on the scale to indicate their pain levels (Lim et al. 2015:226; Pasero & McCaffery 2011:56; D'Arcy 2011:57).

3) ***The Poker Chip Tool (Pieces of Hurt Tool)*** is a self-report scale used for children of the age group 4-7 years and consists of four red chips that represent pain intensity ("pieces of hurt") without precise quantification (De Freitas, De Castro, Castro & Heineck 2014:816). The child is asked to choose a number of chips that indicate how much pain is experienced from four red poker chips ("pieces of hurt") placed on a flat surface in a horizontal line, with one chip indicating a little hurt and all four chips indicating the most hurt a child could ever have (Thirion, O'Riordan & Stormorken 2015:2; Pillitteri 2014:1120; Nair & Neil 2013:4).

4) For children between 4 and 9 years, their pain can also be assessed using multidimensional questionnaires (RNAO 2013:83). An example of a widely used pain questionnaire is the ***Varni-Thompson Paediatric Pain Questionnaire (PPQ),*** which is a patient self-report and parent perspective pain tool used for comprehensive chronic pain assessment in children aged 5 to18 years (Hochberg, Silman, Smolen, Weinblatt & Weisman 2015:878; McClain &

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Suresh 2011:67; Bruera & Portenoy 2010:137). For example, the nurse may assess a child with juvenile rheumatoid arthritis by completing the questionnaire and asking about pain intensity, location by marking the body diagram on the form, sensory dimension of the pain experience, and affective impact on the daily lives (McClain & Suresh 2011:67; Hochberg et al. 2015:878). It includes a 100 mm horizontal line colour-coded visual analogue rating scale anchored by happy and sad faces for present and worst pain (Hochberg, Silman, Smolen, Weinblatt & Weisman 2015:878; RNAO 2013:83; McClain & Suresh 2011:66; Bruera & Portenoy 2010:137).

Adult patients are commonly assessed using scales such as:

1) **The revised FACES Pain Rating (FPS-R) scale** was adapted from the Wong-Baker FACES scale (FPS) for self-rating and is focused more towards older adults who may not have well-developed verbal skills to explain how their pain symptoms make them feel (Czarnecki & Turner 2017:223; Paice 2015:7). The scale has 0 to 10 metrics to represent a visual description of the six oval cartoon adult-like faces, with the absence of smiles and tears arranged with increasing looks of distress from "no pain" to "worst imaginable pain" (Paice 2015:7; Marmo & D'Arcy 2013:37). The patient does not require reading or writing ability and is asked to point the face that best describes own pain (RNAO 2013:81; Pasero & McCaffery 2011:68; D'Arcy 2011:78). The appropriate number that represents the face chosen by the patient will be recorded (Tsui & Suresh 2015:82; Wright 2014:88).

2) **The Verbal Rating Scale (VRS)** is a categorical ordinal linear tool that comprises four or five-point levels of a list of gradually ascending or descending verbal adjectives used by the patient to describe different levels of pain with an assigned number for ease recording (Fell, Lunnen & Rauk 2018:138; Czarnecki & Turner 2017:223; Kliger, Stahl, Haddad, Suzan, Adler & Eisenberg 2015:539). During pain assessment, the patients are asked to select or mark the adjective that best describes their level of pain intensity; the commonly used

descriptors are "no pain," "mild pain," "moderate pain"; and "severe pain" (Fell, Lunnen & Rauk 2018:138; Czarnecki & Turner 2017:223; Kliger, Stahl, Haddad, Suzan, Adler & Eisenberg 2015:539; Karcioglu 2017:e2; Leslie, Johnson, Thomas & Goodwin 2011:476).

3) **The Verbal Descriptor Scale (VDS)** consists of adjectives anchored with a number that reflects the description of pain ranked in order of severity such as no pain, mild pain, moderate pain, severe pain, very severe/extreme pain (Czarnecki & Turner 2017:222; Forbes & Watt 2016:233; D'Arcy 2011:56). Pain is assessed using this scale for the patient that understands the meaning of the words and who is asked to select the word that best describes the present pain experienced (Pasero & McCaffery 2011:94; Arnstein 2010:63). The assessor records the number anchored to the words described by the patient (Czarnecki & Turner 2017:222).

4) **The Visual Analogue Scale (VAS)** is a self-report scale comprising scores from 0–10, or a 10 cm or 100 mm horizontal or vertical line, with verbal descriptive pain anchors whose extremes are labelled as "no pain" at the left endpoint and "worst imaginable/possible pain" or a comparable term at the right endpoint or far-right; is recommended for children of age seven to adults (Tsui & Suresh 2015:82; Fell et al. 2018:138; Paice 2015:6; Nair & Neil 2013:4). The patients are asked to make a mark of their pain intensity on the line between the two endpoints of the pain scale (Pasero & McCaffery 2011:55; Kliger et al. 2015:540; Wariaghli, Allali, Berrada, Idrissi, Hmamouch, Abouqal, Hajjaj-Hassouni 2013:104).

Multidimensional pain scales such as pain diaries and questionnaires are used for assessing pain in speciality adult patient populations suffering from chronic and cancer pain (Davies & D'Arcy 2013:24; Bruckenthal& Quinlan-Colwell2012:62; D'Arcy 2011:63). The following pain diaries and questionnaires scales are mostly used in a clinical setting to assess pain for adult patients:

1) **The Brief Pain Inventory (BPI)** is a 16-item self-administered validated questionnaire that may be completed by the assessor used to assess pain in cancer patients (Forbes & Watt 2016:233; Karcioglu 2017:e2; Marmo & D'Arcy 2013:39). The BPI scale consists of questions used to gather information about pain severity using a numeric rating scale of 0 to 10 to rate the pain at its worst and least for the past 24 hours, impact or degree of interference of pain on daily function, location of pain, pain medications and amount of relief in the past 24 hours or the past week from current pain management (RNAO 2013:82; Bruckenthal& Quinlan-Colwell2012:62; Kibel 2012:507; D'Arcy 2011:66; Pasero & McCaffery 2011:52).

2) **The Long Form of McGill Pain Questionnaire (LF-MPQ)** is a self-report measure developed by Melzack 1975, that comprises 78 pain descriptors used to assess pain in the four major domains of pain: (1) sensory in terms of time, space, pressure, heat, and brightness, (2) affective in terms of tension, fear, and autonomic properties, (3) evaluative and (4) miscellaneous sensory (Boyle, Boerresen & Jang 2015:797; Ferreira, De Andrade & Teixeira 2013:211). To assess pain, the pain rating index (PRI) is extracted using the sum of the rank values of the words chosen by the patient to obtain a score separately for the sensory, affective, evaluative, and miscellaneous words, and provide a sum total score ranging from 0 to 78 (Benuto & Leany 2015:268; Marmo & D' Arcy 2013:39; Turk & Melzack 2011:47; Urman and Vadivelu 2011:40-2).

3) **The Short Form of McGill Pain Questionnaire (SF-MPQ)** is a shorter version of the Long Form of McGill Pain Questionnaire, and its main components consist of 15 descriptors of pain divided into two subscales: (1) Sensory subscale consists of 11 descriptors, and (2) Affective subscale consists of 4 descriptors (Benuto & Leany 2015:268). Each descriptor is ranked on an intensity scale of 0 = none, 1 = mild, 2 = moderate, and 3 = severe (Waldman 2011:197). The tool also contains a visual analogue scale (VAS) and a Present Pain Intensity scale (PPI) (D'Arcy 2011:65; Waldman 2011:197).

B: Pain rating assessment tools for patients who cannot self-report the pain

In premature babies and neonates, some of the best-known pain scales used to assess pain are:

1) *The Premature Infant Pain Profile (PIPP) scale* is best known and used to measure behavioural expression of pain in ventilated premature neonates of gestational age between 28 and 38 weeks (Andersen et al. 2018:2; Yaripoor, Khalili, Joobakhsh, Talebiyanpour & Almasi 2016:42). Pain is assessed using seven behavioural indicators of pain that includes: three behavioural changes (facial actions: brow bulge, eye squeeze, and nasolabial furrow); two physiological (heart rate and oxygen) indicators; and two contextual (gestational age and behavioural state) (Desai, Nanavati, Jasani & Kabra 2017:288; Emergency Nurses Association [ENA] 2013:122). Each indicator is scored on a 4-point scale consisting of scoring points of 0, 1, 2, or 3. Scores are summed across the seven indicators with a maximum of 21 points, thus a total of 21/21 (Marko & Dickerson 2017:40; Yaripoor, Khalili, Joonbakhsh, Talebiyanpour & Almasi 2016:42).

2) *The Neonatal Infant Pain Scale (NIPS)* measures pain behavioural cues in full-term and preterm infants and consists of six behavioural indicators that include: (1) facial expressions; (2) cry; (3) breathing patterns; (4) arms; (5) legs; (6) and state of arousal by taking pain measurement before, during and after a painful procedure and scored in one-minute intervals (Andersen et al. 2018:2; Yaripoor et al. 2016:42; James, Nelson & Ashwill 2013:70). Each item is scored on a 2-point scale, scoring points of 0 and 1, except for the cry indicator, which is scored on a 3-point scale scoring of 0, 1, or 2. The summed scores of all six indicators are a maximum of ten points; thus, they are 10/10 (Andersen et al. 2018:2; Marko & Dickerson 2017:28; RNAO 2013:89; Gardener, Carter, Enzman-Hines & Hernandez 2011:240).

3) ***The "Crying, Required oxygen, Increased vital signs, Expression, Sleep-
lessness" (CRIES) scale.*** CRIES is observer-rated, which means an assessor
observes to recognise, note, rate, and report the behaviours as described by
Kulshrestha and Bajwa (2021:102) pain assessment tool used in neonates ex-
periencing pain, specifically pain responses in the postoperative period (Beh-
rens & Beinert 2014:51; Leifer 2013:286). The tool is used to observe and rate
three behavioural and two physiological categories based on the CRIES acro-
nym that includes: (1) crying due to pain characterised by a high-pitched cry;
(2) requires oxygen for saturation less than 95%; (3) increased vital signs' val-
ues of heart rate and mean blood pressure; (4) expression of grimace on the
face due to pain; (5) sleeplessness related to the hour preceding the recorded
score (Malakian, Dehdashtiyan, Aramesh, Aletayeb & Ghazanfari 2017:6881;
Andersen et al. 2018:2; Marko and Dickerson 2017:26; Leifer 2013:286). Each
item is scored on a 3-point scale scoring 0, 1, or 2, thus: (1) crying is zero points
for no crying and crying that is not high pitched, one point if is high-pitched cry
consolable, or two points if it is high-pitched cry inconsolable; (2) requires oxy-
gen for saturation less than 95% is zero point if when no change in oxygenation
is noted and no supplemental oxygen required, one point if less or equal to 30%
of oxygen is required, or two points if more than 30% of oxygen is required; (3)
increased vital signs' values of heart rate and mean blood pressure is zero point
if the values are less than or equal to baseline, one point if the values increase
by less than or equal to 20%, or two points if values increase more than 20%;
(4) expression of grimace on the face is zero point if no grimace present, one
point if grimace alone and two points if a child has been awake constantly
(Marko and Dickerson 2017:24; Pillitteri 2014:1120; Fishman, Ballantyne &
Rathmell 2010:682). The point values are added from all assessment catego-
ries ranging the scores from 0 to 10; thus, the maximum total score is 10/10
(Malakian et al. 2017:6881; Andersen et al. 2018:2; Marko and Dickerson
2017:26; Pillitteri 2014:1120).

4) ***The Neonatal Pain, Agitation and Sedation Scale (N-PASS)*** was developed to measure pain in term and preterm infants who are experiencing prolonged postoperative pain and or pain during mechanical ventilation (Desai et al. 2017:292; Hall & Anand 2014:897; Leifer 2013:286). N-PASS consists of five items to assess: (1) crying/irritability; (2) behavioural state; (3) facial expression; (4) extremities/tone, vital signs such as heart rate, respiratory rate, blood pressure; (5) and oxygen saturation graded 0, 1 or 2 for pain/agitation, and 0, -1, or -2 for sedation (Hummel 2017:175; Marko & Dickerson 2017:30; Oakes 2011:28). A score greater than +3 indicates pain, and a score of more than -3 indicates sedation (Desai et al. 2017:289; Hummel 2017:175).

Children and adolescents who cannot verbalise their pain are assessed with the following behavioural pain measurement scales:

5) **The *FLACC (Face, Leg, Activity, Crying, Consolability) Scale*** is a behavioural scale used to assess pain in patients with challenges of self-reporting that include children in the intensive care unit, preverbal children, children with cognitive impairment, pediatric postoperative pain, and critically ill intubated adults (Varndell, Fry & Elliot 2016:11; Vael & Whitted 2014:302; Coté, Lerman & Anderson 2013:913; Nair & Neil 2013:4). FLACC scale incorporates five behavioural categories to assess pain that comprises: (1) face; (2) legs; (3) activity; (4) crying and (5) consolability (Hummel 2017:177; Marko & Dickerson 2017:44). Each item is scored on 3-point scale scoring points of 0, 1, 2 scores which are summed across the five items with a total of 10/10 score (Hummel 2017:177; Marko & Dickerson 2017:44; McGuire, Kaiser, Haisfield-Wolfe & Iyamu 2016:6).

6) ***The COMFORT-Behaviour pain scale (COMFORT-B)*** is an observer-rated measure derived from the original COMFORT scale and is used with critically ill children ages 0 to 18 years for assessment of pain and sedation in intubated and ventilated children in intensive care environments (Hockenberry & Wilson 2018:145; Andersen et al. 2018:2; Hughes, Breatnach, van Dijk, Magner & Paul

2014:A534; Carter & Simons 2014:100; Nair & Neil 2013:4). The COMFORT-B scale consists of six behavioural items and items of ventilation to be indicative of pain and distress that includes: (1) alertness; (2) calmness or agitation; (3) respiratory response/distress (in ventilated patients); (4) crying (in a non-ventilated child); (5) physical movement; (6) muscle tone; (7) and facial tension; (Carter & Simons 2014:100; Hughes et al. 2014:3; Coté et al. 2013:913; Edwards & Coyne 2013:94). Each dimension is scored on a Likert scale from 1 to 5, and the scores are added to yield a measure of sedation and pain (Coté et al. 2013:913; Nair & Neil 2013:4). The sum of scores varies from 6 to 30 to indicate a patient in pain and the maximum total is 35/35 (Edwards & Coyne 2013:94).

In adult patients who cannot verbalise their pain, the following pain scale may be used to rate the pain:

1) **Critical Care Pain Observational Tool (CPOT)** is used to assess and manage pain in adult non-conscious patients, critically ill ventilated or non-ventilated in intensive care units (Damico, Cazzaniga, Murano, Nattino & Molin 2016:259; McGuire et al. 2016:5; Storsveen & Hall-Lord 2016:3; Asadi-Noghabi, Gholizadeh, Zolfaghan, Mehran & Sohrabi 2015:277; Stites 2013:73; Pasero & McCaffery 2011:144). The scale measures a patient's pain level by observing four behavioural categories, namely: (1) facial expressions, (2) body movements, (3) muscle tension, and (4) compliance with the ventilator for ventilated patients and or vocalisation for those who are not ventilated or extubated patients (D'Arcy 2013:53; D'Arcy 2011:76; Pasero and McCaffery 2011:145). Each domain has three behaviours which are scored on a 3-point scale of 0, 1 or 2 for a possible total score ranging from 0 (no pain) to 8 (maximum pain), that is an 8/8 total score (Damico et al. 2016:259; Asadi-Noghabi et al. 2015:277; D'Arcy 2013:53; Rose, Haslam, Dale, Knechtel & McGillion 2013:247; RNAO 2013:94).

2) ***The Behavioural Pain Scale (BPS)*** is the scale used for assessing pain in uncommunicative, critically ill, sedated, and intubated intensive care unit patients (Damico et al. 2016:257; McGuire et al. 2016:3; Paice 2015:7). The scale is used to evaluate three behavioural domains that include: (1) facial expressions; (2) upper limb movements; (3) and compliance with mechanical ventilation as behavioural indicators of pain (Suzuki 2017:2; D'Arcy 2013: 55; RNAO 2013:93; Stites 2013:72). Each domain of the scale is scored on a point 4 scale scoring of 1, 2, 3, or 4; scores are summed across three domains with a maximum total score of 12 points, that is 12/12 (D'Arcy 2011:75; Pasero and McCaffery 2011:146).

C: Pain rating assessment tool used for elderly patients with dementia or cognitive impairment

Elderly patients with cognitive impairment or dementia are characterised by memory loss, personality changes, and loss of other functions such as judgement, abstract thinking, and language skills, resulting in barriers to pain assessment due to imprecise verbalisation of their pain (Lichtner, Dowding, Esterhuizen, Closs, Long, Corbett & Briggs 2014:2; Miller 2012:112). Observational pain assessment scales are used to assess pain in elderly patients with cognitive impairment or dementia (Malara, De Biase, Bettarini, Ceravolo, Di Cello, Garo, Praino, Settembrini, Sgrò, Spadea & Rispoli 2016:1224; Hadjistavropoulos et al. 2014:1217; Takai, Yamamoto-Mitani, Chiba & Kato 2014:440; Takai, Yamamoto-Mitani, Ko & Heilemann 2014:237).

The best-known observational pain assessment scales used to assess pain are (1) Abbey pain scale, (2) the Checklist of Nonverbal Pain Indicators (CNPI)*,* (3) Doloplus-2, (4) Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC), (5) the Non-communicative Patient's Assessment Instrument (NOP-PAIN); and (6) Pain Assessment in Advanced Dementia Scale (PAINAD)(Rizzo 2018:636; Corbett, Achterberg, Husebo, Lobbezoo, De Vet, Kunz, Strand, Constantinou, Tudose, Kappesser, De Waal & Latenbacher 2014:6; Hadjistavropoulos et al.

2014:1219; Lichtner et al. 2014:5; Yarbro, Wujcik & Gobel 2014:74; Tuck & Melzack 2011:269). Firstly, the Abbey pain scale and its use to assess pain is briefly described.

1) The **Abbey Pain Scale (ABBEY)** contains six items that measure acute, chronic and acute-on-chronic pain intensity in people with late-stage dementia (Rizzo 2018:636; Paice 2015:12; Pickering & Gibson 2015:106). The six behavioural items used to rate pain intensity are (1) facial expression, (2) change in body language, (3) vocalisation, (4) behavioural change, (5) physiological change, and (6) physical change (Hadjistavropoulos et al. 2014:1220; Takai et al. 2014:239; Pasero & McCaffery 2011:141; Tuck & Melzack 2011:269). Each behavioural item is evaluated on a 4-point scale (absent = 0, mild = 1, moderate = 2, severe = 3, and the scores are added to provide a total assessment of pain intensity ranging from "no pain" (total score is 0–2), "mild pain" (total score 3–7), "moderate pain" (total score is 8–13) to "severe pain" (total score is more than 14) and the maximum total score is 24/24 (Atee, Hoti, Parsons & Hughes 2017:139; Tuck & Melzack 2011:269).

2) **The Checklist of Nonverbal Pain Indicators (CNPI)** measures pain behaviours in cognitively impaired older adults unable to validate the presence of pain or quantify pain by self-report methods (McGuire et al. 2016:4; D'Arcy 2013:51; Miller 2012:112). CNPI comprises an observation list of six pain behavioural items that include (1) non-verbal vocalisations, (2) facial grimacing or wincing, (3) bracing, (4) rubbing, (5) rest-lessness, and (6) vocal complaints (Lichtner et al. 2014:10; D'Arcy 2013:51; Pasero & McCaffery 2011:128). Each item is scored on a dichotomous scale (1 = present, 0 = not present), both at rest and on movement, scoring from 0 to 6 points for each situation and a combined total of 12 points. Thus, the highest score is 12/12 (Paice 2015:13; Lichtner et al. 2014:10; D'Arcy 2013:51).

3) The **Doloplus-2** is a comprehensive multidimensional pain assessment scale for assessing pain in nonverbal older adults with cognitive impairment (Rostad, Utne, Grov, Puts & Halvorsrud 2017:26). The tool is based on behaviour change with three subscale dimensions that consist of 10 items: (1) two psychomotor reactions (washing and dressing, mobility), (2) five somatic reactions, (protection of sore areas, sleep

pattern, somatic complaints, protective body postures adopted at rest, and expression); (3) and three psychosocial reactions (problem behaviour, social life, and communication) items (Rizzo 2018:636; Rostad et al. 2017:26; Hadjistavropoulos 2014:1220; Pasero & McCaffery 2011:141). Each item is scored on a 4-point scale scoring 0, 1, 2, or 3, and the total score of 10 items ranges from 0 to 30 (Rostad et al. 2017:2; Fry, Arendts & Chenoweth 2016:1282).

4) The ***Non-communicative Patient's Pain Assessment Instrument (NOPPAIN)*** is based on proxy reports of pain intensity in demented and cognitively impaired patients (Macintyre & Schug 2015:20; Yarbro et al. 2014:74; Pasero & McCaffery 2011:142). NOPPAIN is composed of four main sections for assessing pain behaviour in demented and non-communicative patients that are: (1) observed daily activities, (2) information about assessing the presence or absence of six pain behaviours, (i) facial expressions, (ii) pain-related words, (iii) rubbing, (iv) bracing, (v) pain noises, and (vi) restlessness), (3) pain location, and (4) pain behaviours observed and pain intensity scored using a pain thermometer (Hadjistavropoulos 2014:1220; Pasero & McCaffery 2011:142).

5) The ***Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC)*** uses direct observation and familiar caregiver information to assess both common and uncommon pain behaviours (Pace, Treloar & Scott 2011:92; Pasero & McCaffery 2011:130). PACSLAC involves observation of 60 items that include behaviour during movement, eating and sleeping as well as mood and changes in social interactions and are divided into four subscale items that are: (1) facial expressions, (2) activity or body movements, (3) social or personality or mood and (4) physiological or eating or sleeping or vocal (Rizzo 2018:638; Hadjistavropoulos 2014:1221; Miller 2012:113). The nurse has to indicate with a checkmark which items on the PACSLAC occurred during the period of interest. The patient must be observed over time to enable observation of often subtle changes in behaviour, generate a total pain score and sum all subscale totals (Hadjistavropoulos 2014:1221; Miller 2012:113; Pasero & McCaffery 2011:130).

6) The **Pain Assessment in Advanced Dementia Scale (PAINAD)** is used to assess pain in patients with advanced moderate to severe dementia who cannot verbally communicate (D'Arcy 2013:63; Guccione, Avers & Wong 2011:402). PAINAID consist of 5 behavioural categorical items that include: (1) breathing; (2) negative vocalisation; (3) facial expression;(4) body language; (5) consolability with three response modalities (Bryant & Nix 2016:391; Fry et al. 2016:1282; Pasero & McCaffery 2011:128). Each of the five behavioural domains is scored from 0 to 2 with a range of total score of 0 to 10; the maximum score is 10/10, and the nurse has to observe the patient for 5 minutes (Fry et al. 2016:1282; Malara et al. 2016:1223; Varndell et al. 2016:11).

The interview about the patient's pain history should be accompanied by a general physical assessment followed by a specific physical assessment of the painful region or area (Waldman 2011:42; Urman & Vadivelu 2011:4-6; Arnstein 2010:70; Nagelhout & Plaus 2010:1243).

2.7.1.6 Specific physical assessment of a patient with pain

Yarbro et al. (2014:76) state that physical assessment includes a head-to-toe examination, and the assessor should observe the patient and identify overt signs of pain. Haanpää (2014:203), Yarbro et al. (2014:76), Benson, Raja, Fishman, Liu and Cohen (2011:22), Smith (2013:22), Vadivelu et al. (2011:62), Urman & Vadivelu (2911:4-6), and Arnstein (2010:70) add that a comprehensive pain assessment includes the specific physical assessment of the painful site that consists of the use of subsequent assessment techniques such as:

1. *Inspection* of the painful lesion, including skin abnormalities and colour changes, muscle changes, and presence of oedema.

2. *Gentle palpation* should follow inspection of the affected painful area to observe the changes in pain intensity due to noxious and non-noxious stimuli.

3. *Gentle percussion* and *occasional auscultation* of painful areas similar to a chest, abdomen, or vascular structures.

4. *Range of motion assessment* should be assessed by both passive and active range of movement to assess the severity of pain.

Patients subjectively report their pain during assessments, but if they have challenges with self-reporting, pain may be dependent on proxy reporting of pain.

2.7.1.7 Observations of physiological indicators of pain

The physiologic pain indicators are mostly used when self-reported pain is impossible and cannot be used as one part of complete pain assessment (Swearingen 2016:39, James et al. 2013:321, Arnstein 2010:69). If the patients are unable to report their pain using customary self-report assessment tools or if there is no proxy-reporting of pain, nurses should assume that pain is present by using the physiological indicators of pain (Stannard & Krenzischek 2018:34; Ignatavicius & Workman 2016:33).

During pain assessment, the nurse should also observe any changes such as increased heart rate, increased respiratory rate, elevated blood pressure, desaturation, apnoea, diaphoresis, skin pallor, flushing, cyanosis, constriction or dilatation of pupils, increased intracranial pressure, vomiting (Marko & Dickerson 2017:12; Gladston, Emmanuel & Prasad 2016:56; Howard & Liossi 2014:1, Chen & Chen 2015:105; Arbour & Gélinas 2014:512; Pasero & McCaffery 2011:25, Arnstein 2010:69). Nurses are required to use physiological parameters with caution as very few researchers support vital signs as being relevant indicators of pain since other factors may elevate them or pain may be present without increased vital signs (Stannard & Krenzischek 2018:34; Pasero & McCaffery 2010:28). The rationale for observing physiological indicators of pain is related to the origin and duration of pain that may stimulate the sympathetic nervous system and influence the physiologic responses.

It is also essential that during pain assessment, nurses use behavioural tools to observe patients' behaviours that determine the presence of pain (Stannard & Krenzischek 2018:34; Ignatavicius & Workman 2016:33; Potter, Perry, Stockert & Hall 2013:972).

2.7.1.8 Observations of the behavioural indicators of pain

Behavioural indicators of pain are those behaviours used to determine the presence of pain in patients who cannot communicate their pain and to guide treatment using behavioural tools for pain assessment (Stannard & Krenzischek 2018:35; Fishman et al. 2010:785).

The populations of patients who may be unable to self-report are neonates, infants, preverbal children, adults with cognitive impairment such as nonverbal patients, people with advanced dementia, with intellectual disability, aphasic confused patients, disoriented patients, critically ill or unconscious persons, mechanically ventilated patients and persons who are terminally ill (Marko & Dickerson 2017:21; Baird 2016:154; RNAO 2013:25; Pasero & McCaffery 2011:123; and Arnstein 2010:69). It is extensively recommended that if a person is unable to self-report, one should rely on pain-related behavioural indicators or utilise behavioural pain scales by observing the following: (i) facial expressions, (ii) verbalisations and vocalisations, and (iii) body movements (Baird 2016:154; Hadjistavropoulos et al. 2014:1221; Arbour & Gẻlinas 2014:506; Howard & Liossi 2014:2; RNAO 2013:25; and Pasero & McCaffery 2011:123). These behavioural indicators of pain are discussed below:

- The *facial expressions* acknowledged for pain assessment include: a slight frown, a frightened face, grimacing, a wrinkled forehead, closed or tightened eyes, a distorted expression, rapid blinking, squinting, wincing, mouth opening, brow-raising, brow lowering, cheek raising, eyelids tightening, nose wrinkling, lip corner pulling, chin raising, and lip-puckering, and clenching the teeth (Marko & Dickerson 2017:23; Arbour & Gẻlinas 2014:516; Hadjistavropoulos et al. 2014:1220; Pasero & McCaffery 2011:125).

- The *vocalisations* for pain assessment include sighing, moaning, groaning, grunting, whining, whimpering, crying, screaming, yelling, being verbally abusive, asking for help, or making specific sounds such as gasping or noisily breathing

(Arbour & Gėlinas 2014:512; Hadjistavropoulos et al. 2014:1220; Pasero & McCaffery 2011:125; Arnstein 2010:69).

- The b*ody and limb movements* for pain assessment comprise rigidness, fidgeting, rubbing the hurt body part, increased pacing, floppiness, stiffness, spastic positioning, taking on a fetal position, tenseness, having a rigid body part, gesturing to or touching a part of the body that hurts, protecting a body part, favouring a body part, guarding a part of the body that hurts, moving the head down, holding arms down, clenching fists, shaking or trembling, refusing to move, avoiding certain body positions, curling up, walking with a gait, and undergoing mobility changes such limping (Arbour & Gėlinas 2014:512; Hadjistavropoulos et al. 2014:1220; Pasero & McCaffery 2011:125; Arnstein 2010:69).

2.7.2 Nursing diagnoses

The nursing diagnosis is the description nurses give after completing an assessment whereby they analyze objective and subjective data about the patient and the drug (Black 2017:220; Stanhope & Lancaster 2012:424). According to DeWit and Kumagai (2013:131), the nursing diagnosis for pain is "pain related to" which gives a cause. In addition, Ackley, Ladwig and Makic (2017:3), Asadi-Noghabi, Gholizadeh, Zolfaghari, Mehran and Sohrabi (2015:276), De Wit and O'Neil (2014:50), and Arnstein (2010:89) declare that the nursing pain diagnosis is the step after:

- pain assessment by the nurse's clinical judgement or analysis of information gathered during pain assessment,

- clustering or organising the related information,

- identifying actual or potential problems and

- choosing the appropriate pain nursing strategies that will help implement effective pain management.

Acute and chronic pain are considered two primary nursing diagnoses that describe the pain (White, Duncan & Baumie 2013:121; Silvestri 2012:395). Acute pain may be

related to tissue injury secondary to surgical intervention as evidenced by restlessness, pallor, elevated systolic blood pressure, pulse, and respirations, dilated pupils, abdominal pain, procedural pain, acute postoperative pain, acute incisional pain, cramping, joint pain, perianal pain, and so forth (DeWit & Kumagai 2013:753; White et al. 2013:121; Beevi 2012:340; Haugen & Galura 2011:596; Arnstein 2010:90). Chronic pain may be related to chronic physical and psychological disability, biological, chemical, or physical psychological injuring agents as evidenced by hopelessness, self-care deficit, anxiety, fatigue, deficient knowledge, ineffective coping, ineffective role performance, avoidance of activities, activity intolerance, impaired physical mobility, a disturbed sleep pattern, a disturbed body image, powerlessness, sexual dysfunction, or impaired social interaction (DeWit & Kumagai 2013:753; White et al. 2013:121; Beevi 2012:340; Haugen & Galura 2011:596; Arnstein 2010:90).

Nursing diagnoses should include nurses' observations by clinically judging and involving the patients and family in assessing the impact of pain on how their pain interferes with their activities of daily living (ADLs) and quality of life (QOL). The nurses have to check the repercussions of pain on patients' level of functioning and QOL (Barros & Albuquerque 2014:107). The patients or family members should be asked about the impact of pain on their recovery as pain, mostly chronic pain, may impair the functioning regarding physical, psychological, and social abilities (Washington & Leaver 2015:227; Owen 2014:261; Poretsky & Liao 2013:762; Ebert & Kems 2011:49; Arnstein 2010:67; Bennett 2010:181). The presence of impaired functioning that affects patient's quality of life (QOL) and their activities of daily living (ADLs) to be assessed are:

- The *physical impact* of pain is indicated by a limited ability to perform physical exercises and domestic chores, deterioration, muscle stiffness, difficulty in walking, poor participation in social activities and difficulty in getting up or sitting down, reduced grip strength, fatigue, and disability (Yiengprugsawan & Steptoe 2018:1054; Dueñas, Ojeda, Salazar, Mico & Failde 2016:459; Dziedzic & Hammond 2010:64; Tiran 2010:129).

- The *psychological impact* of pain entails reduced executive functioning (mental processes) due to the focus on their pain, comorbidity with depression, emotional stress, anxiety, agitation, loss of memory, low moods, feelings of frustration, reduced attention, sleep disturbances, and impaired cognitive ability (Gill 2018:88; Dueñas et al. 2016:462; Owen 2014:261; Dziedzic & Hammond 2010:64; Tiran 2010:129).

- The *social impact* of pain, in essence, has subsequent strained social relationships, financial burdens, frequent absenteeism, frequent medical leaves, loss of jobs, early retirement, reduced efficiency, productivity, and ability to carry out social roles as consequences (Barros & Albuquerque 2014:107; Bruckenthal & Quinlan-Colwell 2012:23; Dueñas et al. 2016:462; Bennet 2010:181; Dziedzic & Hammond 2010:64).

Following the assessment of pain, it is important to have a planning phase to act on the identified pain-related problems of the patient.

2.7.3   Planning

The planning phase is defined as the identification of goals and outcomes ("that are objective, realistic, and measurable") that are patient-oriented and provide time frames (Black 2017: 222; Stanhope & Lancaster 2012:424). Planning for pain management in nursing is defined as setting nursing care goals that indicate actions to relieve or control pain (De Wit & Kumagai 2013:131). Ackley et al. (2017:7), Cooney (2016:446), Collins (2015:4), and Arnstein (2010:92) declare that planning is to determine how to relieve or reduce pain by specifying the desired objectives. Patient-centred planning includes:

a) Patients and care providers' realistic and measurable goals to achieve satisfactory pain relief.

b) The expected outcomes for resolution of the problem to enhance comfort and function.

c) Identifying related nursing interventions appropriate to meet comfort, psycho-social and spiritual needs that include drugs, nondrug and environmental interventions.

d) The person responsible for implementing the interventions.

e) Participation of the patient and family members through individually tailored education.

f) Information on treatment options for pain interventions.

The planning that addresses the patient's pain management needs will be implemented to achieve the set goals that will promote comfort for the patient.

2.7.4 Implementation

The implementation phase occurs after a plan of care is developed and is defined as the phase in which nurses follow through on the decided plan of action specific to each patient to intervene in specific patient problems such as pain (Black 2017:225; Stanhope & Lancaster 2012:424). The implementation of nursing actions for pain management includes (1) nonpharmacological and (2) pharmacological interventions as determined by nurses, and a combination of both is often the best-recommended intervention, and (3) patient and family education about pain (Kisser-Larson 2017:90; Cooney 2016:446; Pachana & Laidlaw 2014:885; Svendsen & Bjørk 2014:e19; White et al. 2013:122; Vadivelu et al. 2011:374; Arnstein 2010:96). The non-pharmacological interventions are implemented mainly by nurses and patients as follows:

2.7.4.1 The non-pharmacological pain interventions

The non-pharmacological pain interventions may be defined as those therapies that do not involve administering medicines or any other active substance but can lessen the pain experience and are adjuncts of pharmacological interventions (Gélinas, Arbour, Michaud, Robar & Côté 2015:308; Toth & Moulin 2013:349; Vaajoki 2013:1). The non-pharmacological interventions cannot replace pharmacological treatment in cases of severe and chronic pain (Boxwell 2010:240). Nurses can suggest, implement

or teach nonpharmacological strategies to the patients or family to help decrease a patient's pain to enhance pain relief strategies categorised as (1) conventional medicine, (2) complementary or alternative medicine (CAM), and (3) integrative approaches (Kiser-Larson et al. 2017:91; Saha, Brüning, Barcelona, Büssing, Langhorst, Dobos, Lauche & Cramer 2016:1; Perry et al. 2015:319; D'Arcy 2011:171; Urman & Vadivelu 2011:42-4; Arnstein 2010:151). Non-pharmacological pain interventions improve the quality of life of care available to patients (Hall, Leach, Brosnan & Collins 2017:47).

Conventional medicine for pain relief is recommended as part of the non-pharmacological approach to managing pain, as discussed below.

1) *Conventional medicine for pain relief*

Conventional non-drug therapies for pain relief are methods classified as physical or psychosocial (cognitive or behavioural) modalities (Arnstein 2010:151). (1) *Physical therapies* mainly instructed by nurses to the patient for self-management activities include positioning for comfort, alignment, and healing; good health practices, such as diet, exercises, temperature regulation, having ample sleep; graded activity such as therapeutic exercises; heat and cold compressions, breathing techniques; pacing activities while using proper body mechanics; avoiding pain triggers and transcutaneous electrical nerve stimulation (TENS) (Rizzo 2018:640; Yilmaz, Karakaya, Baydur & Tekin 2018:7; Cooney 2016:446; Hökkä, Kaakinen & Pölkki 2014:3; RNAO 2013:84; Skeel & Khleif 2011:562). (2) *Psychosocial therapies* for pain relief focus on patients' cognitive behaviours. Cognitive-behavioural therapies (CBT) for pain management emphasise the role of thoughts, emotions, and behaviours in influencing pain (Kiser-Larson 2017:91; Cooney 2016:447; Jankovic & Peng 2015:245; Pachana & Laidlaw 2014:890). (i) *Cognitive therapies* teach patients to use specific strategies that act on their thoughts or feelings such as distraction activities, therapeutic humour, distracting conversations that interest the patient, reading, listening to music, relaxation techniques useful for patients with pain, guided imagery techniques, and active coping training (Rizzo 2018:640; Hökkä et al. 2014:3; Ebert & Kerns 2011:454; Vadivelu et

al. 2011:533; Arnstein 2010:152). (ii) *Behavioural approaches* focus on applying changes in the way the patient lives with pain, and these may include operant therapies that reinforce adaptively and extinguish maladaptive pain behaviours, group therapies and work-hardening or functional restoration programs (Hökkä et al. 2014:3; Ebert & Kerns 2011:454; Vadivelu et al. 2011:533; Arnstein 2010:153). Complementary and alternative approaches may also be used as strategies to relieve pain.

2) *Complementary and alternative (CAM) approaches to pain relief*

The term "complementary" relates to medicine used together with mainstream medicine. At the same time, "alternative" refers to medicine that is used in place of conventional or "mainstream" medicine (Bowman, Davis, Ferguson & Taylor 2018:81). Complementary medicine and alternative medicine (CAM) comprehensively apply to several modalities or additional therapies such as natural products, mind, and body used in conjunction with recognised mainstream conventional or medical practices (Hall et al. 2017:51; Hall, Griffiths & McKenna 2015:137; D'Arcy 2011:175; Arnstein 2010:153). Czarnecki and Turner (2018:505) indicate that nurses have historically embraced complementary therapies, but recently, other healthcare professionals have recognised their value for pain management. According to Holliday-Welsh, Gessert and Renier (2018:109), Rizzo (2018:640), Felix, Ferreira, Cruz and Barbosa (2017:7), Hall et al. (2015:140), Vadivelu (2011:3), and Arnstein (2010:154), the current exponential growth of the adopted four domains of complementary pain interventions used are: (1) mind-body medicine (for example, meditation, imagery, prayer, art, music, hypnosis, cognitive-behavioural therapy); (2) biologically-based therapies (for example, herbal supplements, diets, and vitamins); (3) manipulative and body-based practices (for example, massage therapy, chiropractic, osteopathic medicine) and (4) energy therapies (e.g., Reiki, Magnetic therapy, and therapeutic touch).

Alternative pain interventions include homoeopathy, traditional Chinese medicine, acupuncture, acupressure, and naturopathy) (Hall et al. 2015:140; Vadivelu 2011:3; Arnstein 2010:154).

Management of pain in neonates uses complementary interventions such as sucrose prior to a painful procedure, swaddling or facilitated tucking to provide containment, healing touch, Reiki, therapeutic touch, non-nutritive sucking with pacifiers, maternal skin-to-skin or kangaroo care, breastfeeding, reduction in stimuli, calming music, sound, movement, and acupressure (Buonocore & Bellieni 2017:125; Marko & Dickerson 2017:101; Mason 2015:250; RNAO 2013:84; Hall & Anand 2014:898; Gleason & Devaskar 2012:441; Miller 2012:117; Fanaroff 2011:6; Boxwell 2010:240).

3) *Integrative approaches to pain relief*

Integrative medicine is defined as the interventions that utilise a combination of complementary therapies with conventional therapies for comprehensive care that attends to biopsychosocial and spiritual needs, especially when pain is severe or chronic (Saha et al. 2016:1; Hökkä et al. 2014:3; Arnstein 2010:160). Pain relief provided in a comprehensive and integrative manner is an intervention that targets the patient's pain from the domain of the mind (mental), body (physical), spirit, and social interactions (Saha et al. 2016:2; Arnstein 2010:160). Physical (body) therapy is aimed at employing treatment approaches that include reducing pain triggers, massage, self-massage, applying heat or ice, body mechanics, positioning, nutritional supplements, exercises, pacing activities, yoga, sleep hygiene, and cutaneous stimulation (Perry et al. 2015:319; RNAO 2013:86; Arnstein 2010:161). The mental (mind) therapies are approaches that consist of relaxation techniques, imagery, self-hypnosis, pain diary, journal writing, distracting attention, reducing fear, anxiety, stress, sadness, and helplessness, and learning more about one's own pain or pain relief (Perry et al. 2015:319; RNAO 2013:86; Arnstein 2010:162). Spiritual therapy comprises prayer, meditation, self-reflection, meaningful rituals, humour, and energy works (Perry et al. 2015:319; RNAO 2013:86; Arnstein 2010:162). The interventions that target social interactions are functioning at the highest level possible, with improved communication, optimizing family relations, talking about one's stress with others, problem-solving, volunteering, and using support groups (RNAO 2013:86; Arnstein 2010:162).

2.7.4.2 The pharmacological pain interventions

Pharmacological pain interventions are the most common form of pain management relating to the use of pain medications that target the sensory dimension of pain (Vaajoki 2013:1; Boltz 2012:251). Nurses are encouraged to administer the prescribed pain medications in all patient populations and to know that pain medications are chosen based on what is known about each patient's condition, cognitive abilities, age, type of pain, location of pain, duration of pain, and severity of pain (Perry et al. 2015:328; Boltz 2012:251; Arnstein 2010:115). The World Health Organisation (WHO) recommends that nurses know and use pharmacological and non-pharmacological pain interventions and administer analgesics using three-stepped approaches (the analgesic step ladder) for effective pain relief. These are: Step 1 = non-opioids, step 2 = weak opioid analgesics and Step 3 = strong opioids, as recommended by the World Health Organisation; administer analgesics around the clock (ATC) considering half-lives of the analgesics and to anticipate and manage side effects of analgesics as stated by Davies (2012:94) D'Arcy (2011:93), and Arnstein (2010:116). The pharmacological pain interventions depend on three specific types of analgesics widely used for pain relief: (1) Nonopioid analgesics, (2) Opioid analgesics, and (3) Adjuvant analgesics (Perry et al. 2015:328; Pasero & McCaffery 2011:179; Arnstein 2010:122). The administration of these analgesics may be through different routes such as oral, intravenous such as patient-controlled analgesia, intramuscular, neuraxial such as epidural analgesia, and intrathecal, peripheral nerve blocks, and topical applications (Fishman 2012:835; Urman & Vadivelu 2011:21-2).

1) Nonopioids analgesics

Mild to moderate pain (1-3/10 to 4-6/10 pain score) for acute and chronic pain is managed effectively by administering non-opioid analgesics considered as first-line simple analgesics (Step I of the analgesic ladder), and these include (i) acetaminophen (Tylenol) and aspirin (Marko & Dickerson 2017:75; Dagenais & Haldeman 2012:144; Davies 2012:94; Pasero & McCaffery 2011:181; Arnstein 2010:122); (ii) non-steroidal anti-inflammatory drugs (NSAIDs) that inhibit cyclo-oxygenase enzyme (COX), i.e.,

both COX-1 and COX-2, for example, ibuprofen, diclofenac, indomethacin, naproxen, ketorolac, meloxicam and specific COX-2 inhibitors such as celecoxib (Marko & Dickerson 2017:75; Lewis, Bucher, Heitkemper, Harding, Kwong & Roberts 2017:11; Davies 2012:96; D'Arcy 2011:95; Pasero & McCaffery 2011:187; Arnstein 2010:123).

2) *Opioid analgesics*

Step II of the analgesic ladder medications comprises administering the weak opioids used for moderate to severe pain (4-6/10 to 6-10/10 pain score). Common examples are codeine, oxycodone, hydrocodone, tramadol, and tapentadol (Dagenias & Haldeman 2012:159; Fishman 2012:834; D'Arcy 2011:96; Pasero & McCaffery 2011; Arnstein 2010:117). For severe pain (7-10/10 pain score), patients are given strong opioid medications for pain relief (Step III of the analgesic ladder) and frequently used medications are morphine, meperidine, fentanyl, hydromorphone, and methadone (Marko & Dickerson 2017:83; Lewis et al. 2017:113; Stannard, Coupe & Pickering 2013:15; Dagenais & Haldeman 2012:159; Fishman 2012:835; D'Arcy 2011:96).

3) *Adjuvant analgesics*

Adjuvant analgesics or co-analgesics for additive pain relief are medications not classified as pain medications but which have pain-relieving effects as they can provide analgesic effects, opioid-sparing effects, and prevent neuropathic symptoms (D'Arcy 2011:139; Vadivelu et al. 2011:384; Arnstein 2010:147). The adjuncts broadly used are (i) antiepileptics (e.g., gabapentin, carbamazepine, phenobarbital and pregabalin); (ii) antidepressants (e.g., amitriptyline and duloxetine); (iii) skeletal muscle relaxants (cyclobenzaprine and tizanidine and orphenadrine); (iv) antispasmodic (e.g., baclofen); (v) benzodiazepine (e.g., lorazepam and midazolam); (vi) N-Methyl-D-Aspartate (NMDA) antagonists/blockers (e.g., ketamine); (vi) alpha-2 agonists, for example, clonidine and dexmedetomidine or precedex (vii) local anaesthetics, for example, topical analgesia like lidocaine patch 5%, Eutectic mixture of local anaesthetics (EMLA), local infiltration analgesias such as lidocaine, intermittent or continuous infusion of

ropivacaine or bupivacaine by epidural or regional blocks, and intravenous lidocaine (Marko & Dickerson 2017:91; Lewis et al. 2017:117; Fishman 2012:837; D'Arcy 2011:140; Vadivelu 2011:385; Pasero & McCaffery 2011:704; Arnstein 2010:149).

2.7.4.3 Patient and family education about pain management

The responsibility of a nurse in pain management involves patient and family education that helps patients better understand and participate in their care and make well-informed decisions (Joint Commission International [JCI] 2017:173; Kiser-Larson 2017:91; Saudi Central Board for Accreditation of Healthcare Institutions [CBAHI] 2015:94; van Griensven et al. 2014:4). Schaller (2018:14), Kiser-Larson (2017:91), Lewis et al. (2017:124), Pasero and McCaffery (2011:86), and Arnstein (2010:147) recommend that pain management nursing education to patients and family members be considered. This should consist of:

- Patient and family education should be given on how to use pain rating scales.
- The importance of reporting their pain must be stressed.
- Specific instructions must be given on non-pharmacological and pharmacological interventions, and the importance of taking the prescribed pain medications must be stressed.
- The safety issues of keeping pain medications in a secure place to avoid easy access for others, the adverse effects of pain medications, and the need to report them must be emphasised.
- The options for pain management and the right to choose must be explained.
- Pain and its interventions before and after surgery must be explained.
- Educational pamphlets for further instructions must be provided.
- Barriers to effective pain management, such as a fear of addiction, a fear of tolerance, concerns about side effects, fear of injections, and forgetting to take analgesics, must be discussed.

After implementing the pain interventions, evaluating the effectiveness of the nursing interventions applied to optimise the management is essential.

2.7.5   Evaluation

The evaluation phase is the phase that includes monitoring whether patient outcomes, as related to the nursing diagnoses, are met (Stanhope & Lancaster 2012:424). In pain management, evaluation is the step to assess the outcomes and adequacy of the nursing care plan for pain relief measures applied (Kiser-Larson 2017:90; Collins 2015:4; Song et al. 2015:461; White et al. 2013:130; Pasero and McCaffery 2011:102; Arnstein 2010:71). Evaluation is also an action to regularly reassess pain after interventions for effects and appropriateness of the pain interventions and to determine whether the interventions should be modified (Kiser-Larson 2017:90; Collins 2015:4; Macintyre & Schug 2015:19; Song et al. 2015:461; White et al. 2013:130; Pasero and McCaffery 2011:102; Arnstein 2010:71). The core purpose for pain reassessment is to evaluate the progress toward achieving and maintaining the desired pain management goals and outcomes met, level of improvement, patient safety issues, and evidence of any adverse effects (Pasero & McCaffery 102; Arnstein 2010:71). The aim is to evaluate if the patient still verbalises pain and discomfort, requesting analgesics, and rate the pain to the lowest level as compared from at onset of pain by using a pain scale. The widespread risks of adverse effects to observe after administration of analgesics are related to opioids such as sedation, respiratory depression, nausea, vomiting, constipation, confusion, dysphoria, dry mouth, orthostatic hypotension, urinary retention, and pruritus (Cole & LoBiondo-Wood 2014:406; RNAO 2013:86; Stannard et al. 2013:12; D'Arcy 2011:143; 2010:71). Arnstein (2010:71) suggests that during pain reassessment the patient should be requested to rate the pain intensity on the same pain scale used before the intervention and to estimate a per cent reduction in the pain intensity or to describe the amount of relief, for example, no relief = 0%, minimal effect = 10%, some effects = 25%, good effect = 50%, excellent effect = 75% and complete effect = 100%.

All pain management care provided should be "documented" in patients' medical records (Pasero and McCaffery 2011:102).

2.7.6   Documentation

Documentation of pain management should be accurate and should include all measures to control pain through all phases of the nursing process to provide clear communication about patient care (Black 2017:219; Brown et al. 2017:60; Song et al. 2016:461; DeWit and Kumagai 2013:132; RNAO 2013:40; Arnstein 2010:71). The use of electronic medical records and standardisation of pain documentation are recommended as these are more comprehensive, they ensure that related material can be safely saved and promote easy access to the information when needed by other professionals (Wang, Shen, Hong-Jun-Zhang, Li & Ji 2017:650; Pasero & McCaffery 2011:102).

2.8   CONCLUSION

In this chapter, some subsidiary questions which surfaced from the literature review were discussed:

1) What are the available resources for pain assessment?
2) Which characteristics and learning styles of nurses enhance the transfer of pain management competencies?
3) What is the learning content regarding pain assessment and management?
4) How is the transfer of learning climate within the hospitals' nursing care areas?

Based on these questions, the concept of the transfer of learning was explained, including the four dimensions of the Systemic Model of the Transfer of Learning by Donovan and Darcy. Furthermore, the concept of "transfer of learning" was reviewed to describe how the application of learning can be enhanced. Nurses' core competencies for pain management were reviewed as guided by systematically implementing the phases of the nursing process that comprise assessment, diagnosis, planning, implementation, evaluation, and documentation.

Chapter 3 will elaborate on the methodology, data gathering, and interpretation of the research's first, second, and third phases.

CHAPTER THREE: RESEARCH DESIGN AND METHODOL-OGY: PHASE 1, 2 AND 3: METHODOLOGY AND DATA GATHERING

3.1   INTRODUCTION

In Chapter 3, the overarching research design of the explanatory sequential mixed method approach is described, with the latter part of the chapter focussed on Phases 1, 2 and 3, which will address the applicable population, sampling, data gathering technique, validity and reliability, data gathering and ethical aspects, as is illustrated in Table 3.1.

Table 3.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	**Chapter outline**	**Chapter content**
Chapter 1	Overview of the study	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review	Consists of the literature review related to: 1) Systemic Model of Transfer of Learning by Donovan and Darcy, 2) Transfer of learning, and 3) Pain management and tools.
Chapter 3	Research design and methodology	1) Illuminates the overarching research design 2) Phases 1, 2 and 3 (quantitative phases): methodology and 3) data gathering.
Chapter 4	Data analysis and interpretation	Presents the data analysis and interpretation of the findings from Phases 1 to 3.

Chapter 5	Phase 4	Included a description of Phase 4 of the study: a) Literature review on action plan development b) Development of the draft action plan. c)
Chapter 6	Phase 5	Outlines and describes Phase 5 of the study (qualitative phase): a) Methodology b) Validation of the action plan: c) The validated action plan.
Chapter 7	Conclusion, recommendations, and limitations.	Deals with the conclusion, recommendations and limitations of the study.

3.2   RESEARCH PARADIGM

A research paradigm is a set of assumptions about entities of a worldview or framework, epistemological stance, ontological, methodological or system of shared beliefs held by a community of research practice (Holton & Walsh 2017:212; Attri 2023: 86; Cypress 2021:14; Slutskiy 2021:4; Hall 2020:20). There are various commonly cited philosophical paradigms such as positivism, interpretivism, critical research, and pragmatism (Jacobsen 2020:103; Wa-Mbaleka & Rosario 2022:19; Marchiori 2018:278). The underlying philosophical paradigm for this study was based on the pragmatic paradigm.

A pragmatic paradigm is "a philosophical belief system that developed at the start of the 20th century out of the work of Charles Sanders Peirce, William James, John Dewey, and George Hebert Mead, which holds no allegiance to a particular set of rules or theories but rather suggests that different tools may be useful in different research contexts" (Leavy 2022:14; Gray & Grove 2021:76). Pragmatism is defined as a North American philosophical tradition that views reality as characterised by indeterminacy and fluidity and assumes that people are active and creative and that meaning emerges through practical actions to solve problems (Bryan & Charmaz 2019:658).

In contrast to positivism, interpretivism, and the critical approach, pragmatism embraces mixed methods as the third research community that works best for answering research questions (Harris & Muvuka 2023:28; Flick 2022:620). Thus, it is often associated with mixed methods research and assumes that the focus is on the following: the consequences or the outcomes of action that the researcher desires of research, on the primary importance of the question asked rather than the methods, on the use of multiple methods of data collection to inform the problem under study, and thus it is pluralistic and oriented toward "what works" and practice is what is important or "valid" for those people under study (Creswell & Clark 2011:41; Newton, Da Silva & Berry 2020:4 Johnson & Christensen 2019; Polit & Beck 2021:585; Kawachi, Lang & Ricciardi 2020:336; Various 2018:276).

The benefits of applying the pragmatic paradigm and embarking on the integration of quantitative (QUAN) and qualitative (QUAL) approaches enabled this study to address the research questions, value the participants and avoid the limitations of a single approach (Auzer 2017:6; DeCuir-Gunby & Schutz 2017:24; Creswell & Clark 2011:25; Flick 2022:21; Guralnick, Auer & Poce 2022:547; Flynn 2022; 434; Onwuegbuzie & Johnson 2021:2; Tashakkori & Teddlie 2021:322; Stacey 2019:202; Regis 2018:115).

3.3 RESEARCH DESIGN

A research design is defined as all decisions the researcher made in "planning" to provide an overall structure for the procedures to pursue in conducting the research project, including decisions about measurement, sampling, procedures for collecting, analysing, interpreting, and reporting data in research studies (Creswell & Clark 2011:53; Houser 2021:144; Grove & Gray 2018:501; Rentala 2018:260). There are five major approaches to research, namely: (1) quantitative, (2) qualitative, (3) mixed methods research, (4) arts-based research, and (5) community-based participatory research (Leavy 2022:18). The research methods are specific techniques the researcher use to structure a study to select cases, gather and analyse information systematically, and report on results (Leavy 2022;144; Khosrow-Pour, Clarke, Jennex,

Antti, Kame, Lee, Kisielnicki, Gupt, Van Slyk, Wang & Weerakkody 2022:456). A "mixed method research design" was the appropriate approach and beneficial for this study.

3.3.1   Mixed method research (MMR) approach

Mixed method research is defined as the collection and analysis of quantitative (QUAN),"(designed to collect numbers)" and qualitative (QUAL), "(designed to collect words)" data, and then integrating the findings by drawing inferences from both approaches (Gray & Grove 2021:37; DeCuir-Gunby & Schutz 2017:2; Leavy 2017:9; Curry & Nunez-Smith 2015:4; Jokonya 2016:2; Subedi 2016:571).

The basic and primarily used mixed methods designs are (1) convergent parallel designs, (2) explanatory sequential designs, (3) exploratory sequential designs, and (4) embedded designs (DeCuir-Gunby & Schutz 2017:87; Jokonya 2016:3; Creswell 2015:6; Curry & Nunez Smith 2015:292; Creswell & Clark 2011:70; Gavin Ware & Johns 2018:37). The explanatory sequential mixed method design was found appropriate to achieve the study purpose to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

An explanatory sequential mixed-method approach was pursued based on the following core characteristics the study encompasses, as stated by Creswell (2021:25), Creswell (2015:3), and Creswell and Plano (2011:5):

(i)   The collection and analysis of quantitative and qualitative data in response to research questions.
(ii)   The use of rigorous qualitative and quantitative methods.
(iii)   The combination or integration of quantitative and qualitative data using a specifically explanatory sequential mixed-method design and interpretation of this integration.

3.3.1.1 Justification for using mixed-method research approaches

Conducting mixed-method research has advantages as well as challenges. There are different rationales for using mixed-methods approaches. The reasons are related to the advantages associated with mixed-method approaches. The following advantages, as explained by Onwuegbuzie and Johnson (2021:163), DeCuir-Gunby and Schutz (2017:3), and McKim (2017:203), inspired the researcher to utilise a mixed-method approach:

- It permitted the examination of a complex problem, such as an action plan, to enhance the transfer of learning of pain management competencies of nurses within a single study. It enabled the researcher to provide evidence to triangulate or corroborate findings with multiple sources of evidence, such as the quantitative survey data of Phases 1, 2, and 3 that were merged to develop a draft action plan that was validated in the qualitative phase employing the e-Delphi technique.

- The design allowed the researcher to maximize the strengths of both quantitative and qualitative approaches while minimising their weaknesses, as both methods complement each other and allow for a more robust analysis.

- It further allowed for the use of multiple data-gathering instruments or tools. In this study context, questionnaires were used in the quantitative Phases 1, 2, and 3, consisting of closed-ended and open-ended questions for qualitative enhancement. In Phase 5, the e-Delphi technique (qualitative) was used to gather data using an applicable assessment tool to validate the action plan.

The challenges that are well-known when employing mixed-method research and that were challenging in this study were the following:

- The researcher needed to master quantitative and qualitative research methods and the specific skills requirements (Bergin 2018:186). With the thesis supervisor's assistance, the researcher could master and overcome the potential challenge.

- Extensive time, resources and effort for data collection and analysis were required (Cameron & Golenko 2023:255; Gray & Grove 2021:393; Onwuegbuzie & Johnson 2021:163). It was time-consuming to use both quantitative and qualitative approaches together in one study as the researcher needed to develop experience and skills in both methods and still comply with the university deadline to complete the study. The researcher obtained support from the supervisor and the statistician to address these challenges. The researcher worked according to a timetable that compels daily activities and responsibilities. The important rationale for the mixed-method approach for this study was that the qualitative phase was utilised to validate the quantitative findings used as the basis for the draft action plan, thus avoiding the deficiencies of any single approach.

The specific research design adopted was an explanatory sequential mixed method design to assist with developing an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

3.3.1.2 Explanatory Sequential Mixed-Method Design

An explanatory sequential mixed-method design is explicated as a design that begins with a quantitative phase and then conducts a second qualitative phase to explain the quantitative results (Richards, Hemphill & Wright 2023:201; Creswell 2015:38; DeCuir-Gunby & Schutz 2017:86).

In this context, the first phase started with the collection and analysis of quantitative data, which has the priority for addressing the study's objectives, namely:

1) Identify and describe the resources available for pain assessment (Phase 1 and 3, quantitative).
2) Identify and describe nurses' characteristics and learning styles that enhance the transfer of pain management competencies (Phase 2, quantitative).
3) Explore the teaching approaches the clinical facilitators employ during nurses' pain management education (Phase 3, quantitative).

4) Describe the learning content regarding pain assessment and management (Phase 3, quantitative).

5) Describe the transfer of learning climate within the hospitals' nursing care areas (Phase 3, quantitative).

6) Develop an action plan to enhance the transfer of learning of pain management competencies of nurses (Phase 4, merged quantitative Phases 1, 2, and 3; and Phase 5 qualitative).

The data from Phases 1 to 3 were analysed and interpreted, and with the literature review conducted in Phase 4, the data were used to develop the first draft of the action plan.

The e-Delphi technique, a qualitative data-gathering technique, was used in Phase 5 to validate the draft action plan in various rounds until consensus was reached, as suggested by Polit & Beck 2021:236; DeCuir-Gunby and Schutz (2017:86), Leavy (2017:263), Subedi (2016:576), Creswell (2015:37), and Creswell and Clark (2011:71).

The diagrammatic representation and summary of the five-phase explanatory sequential mixed method study are presented in Figure 3.1.

Phase 1 (Chapter 3)	Phase 2 (Chapter 3)	Phase 3 (Chapter 3)	Phase 4 (Chapter 5)	Phase 5 (Chapter 6)
Objective: To identify and describe the resources available to conduct pain assessments	**Objective**: To identify and describe the nurses' characteristics and learning styles that enhance the transfer of pain management competencies	**Objectives:** To: (i) explore the teaching approaches employed by the clinical facilitators during pain management education of nurses; (ii) describe the learning content regarding pain assessment and management; and (iii) describe the transfer of learning climate within the hospitals' nursing care areas.	**Analysed and interpreted data of Phases 1, 2 & 3**	**Objective:** Validate the draft action plan
Design: Quantitative phase	**Design:** Quantitative phase	**Design**: Quantitative phase	**Literature review**	**Design:** Qualitative phase
Population: 1462 Nurses and 47 Clinical facilitators	**Population:**1462 Nurses	**Population:** 47 Clinical facilitators	**Development of a draft action plan.**	**Sample**: A panel of 2 Clinical facilitators and 10 nurses used purposive nonprobability sampling
Sample:483 Nurses and 45 Clinical facilitators used.	**Sample**: 483 Nurses used proportionate stratified sampling	**Sample:**45 Clinical facilitators used proportionate stratified sampling.		**Research technique**: e-Delphi technique for validation of developed draft action plan.
	Research technique: Survey questionnaire.	**Research technique:** Survey questionnaire.		

Phase 1 (Chapter 4)	Phase 2 (Chapter 4)	Phase 3 (Chapter 4)
Data analysis and interpretation	**Data analysis and interpretation**	**Data analysis and interpretation**

Figure 3.1   The phases of the Explanatory Sequential Mixed Method approach

3.4   THE SETTING

A research setting is the specific physical, social and cultural site or location in which the researcher conducts the study that may be natural, partially controlled or highly controlled (Polit & Beck 2021:42; Richards 2021:58; Salmons 2016:90; Grove, Burns & Gray 2013:709).

The Kingdom of Saudi Arabia (KSA), wherein the study was conducted, was founded in 1932 by Ibn Saud and is a sovereign Arab state in Western Asia, also called the Middle East. KSA has a total area of 2,150,000 square kilometres. The country is Western Asia's fifth-largest sovereign state and the second-largest oil producer and exporter. The KSA has 13 regions bordered by Jordan and Iraq to the north, Kuwait to the northeast, Qatar, Bahrain and the United Arab Emirates to the East, Oman to the southeast and Yemen to the south. The Gulf of Aqaba separates the KSA from Israel and Egypt (see Figure 1.2).

This study was conducted in Riyadh, the capital city of KSA, which the Municipality of Riyadh manages. Within the capital city, four teaching hospitals offer nursing programs.

To retain and maintain their practice licences from the Saudi Commission for Health Specialities (SCFHS), all nurses must undergo professional ongoing education and earn the required credits of CME (continuing medical education) hours. One of the opportunities to gain CME credits can be attending pain management workshops.

PHASES 1, 2, AND 3: QUANTITATIVE RESEARCH

Quantitative research was conducted in three phases to achieve the objectives and address the research problem. Quantitative research was decided on due to the advantages as described by Creswell (2015:15):

(i)   Quantitative research provides an opportunity for generalisation and precision. In these phases, the researcher gathered data about resources available to conduct pain assessment in Phases 1 and 3, nurses' characteristics and

learning styles relevant to the enhancement of the transfer of pain management competencies in Phase 2 and teaching approaches employed during pain management education of nurses as well as the learning content regarding pain assessment and management.

(ii) The data obtained in quantitative research can be drawn from closed-ended questions (in this study, questionnaires, see Annexures 4, 5 and 8, were used to gather data).

3.5. POPULATION

A population is defined as a group of elements or individuals, objects, or substances that meet certain criteria for inclusion in a given universe about which the researcher could get information about the phenomenon under research (Ngulube 2021:299; Polit & Beck 2021:260; Leavy 2017:8; Gómez-Galán 2016:29).

3.5.1 Site population

The study was conducted in the Kingdom of Saudi Arabia (KSA), which is divided into 13 regions (refer to Section 1.9.3 for a detailed discussion). Riyadh is the capital city, and within the capital city, there are four teaching hospitals. Due to work permit restrictions, the researcher was only allowed access to two of these teaching hospitals.

The two teaching hospitals, named hospitals A and B, cater to all Ministry of National Guard employees and their families and civilians in need of medical care. The King Saud bin Abdulaziz University for Health Sciences collaborates with these two hospitals to train nursing students. A total number of 47 nursing wards existed in these two hospitals, and they constituted the nurses who participated in this study.

3.5.2 Site sampling

The researcher purposefully selected five nursing care divisions within the two teaching hospitals. A proportional stratified random sample of five nursing care divisions was made (see Table 3.1) as the hospitals did not have equal numbers of wards.

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There were, in total, 19 (nineteen) medical wards, 9 (nine) surgical wards, 8 (eight) paediatric wards, 5 (five) cardiac wards, and 6 (six) oby-gynae wards.

3.5.3. Population of professional registered nurses and clinical facilitators

A total of 1,462 professional registered nurses and 47 clinical facilitators were working in the five nursing care divisions (see Table 3.3, 3.4, and 3.5) of hospitals A and B in the 19 medical wards, nine surgical wards, eight paediatric wards, five cardiac wards, and the six oby-gynae wards.

3.6 SAMPLING

Sampling refers to a process by which a manageable number of individual cases or a sample is selected from a larger population for participation in a study (Ngulube 2021:300; Polit & Beck 2021:261; Leavy 2017:268; Rubin & Babbie 2014:380). Probability sampling, a *proportional stratified random sampling* method, was used to select the sample of registered professional nurses and clinical facilitators (see Table 3.2).

3.6.1   Proportional stratified probability sampling

A probability sampling method is considered the gold standard of sampling where everybody the researcher is interested in has an equal chance of being selected to participate in the study (Messinger & Guadalupe-Diaz 2020:343; Beins 2017:124). A *proportional stratified probability sampling* as described by Privitera (2022:42), Jha (2023:143) and Sharma (2022:260), was used to select the registered nurses and clinical facilitators from the five nursing care divisions.

A *proportionate stratified sampling* is when members of a population are classified into strata (groups), and the number of units from each stratum is directly equivalent to the size of the population in that stratum (Jha 2023:143; Privitera 2022:42; Sharma 2022:260; Polit & Beck 2021:268; Pajo 2017:149)

The reasoning for using a proportional stratified probability sampling method for this study was to recruit samples that were representative of the population to reduce the

potential for human bias, as suggested by Privitera (2022:42), Kumar (2019:157), Pecora (2018:52). All the professional registered nurses and clinical facilitators, according to each of the strata, formed the sampling frame that was provided to the nurse managers who did the sampling, taking into consideration the inclusion criteria (see Section 3.11) as suggested by Privitera (2022:42), Jha (2023:143) and Sharma (2022:260) Having calculated beforehand the stratified proportional random sample sizes in the two hospitals, as suggested by Privitera (2022:42), Jha (2023:143) and Sharma (2022:260) provided a significant justification for using probability sampling in the quantitative Phases 1, 2 and 3 in detail.

The advantages of proportional stratified probability sampling, as highlighted by Hall (2020:103) and Mellenbergh (2019:23), motivated the use of this method, namely:

- It was possible to select many professional registered nurses and clinical facilitators to reduce sampling error and ensure an accurately representative sample of the total population.
- Each professional registered nurse and clinical facilitator of the five nursing care divisions eligible for inclusion had an equal chance to be selected.

3.7   INCLUSION CRITERIA

Inclusion criteria are defined as the specific characteristics that define the eligible study population that the researchers will use to answer their research question (Polit & Beck 2021:261; Patino & Ferreira 2018:84)The inclusion criteria for professional registered nurses and clinical facilitators were:

- 1. Nurses must have attended at least one pain management workshop within the past three years.
- 2. Nurses must have attended in-service pain management training within the past 12 months.
- 3. Clinical facilitators must be responsible for pain management training nurses in the five nursing care divisions.

- 4. Participants who agreed to be interviewed in English and were comfortable with it.

3.8   SAMPLE SIZE

A sample is defined simply as the number of participants (*n*) in a given research study or subsets of a larger population where data are collected to draw conclusions about the population from which it has come (Polit & Beck 2021:261; Paternoster & Bachman 2018:8; Leavy 2017:268; Leedy & Ormrod 2015:389). A total of 1462 professional nurses and 47 clinical facilitators were sampled (see Table 3.2)

The sample size for Phases 1, 2, and 3 was drawn from professional registered nurses and clinical facilitators working in the five nursing care divisions in Hospital A and Hospital B. For each nursing care division, the sample sizes were calculated using Rao Soft to determine a 95% confidence level to ensure the proportional sample size of each stratum (see Table 3.2) (Polit & Beck 2021 268; Mellenbergh 2019:23). A confidence level is the estimated probability that a population parameter lies within a given confidence interval (Dhinu 2021:127; Babbie 2020:206). Moreover, the larger the sample, the less sampling error, and adopting a 95% level of confidence, the study was limited to the margin of error to a 5% confidence interval (Ares & Varela 2018:541)

The samples were drawn from the total population of 1041 professional registered nurses and 32 clinical facilitators in Hospital A, and 421 nurses and 15 clinical facilitators in Hospital B were first stratified into five strata per five nursing divisions.

Table 3.2 indicates the population and the proportional allocation of sample size in each stratum calculated using the Raosoft sample size calculator at a 95% confidence level of each nursing care division.

Table 3.2   Population and Proportional sample sizes

	Medical wards		Surgical wards		Paediatric wards		Cardiac Wards		Oby-gynae wards		Tota	
Nursing care division	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B	Hospital A	Hospital B
Population size of nurses	459	135	282	35	20	216	166	0	114	35	1041	421
Sample size of nurses	210	101	163	33	20	139	117	0	89	33	281	202
Population size of Clinical facilitators	14	5	8	1	1	8	4	0	5	1	32	15
Sample size of Clinical facilitators	14	5	8	1	1	8	4	0	5	1	30	15

3.8.1   Response rates: Phases 1, 2 and 3

Regardless of the intended numbers reflected in Table 3.2, the number of participants who volunteered to participate was less than anticipated in Phases 1 and 2 (see Table 3.3 and Table 3.4).

3.8.1.1 Phase 1

Four hundred and twenty-three questionnaires were distributed to the sample of volunteered professional nurses, and 385 questionnaires (Questionnaire 1, Annexure 4) were received back, with an overall response rate of 91%. This suggests a very good response rate as, according to Flynn (2022:242) and Lohr (2021:Ch 8.8)   a 70%

response rate is considered very good and maintains representativeness. The response rate varied between the different types of nursing wards, as illustrated in Table 3.3.

Table 3.3 Phase 1: Sample size (N = 385) and Response rate

Type of Unit	Number of wards	Number of questionnaires sent out	Number of respondents /Sample size	Response rate %
Medical	19	140	122	87.1%
Surgical	9	163	163	100 %
Paediatric	8	54	45	83.3%
Cardiac	5	34	32	94.1%
Oby-gynae	6	32	23	71.9%
Total	47	423	385	91%

3.8.1.2 Phase 2

384 professional registered nurses out of the 423 who received Questionnaire 2 (see Annexure 5) completed the questionnaires, thus also achieving a good response rate of 90.8%, as was explained (see Section 4.3). The distribution of the respondents within the different strata is illustrated in Table 3.4

Table 3.4 Phase 2: Sample size (N = 384) and Response rate

Type of Unit	Number of wards	Number of questionnaires sent out	Number of respondents	Response rate %
Medical	19	140	122	87.1%
Surgical	9	163	163	100 %
Paediatric	8	54	46	85.2%
Cardiac	5	34	31	91.2%
Oby-gynae	6	32	22	68.8%
Total	47	423	384	90.8%

3.8.1.3 Phase 3

A total of the 47 questionnaires were distributed by the gatekeepers to 47 clinical facilitators, and all were received back, resulting in a 100% response rate (see Table 3.5).

Table 3.5 Phase 3: Sample size (N = 47) and Response rate

Type of Unit	Number of wards	Number of questionnaires send out	Number of respondents	Response rate %
Medical	19	19	19	100%
Surgical	9	9	9	100%
Paediatric	8	9	9	100%
Cardiac	5	4	4	100%
Oby-gynae	6	6	6	100%
Total	47	47	47	100%

3.9   DATA COLLECTION INSTRUMENTS: PHASES 1, 2 AND 3

A research instrument can be defined as a tool used to collect data and measure and assist with the analysis of the responses on the related study variables (Wang 2018:263; Kearney-Nunnery 2016:89; Valencia-Go 2016:48). The questionnaire was the data-gathering technique of choice in Phases 1 to 3.

3.9.1   Questionnaires

Three different questionnaires, a specific one to gather data in each of the three phases, were developed to enable the researcher to gather relevant data that would be useful for developing an action plan to enhance the transfer of learning of pain

management competencies. Questionnaire one (see Annexure 4) was developed to gather data (information about resources available for pain assessment) from registered nurses between 14 December 2019 and 13 March 2020. Questionnaire 2 (see Annexure 5) was developed to gather data from registered nurses about nurses' characteristics and learning styles to enhance the transfer of pain management competencies between 14 December 2019 and 13 March 2020 December. Questionnaire 3 was used to obtain data about resources available to conduct a pain assessment, teaching approaches employed during pain management education of nurses, learning content regarding pain assessment and management and the transfer of learning climate within the hospital nursing care (see Annexure 8) from clinical facilitators between 12 December to 17 March 2020.

The advantages of using questionnaires in research as explained by various authors (Sharma 2022:209; Polit & Beck 2021:235, Ackini & Saunder 2015 363, Zickermann 2014:6) motivated the use of questionnaires:

- Large amounts of data could be collected within three months between 12 December 2019 and 17 March 2020.
- It was affordable as the questionnaires were self-administered, and large numbers of participants were reached easily in a cost-efficient way to distribute all questionnaires to all respondents as the researcher was the sole distributor to those who voluntarily agreed to participate without reward.
- The quality of the data collected was proofed to be valid and reliable as the questionnaires underwent pre-testing that yielded validity and reliability before they were used in the main study (LoBiondo-Wood & Haber 2014:284).
- The privacy and anonymity of respondents were ensured with the use of questionnaires. No personal identifiers such as names, addresses, telephone numbers, or hospital badge numbers were requested to maintain confidentiality with which the respondents answered the questions (Chen &Terken 2022:189)

- The questions in all three questionnaires were practical to participants' daily nursing practice pertaining to pain management, providing uniformity in a pre-determined order and covering the study objectives.
- The respondents could use their own time and space, and it was explained that it would only take an average of 25 minutes to complete. The average time was calculated during pre-testing.

Each questionnaire had the characteristics associated with the research questions and the objectives of this study.

3.9.2   The characteristics of the developed questionnaires

All three questionnaires were developed after a thorough literature review was conducted. The questionnaires were completed in English as the researcher considered the factors of linguistic competency and literacy and because English is the official language amongst all healthcare professionals in the two hospitals.

3.9.2.1 Questionnaire 1:

The questionnaire used in Phase 1 was completed by professional registered nurses to identify the resources available for pain assessment. It encompassed two sections. Section A included only close-ended questions, and Section B consisted of closed-ended questions with one open-ended question.

- Section A: The five close-ended questions focussed on the biographical information of the professional registered nurses.
- Section B: Fourty four "yes" or "no" dichotomous questions were included. All close-ended questions were content-related, identifying whether resources to conduct pain assessments were available. For qualitative enhancement, one open-ended question allowed for any comments (see Annexure 4).

3.9.2.2. Questionnaire 2:

Questionnaire 2, developed for Phase 2, was completed by professional registered nurses to identify their characteristics and learning styles to enhance the transfer of pain management competencies. It encompassed three sections: Sections A and B included only close-ended questions, and Section C included closed-ended questions and one open-ended question.

- Section A: Five close-ended questions about the biographical information of the professional registered nurses.
- Section B: Thirty-four closed-ended questions to rate on a scale of 1 to 10, then ranking from high to low only three statements from the rated questions. The questions were divided into four main questions about trainee characteristics identified to enhance the transfer of learning of pain management competencies.
- Section C: Fourteen closed-ended questions to rate learning styles identified to enhance the transfer of learning of pain management competencies on a scale from 1 to 10, then ranking from high to low only three statements from the rated questions. For qualitative enhancement, one open-ended question allowed for any comments (see Annexure 5).

3.9.2.3. Questionnaire 3:

The questionnaire used in Phase 3 *was* completed by clinical facilitators to identify resources available to conduct a pain assessment, explore the teaching approaches employed by the clinical facilitators during pain management education of nurses, describe the learning content regarding pain assessment and management, and describe the transfer of learning climate within the hospitals' nursing care areas. The questionnaire consisted of five sections with Sections A to D, close-ended questions, and Section E close-ended questions, with one open-ended question (see Annexure 8).

- Section A: Five close-ended questions about the biographical information of the clinical facilitators.
- Section B: Fourty-four questions about resources available for pain assessment (see Annexure 8).
- Section C: Fourteen questions about teaching approaches employed during pain management education of nurses (see Annexure 8).

- Section D: Forty-one questions based on the nursing process to describe learning content regarding pain assessment and management (see Annexure 8). Section E: Eleven questions to describe the transfer of learning climate within the hospital nursing care areas (see Annexure 8).

All three questionnaires were pre-tested and refined where necessary before data gathering commenced (Arai 2022:81; Zahoor 2021:81).

3.10   PRE-TESTING OF THE QUESTIONNAIRES

All questionnaires were pretested following the motivations for pre-testing as described by different authors (Gularso & Okti Purwaningsih 2023:382; Jönsson & Prins. 2019:63; Leavy 2017:264). The pre-tests were done to:

- Verify that respondents understood the wording of each questionnaire in the same way.
- Identify problems such as unclear questions, unfamiliar words, ambiguous syntax and lack of an appropriate answer.
- Consider the practicability of the main study to modify any issue related to questionnaire wording, layout and question sequencing.
- Determine how much time will be spent to complete the questionnaires.

After ethics approval to conduct the study was received from the Health Studies Research Ethics Committee, Department of Health Studies, Unisa REC-012714-039 (see Annexure 6a), REC-240816-052 (see Annexure 6b); and Nursing Services Permission to conduct research (see Annexure 7a), KAIMRC and the Institutional Review Boards

(IRB) approval study number SP 18/036/R (see Annexure 7b); IRB Annual Extension SP 18/036/R (see Annexure 7c); and IRB 6 Months Extension SP 18/036/R (see Annexure 7d) of study hospitals A and B. The pre-tests were done between 16 July to 23 September 2019.

Non-sampled nursing divisions with similar characteristics to those of the main study, namely, emergency care and critical care, were used for pre-testing as recommended (Kline 2023:38, Sharma 2022:401).

To recruit the participants to participate in the pre-tests, a memo, accompanied by the information letter, was e-mailed to the emergency care and critical care unit nurse managers (refer to Annexures 1 & 2). The managers then provided the researcher with a list of names of volunteers. The researcher then followed the process discussed in Section 3.13 to collect the pre-testing data from the conveniently selected volunteers.

After completing the questionnaires, the respondents placed them in sealed boxes provided in each ward, and the researcher fetched them the following day.

The results of the pre-tests of each of the developed questionnaires were as follows.

3.10.1 Questionnaire 1: pre-test (professional nurses' Phase 1):

The pre-test was completed by 99 professional registered nurses in Hospital A and 40 in Hospital B on 23 August 2019 and retested on 07 September 2019.

The researcher worked with the statistician to run reliability statistics for Questionnaire 1. The pre-tested questionnaire was analysed by means of "R Statistical Software" ("R") (refer to Section 3.11 for a detailed discussion). The outcomes of the pre-tests of Questionnaire 1 were assessed by the statistician and supervisor, who gave feedback regarding the items to adapt. The modifications of words and phrases of some questions were done according to the feedback from the pretesting respondents.

The questions in Section B of Questionnaire 1 were the same as in Section B of Questionnaire 3 for assessing resources available for pain assessments. Therefore, the changes implemented for Section B of Questionnaires 1 and 3 were similar. The following changes in Section B of Questionnaires 1 and 3 were implemented, as illustrated in Table 3.6. Changes were implemented before the final data gathering for Phases 1 and 3 commenced.

Table 3.6   Questionnaires 1 and 3 Section B modifications:

Questionnaire Section B	Resources available to conduct a pain assessment	
	Please answer all the questions. Please indicate if you agree or disagree by marking the statement that describes your choice with a tick (√).	Please answer all the questions. Please choose "Yes" or "No" with a tick (√) as your response to ALL statements below that describe your choice.
Item no	Words and phrases for modifications.	Modifications included.
1		
1.1	The use of QUEST (question the child, use pain rating tools, evaluate behaviour, sensitise parents, and take action) approach is used to assess pain.	QUEST (question the child, use pain rating tools, evaluate behaviour, sensitise parents, and take action) approach is available to assess pain.
1.2	The use of WILDA (words to describe pain, intensity, location, duration, and aggravating or alleviating factors) approach is a comprehensive guide tool used to assess pain.	WILDA (words to describe pain, intensity, location, duration, and aggravating or alleviating factors) approach is available to assess pain.
1.3	The use of PQRST (provoking/palliation factors, quality of pain, region of pain, severity and timing) approach is a comprehensive guide tool used to assess pain.	PQRST (provoking/palliation factors, quality of pain, region of pain, severity and timing) approach is available to assess pain.
1.4	The use of OPQRSTUV (onset of pain, provoking/palliating, quality,	OPQRSTUV (onset of pain, provoking/palliating, quality, region/radiation

	region/radiation of pain, severity of pain, timing/treatment, understanding/impact on you and values) approach is a comprehensive to assess pain.	of pain, severity of pain, timing/treatment, understanding/impact on you and values) approach is available to assess pain.
1.5	The use of COLDSPA (character, onset, location, duration, severity, pattern and associated factors) approach is a comprehensive to assess pain.	COLDSPA (character, onset, location, duration, severity, pattern and associated factors) approach is available to assess pain
2.1	The Wong-Baker FACES pain scale is used to rate pain children who can report their pain.	The Wong-Baker FACES pain scale is available to rate pain in children who can report their pain.
2.2	The Numeric Rating Scale (NRS) is used to rate pain in children and adults who can report their pain.	The Numeric Rating Scale (NRS) is available to rate pain in children and adults who can report their pain.
2.3	The Verbal Analogue Scale (VAS) is used to rate pain in adults who can report their pain.	The Verbal Analogue Scale (VAS) is available to rate pain in adults who can report their pain.
2.4	The Verbal Descriptor Scale (VDS) is used to rate pain in adults who can report their pain.	The Verbal Descriptor Scale (VDS) is available to rate pain in adults who can report their pain.
2.5	The Brief Pain Inventory (BPI) is a questionnaire used to assess pain in cancer patients.	The Brief Pain Inventory (BPI) is a questionnaire available to assess pain in cancer patients.
3	Pain rating assessment tools of patients who cannot self-report their pain included below are available in your context to be used to rate pain during pain assessments:	Pain rating assessment tools of patients who cannot self-report their pain included below are available in your context to rate pain during pain assessments:
3.1	A CRIES (Crying, Required oxygen, Increased vital signs, Expressions, Sleeplessness) pain scale is available to be used to rate pain in premature	A CRIES (Crying, Required oxygen, Increased vital signs, Expressions, Sleeplessness) pain scale is available

	and neonates during pain assessments.	to rate pain in premature and neonates during pain assessments.
3.2	The Neonatal Pain, Agitation and Sedation Scale (N-PASS), is pain scale available to be used to rate pain in premature and neonates during pain assessments.	The Neonatal Pain, Agitation and Sedation Scale (N-PASS), is available to rate pain in premature and neonates during pain assessments.
3.3	The Neonatal Infant Pain Scale (NIPS) is pain scale available to be used to rate pain in premature and neonates during pain assessments.	The Neonatal Infant Pain Scale (NIPS) pain scale is available to rate pain in premature and neonates during pain assessments.
3.4	A FLACC (Faces, Legs, Activity, Crying, and Consolability) is behavioural pain scale is available to be used to rate pain for patients who cannot verbalise their pain during pain assessments.	A FLACC (Faces, Legs, Activity, Crying, and Consolability) pain scale is available to rate pain for patients who cannot verbalise their pain during pain assessments.
3.5	The COMFORT-Behaviour pain scale (COMFORT-B) is available to be used to rate pain for patients unable to verbalise their pain during pain assessments.	The COMFORT-Behaviour pain scale (COMFORT-B) is available to rate pain for patients unable to verbalise their pain during pain assessments.
3.6	The Critical Care Pain Observational Tool (CPOT) is used to assess and manage pain in adult non-conscious, critically-ill ventilated or non-ventilated patients in intensive care unit.	The Critical Care Pain Observational Tool (CPOT) is available to assess and manage pain in adult non-conscious, critically-ill ventilated or non-ventilated patients in intensive care unit.
3.7	The Behavioural Pain Scale (BPS) is used for assessing pain in uncommunicative, critically-ill, sedated and intubated patients in intensive care units.	The Behavioural Pain Scale (BPS) is available for assessing pain in uncommunicative, critically-ill, sedated and intubated patients in intensive care units.

4	Pain rating assessment tools used for elderly patients with dementia or cognitive impairment included below are available in your context to be used to rate pain during pain assessment:	Pain rating assessment tools for elderly patients with dementia or cognitive impairment included below are available in your context to rate pain during pain assessment:
4.1	The Abbey Pain Scale (ABBEY) is used to measure acute, chronic and acute-on chronic pain intensity in patients with late-stage dementia.	The Abbey Pain Scale (ABBEY) is available to measure acute, chronic and acute-on chronic pain intensity in patients with late-stage dementia.
4.2	The Checklist on Nonverbal Pain Indicators (CNPI) is used to measure pain behaviours in cognitively impaired older adults.	The Checklist on Nonverbal Pain Indicators (CNPI) is available to measure pain behaviours in cognitively impaired older adults.
4.3	The Pain Assessment in Advanced Dementia Scale (PAINAD) is used to assess pain in patients with advanced moderate to severe dementia.	The Pain Assessment in Advanced Dementia Scale (PAINAD) is available to assess pain in patients with advanced moderate to severe dementia.
4.4	The Non-communicative Patient's Assessment Instrument (NOPPAN) is pain scale used to assess pain in demented and cognitively impaired patients.	The Non-communicative Patient's Assessment Instrument (NOPPAN) pain scale is available to assess pain in demented and cognitively impaired patients.
5	Human resources included below are available in your context to be used to conduct pain assessments:	Human resources included below are available in your context to conduct pain assessments:
6	Patient support as a resource available in your context to be used to conduct pain assessments:	Patient support as a resource included below is available in your context to conduct pain assessments:
7	Publications and electronic resources available in your context to be used to conduct pain assessments:	Publications and electronic resources available in your context to conduct pain assessments:

At the end of the question-naire:		Would you like to add any comments?

3.10.2 Questionnaire 2: Phase 2 (professional nurses)

The same professional registered nurses who completed Questionnaire 1 also pre-tested Questionnaire 2. The pre-testing of data collection of the questionnaire was undertaken on 23 August 2019, and the retest was done on 7 September 2019. Ninety-nine registered nurses working in emergency care and critical care in Hospital A and forty in Hospital B participated in the pre-testing, as was said.

At the end of the pre-testing, the researcher worked with the statistician to run the reliability statistics of Questionnaire 2. The pre-tested Questionnaire 1 was analysed also utilising "R Statistical Software" ("R") (refer to Section 3.11 for a detailed discussion). The outcomes of the pre-tests of Questionnaire 2 were also assessed by the statistician and supervisor, who gave feedback regarding the items to adapt. The modifications of words and phrases of some questions implemented in Sections B and C were done according to the feedback from the pretesting respondents. The questions were adapted, as illustrated in Table 3.7, as follows:

Table 3.7   Questionnaire 2: Modifications

	Words and phrases for modifications	Modifications included
Questionnaire Section B	Characteristics that enhance transfer of learning of pain management competencies.	Characteristics seen to enhance transfer of learning of pain management competencies.
Item no	Words and phrases for modifications.	Modifications included.

Question 1	Which of the following describes the ability you possess to apply what you have learned?	How do you apply what you have learned? Rate yourself on a scale from 1 (this does not describe me at all) to 10 (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩
1.1	Remember the pain management information from past experience.	I remember the pain management information from past experience.
1.2	Learn during pain management learning/training sessions.	I learn during pain management learning/training sessions.
1.3	Concentrate well during pain management learning/training sessions	I concentrate well during pain management learning/training sessions.
1.4	Understand the content of information taught during pain management learning/training sessions. Please motivate your answer:	I understand the content of information taught during pain management learning/training sessions.
1.5	Choose an appropriate pain intervention strategy for every individual patient's pain level.	I choose an appropriate pain intervention strategy for every individual patient's pain level.
1.6	Think rationally to assess a patient experiencing pain. Please motivate your answer:	I think rationally to assess a patient experiencing pain.
1.7	Perform an accurate pain assessment.	I perform an accurate pain assessment.
1.8	Assess pain on time.	I assess pain on time.
1.9	Reassess pain after interventions.	I reassess pain after interventions.
1.10	Apply the knowledge by orientating new colleagues on how to assess and manage pain.	I apply knowledge by orientating new colleagues on how to assess and manage pain.

	Please motivate your answer:	Please choose from High to Low ONLY 3 (three) statements from above questions 1.1 to 1.10 that best describe you. Please write only the statement question number in the box below: 1st ☐ 2nd ☐ 3rd ☐
Questionnaire Section C	Learning styles that enhance transfer of learning of pain management competencies.	Learning styles seen to enhance transfer of learning of pain management competencies.
Item no	Words and phrases for modifications.	Modifications included.
Question 2	Which of the following best describes you as a learner? I am a/an:	How does the following describe you as a learner? Rate yourself on a scale from 1 (this does not describe me at all) to 10 (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩
2.1	Self-directed learner.	Self-directed learner. (Learner taking charge of his/her learning).
2.2	Inquisitive thinking learner.	Inquisitive thinking learner. (Learner who is inclined to ask questions or eager for knowledge).
2.3	Curious thinking learner.	Curious thinking learner. (Learner having desire to learn or know more about something)
2.4	Enthusiastic thinking learner.	Enthusiastic thinking learner. (Learner showing interest or excitement about learning and doing something).

2.5	Truth-seeking learner.	Truth-seeking learner. (Learner who asks challenging questions or asks truth, reasons and evidence about something he/she is learning).
2.6	Organised thinking learner.	Organised thinking learner. (Learner who is able to think carefully to plan about something to learn or do).
2.7	Hard-working in enquiring learner.	Hard-working in enquiring learner. (Leaner putting efforts in doing a lot of work to know about something).
2.8	Self-confidence thinking learner.	Self-confidence thinking learner. (A leaner who believes in oneself and knows about one's own ability to learn and do something)
2.9	Creative learner.	Creative learner. (Learner having courage to try to learn new things, feeling to produce ideas, like to be the first do something and open to share his/her experience with others).
	For every yes answer ticked, please provide a motivation for choosing the specific aspect that describes you as a learner:	Please choose from High to Low ONLY 3 (three) statements from above questions 2.1 to 2.9 that best describe you: Please write only the statement question number in the box below: <table><tr><td>1st</td><td></td></tr><tr><td>2nd</td><td></td></tr><tr><td>3rd</td><td></td></tr></table>
Question 3	Which of the following describes how you are motivated to learn?	How does the following describe how you are motivated to learn? Rate yourself on a scale from 1 (this does not describe me at all) to 10 (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩

3.1	Choosing to attend a pain management training program encourages learning.	Attending pain management training programs motivates me to learn.
3.2	Your initiatives without the assistance of others encourage learning of pain management.	The ability to take initiative without the assistance of others motivates me to learn.
3.3	Learning of pain management skills relevant to working area encourages learning.	Learning of pain management skills relevant to my working area motivates me to learn.
3.4	The efforts that result in learning new knowledge about pain management encourage learning.	Gaining new knowledge about pain management motivates me to learn.
3.5	Knowing the desired goals for learning pain management encourages learning.	Knowing the desired goals for learning pain management motivates me to learn.
3.6	Your own goals about learning pain management encourage learning.	My own goals about knowing pain management motivate me to learn.
	For every yes answer ticked, please provide a motivation for choosing the specific aspect that describes how you are motivated to learn:	Please choose from High to Low ONLY 3 (three) statements from above questions 3.1 to 3.6 that best describe you: Please write only the statement question number in the box below: 1st ☐ 2nd ☐ 3rd ☐
Question 4	Which of the following describes how you are motivated to apply in practice what you have learned?	How does the following describe how you are motivated to apply what you have learned in practice? Rate yourself on a scale from 1 (this does not describe me at all) to 10 (this describes me perfectly).

		①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩
		Please choose from High to Low ONLY 3 (three) statements from above questions 4.1 to 4.5 that best describe you: Please write only the statement question number in the box below: | 1st	
2nd	
3rd		
Section C	Learning style that enhances transfer of learning of pain management competencies	Learning styles seen to enhance transfer of learning of pain management competencies.
Item no	Words and phrases for modifications.	Modifications included.
	Please tick (✓) in the appropriate box how you prefer to learn about pain management.	How does the following describe your learning styles? Rate yourself on a scale from 1 (this does not describe me at all) to 10 (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩
1	By just reading through the information.	By reading through the information.
3	By just listening to the information such as during a lecture.	By listening to the information such as during a lecture.
		Please choose from High to Low ONLY 3 (three) statements from above items 1 to 14 that best describe you: Please

		write only the statement question number in the box below: | 1st	
2nd	
3rd		
---	---	---
	Please add any comment or suggestion on how pain management training can be improved to ensure positive outcomes to you as the learner:	Would you like to add any comments?

3.10.3 Questionnaire 3: Phase 3 (clinical facilitators)

Questionnaire 3, developed for Phase 3, was pre-tested by clinical facilitators who volunteered to participate, as mentioned. The pre-testing of data collection was undertaken on 15 July 2019, and it was retested on 30 July 2019. Three clinical facilitators in Hospital A and two in Hospital B, working in emergency care and critical care, participated in the pre-testing.

At the end of the pre-testing, the researcher worked with the statistician to run the reliability statistics of Questionnaire 3 (see Section 3.11). The pre-tested Questionnaire 3 was also analysed by means of "R Statistical Software" ("R") (refer to Section 3.11 for detailed discussion). The outcomes of the pre-tests of Questionnaire 3 were also assessed by the statistician and supervisor, who gave feedback regarding the items to adapt.

The questions in Section B of Questionnaire 3 were the same questions in Section B in Questionnaire 1. Consequently, the changes applied for both Section Bs of questionnaires 3 and 1 were similar (see Table 3.5). The modifications of words and phrases of some questions implemented in Sections C, D, E and F were also done

according to the feedback from the pretesting respondents. The questions were modified as illustrated in Table 3.8 as follows:

Table 3.8   Questionnaire 3 Sections C, D, E and F: Modifications

Questionnaire Section C	Teaching approaches employed during pain management education of nurses.	
	Words and phrases for modifications.	Modifications included.
	Please answer all the questions. Please indicate if you agree or disagree by marking the statement that describes your choice with a tick (✓).	Please answer all the questions. Please choose "Yes" or "No" with a tick (√) as your response to ALL statements below that describe your choice.
Questionnaire Section D	Learning content regarding pain assessment and management.	
	Words and phrases for modifications.	Modifications included.
	Please answer all the questions. Please indicate if you agree or disagree by marking the statement that describes your choice with a tick (✓).	Please answer all the questions. Please choose "Yes" or "No" with a tick (√) as your response to ALL statements below that describe your choice.
Questionnaire Section E	Transfer of learning climate within the hospital nursing care.	
	Words and phrases for modifications.	Modifications included.
	Please answer all the questions. Please indicate if you agree or disagree by marking the statement that describes your choice with a tick (✓).	Please answer all the questions. Please choose "Yes" or "No" with a tick (√) as your response to ALL statements below that describe your choice.

At the end of Section E		Would you like to add any comments?
	Words and phrases for modifications.	Modifications included.
Questionnaire Section F	Please answer the following question as honestly as possible.	Removed
Item no	Words and phrases for modifications.	Modifications included.
1	What is your general view about the knowledge, skills and attitude of nurses in your hospital about pain management? Which teaching strategy did you find most appropriate to teach pain management? Please motivate why you indicate the specific teaching strategy.	Removed
2	Please provide any suggestion on what you will include if you need to prepare the training program on pain management for the nurses.	Removed.
3	Please describe how the hospital environment is supportive to nurses to be taught about pain management and the application of their knowledge and skills.	Removed.
4	Please provide any suggestions on what can be done to improve the pain management knowledge and skills of nurses in your hospital.	Removed.

3.11 VALIDITY AND RELIABILITY OF THE QUESTIONNAIRES

The pre-testing of the questionnaires was done to ensure the data quality, thus testing the validity and reliability (Mitra 2023:26; Chin, Caputo, Lin & Hu 2022:82).

3.11.1 Validity

Validity refers to the extent to which an instrument can accurately measure what it is intended to measure (Kumar 2019:206; Khakshooy & Chiappelli 2018:35; Beins 2017:130; Leavy 2017:113) To enhance the validity of this study, respondents self-administered the questionnaires in their own time and space without any interventions from others. Kumar (2019:206), Taylor (2017:285) illustrate that several different forms are used to develop and assess the validity of research questionnaires, such as face validity, content validity, criterion validity and construct validity. To ensure that the study research questionnaires measure what they were purported to measure, *face validity* and *content validity* were used to validate the questionnaires as embraced by Gray and Grove (2021:463).

3.11.1.1 Face validity

Face validity or superficial appearance of a questionnaire is referred to as whether on the face of the questionnaire, the questions appear to respondents to be relevant and measure the underlying construct (Gray and Grove 2021:463; Gravetter & Forzano 2018:59). In this study, the questionnaires were evaluated by the supervisor, statistician, and the scientific committee of the Department of Health Studies to evaluate whether they were measuring what needed to be measured before being pre-tested by the respondents.

The questionnaires and the items were factually designed, taking into account the thorough literature review specific to the topic of the study conducted in books between 2010 and 2018 and journals, dissertations, electronic documents, and articles from 2013 to 2018 to investigate avenues and address the objectives of the study (see Chapter 2). This helped the researcher to develop the three questionnaires (refer to Section 3.9).

The supervisor, the statistician, and the mentioned scientific review committee assessed and gave feedback and determined if the instruments measured what they were intended to measure. In this manner, the items of the questionnaires were

determined to have face validity as they were well-thought-out and appropriate to measure the intended construct.

3.11.1.2 Content validity

Content validity is defined as the degree to which items in a research instrument reflect the content domain or universe of the construct it aims to measure (Management Association, Information Resources 2018:425; Steyn 2017:2; Taylor 2017:285; Taherdoost 2016:29; Tiko 2015:16). The three questionnaires were evaluated for content validity (Rea 2022:87). The content of the three questionnaires derived from the literature review (refer to Chapter 2) and consultations with the supervisor, the statistician, and a scientific review group to ensure that the study objectives could be met.

Reliability was ensured before application to the main study as it is a prerequisite for validity (Gray and Grove 2021:458).

3.11.2 Reliability

Reliability is defined as a measure that refers to the consistency, stability, and repeatability or reproducibility of observations, measures, or data collected using the same methodology on more than one occasion across different but related test items or by different individuals (Gray and Grove 2021:458; Beins 2017:130; Leavy 2017:113; Curry & Nunez-Smith 2015:176). In this context, the reliability of the survey questionnaires in Phases 1, 2 and 3 was assessed to ensure *stability* and *internal consistency*.

3.11.2.1 Stability reliability

Stability reliability, also referred to as *test-retest reliability* (repeating the same test to the same subjects on a second occasion), was used for this study (Pallant 2020:6; Rubin 2020:99; Cairns 2019:177). Test-retest reliability implies that when the questionnaire is administered to a sample twice on two different occasions, and the scores are then compared to measure the consistency or stability among scores or data collected it would yield similar results (Polit & Beck 2021:317; Pallant 2020:6; Rubin 2020:99; Beins 2017:130). The rationale for adopting test-retest reliability was to

ensure that the survey questionnaire consistently replicates the result more than once in the same situation and population.

To measure the test-retest reliability of questionnaires, a reliability coefficient is computed and designated as "correlation coefficient r," ranging from 0.00 to 1.00 (Polit & Beck 2021:316). To deem a questionnaire stable, the acceptable correlation between two sets of responses to the instruments should be higher than .70, considered adequate, or above .80, considered for preferable test-rest-reliability coefficients (Polit & Beck 2021:319; Rubin 2020:99; Shougaard, de Thurah, Bech, Hjollund & Christiansen 2018:2). A higher test-retest-reliability coefficient indicates a smaller measurement error of the questionnaire (Polit & Beck 2021:319; Shougaard et al. 2018:2; Leppink & Pérez-Fuster 2017:159).

In this study, the researcher and the supervisor ensured all three questionnaires were tested through test-retest for reliability to indicate whether the same results were obtained with the repeated administering of the same data collection methods using similar study respondents. All three questionnaires were re-tested after two weeks (see Section 3.10) by the original respondents, as recommended by Polit and Beck 2021:319 and Rubin (2020:100). The statistician helped to estimate the test-retest reliability of each questionnaire by correlating the scores obtained from two successive measurement procedures for the same group of pre-testing individuals at two different times using the R Statistical Software (R) for data analysis (Rubin 2020:100; Gravetter & Forzano 2018:63). The test-retest reliability results of the three questionnaires are discussed below.

3.11.2.1 Internal Consistency

Internal consistency or homogeneity refers to the degree to which multiple items on a single scale measure the same attribute or dimension/trait (Polit & Beck 2021:320; Rubin 2020:100). To determine the internal consistency, Cronbach's Alpha (α) coefficient is calculated (Polit & Beck 2021:321). The Cronbach's alpha (α) value ranges from 0-1, where 0 is no internal consistency and 1 is the maximum internal consistency

(Taber 2017:1287; Tiko 2015:18). Cronbach's alpha (α) quantifies the degree to which items on an instrument are correlated with one another and the scale used in a clinical setting should have a minimum α = 0.90, while as low as α = 0.70 is regarded as a satisfactory level as stated by Information Resources Management Association (2021:1090) and Blaga (2020:122)

In this study, the data analysis program, the R Statistical Software (R), was used to determine the internal consistency of the questionnaires in Phases 1, 2, and 3. The statistician did data analysis. The items of the questionnaires were analysed by calculating Cronbach's Alpha (α) coefficient test as recommended by Polit and Beck (2021:320), and Grove, Gray and Faan (2019:271). The internal consistency of the three developed questionnaires in Phases 1, 2, and 3 was calculated based on the Cronbach's alpha (α) coefficient mentioned above.

In the end, the results of *test-retest reliability and internal consistency* computed during pre-testing for the three questionnaires were as follows:

- Questionnaire 1: The Cronbach's alpha coefficient score the first time was 0.927; at time two, it was 0.933. The high alphas were indicative of greater internal consistency, an excessive number of questions, or possible redundant questions as they were greater than 0.9 (Ngulube 2021:304; Gorrie, Goodall, Rush & Ravenscroft 2019:6). Therefore, modifications of words and phrases were made based on comments from the respondents, the supervisor, and the statistician's feedback (see Table 3.5).
- Questionnaire 2: Cronbach's alpha coefficient score of Questionnaire 2 at time one was 0.945, and at time two it was 0.945. The high alphas were indicative of greater internal consistency, a large number of questions, or possibly redundant questions as the score was greater than 0.9 (Ngulube 2021:304; Gorrie et al. 2019:6). Despite these very high coefficient scores, modifications of words and phrases were made as recommended by the respondents, the supervisor, and the statistician's feedback (see Table 3.6).

- Questionnaire 3: The first time, the Cronbach score was 0.934, and the second time it was 0.977. Both also showed an internal consistency of more than 0.9. Some words and phrases were modified as recommended by the respondents and the supervisor, and based on the statistician's feedback (see Table 3.7).

The analysis did provide information on which items needed rewording or even needed removal according to Cronbach's alpha coefficient scores as suggested by Ngulube (2021:304). After all necessary modifications were made to the questionnaires, they were finally administered for data collection (see Tables 3.5, 3.6, and 3.7).

3.12   ETHICAL CONSIDERATIONS

Ethics in research is defined as a system of moral values that is concerned with the degree to which the research procedures adhere to professional, legal, and social obligations to the study participants (Polit & Beck 2014:380; Profetto-McGrath, Polit & Beck 2010:409).

The researcher considered the ethical principles and adhered to three main domains of responsibilities related to ethical principles: (1) protecting the rights of the study participants, (2) protecting the rights of the institution, and (3) scientific integrity of the research (Polit & Beck 2021:133).

3.12.1 Protecting the rights of the study participants

To adhere to ethical standards of research and comply with the King Abdullah International Medical Research Centre's (KAIMRC) institutional review board's (IRB) policy and guideline requirements, the researcher protected the rights and welfare of study participants by ensuring the following: (1) respect for human dignity and self-determination; (2) assuring informed consent; (3) maintaining confidentiality and anonymity; and (4) protecting participants from harm (Kazdin 2021:426; Polit & Beck 2021:133).

- Respect for human dignity and self-determination

The information leaflet (see Annexures 3 and 9) informed the participants that they could withdraw from the research at any time without fear of penalty. This was in line with Kazdin (2021:426), Polit and Beck (2021:134), and Leavy (2017:35), who state that the researcher must respect and treat participants as autonomous agents by informing them about a proposed study and allowing them to choose to participate voluntarily or not.

- Informed consent

Informed consent is defined as "the provision of information to participants about the purpose of the research, its procedures, potential risks, benefits, and alternatives, so that the individual understands this information and can make a voluntary decision whether to control and continue to participate" (Liamputtong 2013:39). To influence voluntary willingness and participation in the study, an information leaflet and consent letter (see Annexures 3 and 9) were provided to ensure that the participants were aware of all information relevant to the study (Kazdin 2021:426; Polit & Beck 2021:137; Arifin 2018:30). The participants were informed about their rights to withdraw from the study without penalty.

The participants were asked to give informed consent voluntarily before participating in the study (Polit & Beck 2021:137; Arifin 2018:30; Leavy 2017:36).

- Confidentiality and anonymity

Respecting the respondents' right to privacy in this study involved protecting their anonymity and keeping their information confidential (Kazdin 2021:426; Polit & Beck 2021:142). Confidentiality means a trustful action of the researcher to safely manage information or data shared by participants by ensuring that the data are kept private from others (Grove & Gray 2023:493; Polit & Beck 2021:141). All information and data collected were portrayed confidentially. Confidentiality was maintained and assured to all respondents in all study phases by preventing anyone outside the study from accessing the information and data other than the researcher. Confidentiality is linked to

anonymity. Anonymity may be defined as an aspect of privacy to protect the research participants by keeping them unknown or unspecified to others (Grove & Gray 2023:493; Polit & Beck 2021: 141).

The self-administered questionnaire kept respondents anonymous as no names or personal details were requested on the questionnaire. The judgements and opinions of the panel members were kept confidential as recommended by Harris and Mavuka (2023:191), and Polit and Beck (2021:141). The researcher did not share the names and details of the panellists with any of the panellists involved. The findings of the study were reported without identifying study participants.

- Protection from harm

The researcher protected the participants from discomfort and harm by ensuring a comfortable environment around them (Grove and Gray 2023:493; Polit & Beck 2021:133).

- Researcher-Participant Relationship

Privacy was maintained throughout the study. Study participants entered into a special trusting relationship with the researcher, and it was crucial that this relationship not be exploited (Harris & Mavuka 2023:191; Polit & Beck 2021:135).

3.12.2 Protecting the rights of the institution

Permission to conduct the research was first sought from the Research Ethics Committee of the Department of Health Studies, Unisa REC-012714-039 (see Annexure 6a), REC-240816-052 (see Annexure 6b); and Nursing Services Permission to conduct research (see Annexure 7a); KAIMRC and the Institutional Review Boards (IRB), approval study number SP 18/036/R (see Annexure 7b); IRB Annual Extension SP 18/036/R (see Annexure 7c); and IRB 6 Months Extension SP 18/036/R (see Annexure 7d) of the two selected Saudi Arabian teaching hospitals as recommended by Pozgar (2019:82), Salhan (2011:30) and DePoy and Gitlin (2011:149). Care was taken

not to infringe on the institutions' rights by scheduling meetings to suit respondents at three free times to avoid disturbing their routine patient care and allow for as much attendance as possible.

3.12.3 Scientific integrity of the research

The researcher maintained honesty by avoiding duplication of work and misconduct such as fabrication, falsification, dishonesty, and plagiarism. Halstead and Billings 2023:93, Polit and Beck (2021:147), and Iphofen (2017:97) emphasise that the researcher is responsible for monitoring the integrity and honesty of his or her research protocols, results and publications. There was voluntary participation with no compensation. The data were honestly reported, and raw data were kept safely in a locked place accessible only to the researcher.

3.13 DATA COLLECTION: PROCESS FOLLOWED IN PHASES 1, 2 AND 3

Data were collected between 4 December 2019 and 17 March 2020 (refer to Section 3.8). A gatekeeper letter, as well as the information letter for respondents (see Annexures 1 and 2), were sent via email to the nurse managers who acted as gatekeepers of the five nursing care divisions, namely medical, surgical, paediatric, cardiac and oby-gynae wards to assist with the sampling to ensure that the volunteers comply with the inclusion criteria of the study. The managers then provided the researcher with a list of names and telephone numbers of professional registered nurses and clinical facilitators who volunteered to participate after they had read the information letter that was forwarded to them by their nurse managers (see Annexures 1, 2 and 3).

The researcher telephonically contacted the selected volunteers to arrange a convenient time and place to deliver the information letter, the consent letter (see Annexure 3), and the questionnaire and envelope that could be sealed. This was to avoid disturbing the respondents' daily routine by scheduling the meetings to suit them. The volunteers were allowed to read the information letter again and then required to sign the consent form if they agreed to participate. The completed questionnaires, in sealed envelopes, were put back in the sealed box provided in each ward (see Annexure 7).

The researcher collected them from each unit at the end of a week, after working hours, between 4 and 6 pm. This was done until all respondents' questionnaires were collected.

Data collected were analysed after each phase.

3.14   DATA ANALYSIS

After data collection, the statistician used Statistical Package for the Social Sciences (SPSS) version 25 to enter the data for analysis. The researcher and the statistician verified the completeness of the data through data cleaning to resolve quality issues that could have been found in the data, as described by Karishree, Sudha, Soundarya and Ramya (2023:10) and Van der Loo and De Jong (2018:183). The closed-ended questions were analysed using descriptive statistical analysis showing frequencies, mean, and standard deviations. At the end, each questionnaire had open-ended questions for qualitative enhancement. The open-ended responses were coded openly by the researcher and analysed thematically to draw valid inferences, as described by Anderson, Taylor, Taylor and Virues-Ortega (2022:742).

3.14.1 Descriptive statistical analysis

Statistics, as a branch of mathematics, are used for data collection, analysis, and interpretation of data, and are classified mainly as descriptive or inferential statistics and are used to summarise, organise and describe a sample of data to understand the fundamental properties of the variables being studied (Polit & Beck 2021:366; Sharma 2022:16).

Descriptive statistics measures are categorised into (1) frequency distributions; (2) measures of central tendency such as means; (3) measures of dispersion such as standard deviations; and (4) correlation coefficients, cross-tabulations and standardized scores (Sharma 2022:291; Leavy 2017:111; Leedy & Ormrod 2015:386; Rubin & Babbie 2014:662).

In this study, the descriptive statistical analyses used were: (1) the frequency distributions, (2) the mean, (3) the standard deviations [SD], and (4) percentage values related to the relevant objectives of each quantitative phase to (1) Identify and describe the resources available to conduct pain assessments (Phase 1, quantitative); (2) Identify and describe nurses' characteristics and learning styles that enhance the transfer of pain management competencies (Phase 2, quantitative); (3) Explore the teaching approaches employed by the clinical facilitators during pain management education of nurses (Phase 3, quantitative); (4) Describe the learning content regarding pain assessment and management (Phase 3, quantitative); and (5) Describe the transfer of learning climate within the hospitals' nursing care areas (Phase 3, quantitative) (Creswell & Clark 2011:206, Cohen et al. 2011:622).

1) Frequency distributions

Frequency distributions are statistical procedures that involve systematic presentations of values of variables displayed on graphs or tables from lowest to highest, together with a report about the count of a number or percentage of how many times each value occurred (Polit & Beck 2021: 368). In this study, the frequency distributions are presented in graphic and table format for the biographical information of the respondents (see Chapter 4).

2) The mean

The mean is a measure of central tendency that uses a single value to represent the arithmetic average of all the scores to represent a distribution of values of the variables in the data set (Polit & Beck 2021:371; Leavy 2017:111). To calculate the mean, the number of all scores in the data set are added together to make the total sum of scores, and then the total sum of scores is divided by the number of scores being added (Polit & Beck 2021:371; Weir & Vincent 2020:41). The mean is symbolised as *M or $\overline{x}$* (Polit & Beck 2021:841), as is the case in the description of the research findings (see Chapter 4).

3) Standard deviations [SDs]

The standard deviations [SDs] are measures of dispersion or variation that summarise the average deviation of values from the data set's mean (Kaplan & McCune 2018:217; Polit & Beck 2014:219; Rubin & Babbie 2014:672). "It indicates how values vary about the mean of the distribution" (Polit & Beck 2021:372). The standard deviations were calculated around the mean of the data set collected in the three quantitative phases of the study.

4) The percentage values

Descriptive statistics included percentages for categorical ordinal and nominal data that form part of each frequency (Polit & Beck 2021:366; Taylor 2017:335). Percentage values are calculated by dividing the frequency by the total number of eligible counts with the sample (Taylor 2017:335). Percentage values are included in all frequency distributions in Phases 1, 2, and 3 of this study (see Chapter 4).

Even though Phases 1, 2, and 3 were quantitative, at the end of the last section of each questionnaire, there was a non-compulsory open-ended question for qualitative enhancement. Thus, the data were open-coded and followed the qualitative thematic content analysis steps.

3.14.2 Qualitative data analysis (qualitative enhancement)

Qualitative data analysis is defined as the formal interpretation of collected data to create order and meaning by exploring the data by coding, indexing, retrieving or sorting to search for patterns, themes, relationships and significant statements (Singh & Ramdeo 2020:238).

All open-ended questions in the three questionnaires used in Phases 1-3 were open-coded, and a thematic analysis was done to enhance the quantitative data obtained.

Content analysis can be defined as a systematic analytical method that statistically analyses the narrative data by identifying prominent patterns, themes, or biases (Singh & Ramdeo 2020:238; Leavy 2017:146; Leedy & Ormrod 2015:275).

There are different step-by-step methods described to do a content analysis (Singh & Ramdeo 2020:237; Vaismoradi 2013:400). A thematic content analysis according to the steps described by Clarke and Braun (2013:121) and Maguire and Delahunt (2017:3354) was followed to analyse the data. These steps include (1) "familiarising oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming the themes, and (6) producing the report."

1)   Step 1: Familiarisation with the data

The written narrative comments from all open-ended questions were repeatedly read until the researcher became immersed and familiar with the entire content of the data sets (Braun & Clarke 2006:16). Relevant and similar ideas were highlighted in different colours before starting with the coding process as described in the literature (Maguire & Delahunt 2017:3355; Clarke & Braun 2013:121).

2)   Step 2: Coding

Similar ideas were grouped and coded.

3)   Step 3: Searching for themes

The identified codes were grouped to ensure that similar ideas were together. Similar ideas, therefore, formed the themes. The selected themes were further refined into themes specific to the research questions.

4)   Step 4: Reviewing themes

The identified themes were formed, refined, and then reduced into manageable themes. Those themes that were not fitting were discarded and refined until additional refinements were not adding anything substantial.

5)   Step 5: Defining and naming themes

The final step identified the categories grouped to form the themes. The direct quotations that led to the categories were included in the table to present the data (see details in Sections 4.2.3, 4.3.4, and 4.4.6).

6)   Step 6: Writing up

This is the analysed data report, which is presented to answer the research questions and the objectives of the study at the end of each phase.

3.15   CONCLUSION

This chapter described the research design and methodology of the study. Phases 1, 2, and 3 were used to gather the information from the respondents.

Chapter 4 will discuss the data analysis and interpretation of findings from Phases 1 to 3.

CHAPTER FOUR: PHASE 1, 2, AND 3: DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents the data analysis and interpretation of Phases 1, 2, and 3. Each phase will be discussed separately as the findings were aimed at addressing the objectives of each phase, and sequentially, the phases inform each other, as illustrated in Table 4.1.

Table 4.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	Chapter outline	Chapter content
Chapter 1	Overview of the study	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology, and ethical considerations.
Chapter 2	Literature review	Consists of the literature review related to: Systemic Model of Transfer of Learning by Donovan and Darcy, Transfer of learning and Pain management and tools.
Chapter 3	Research design and methodology	Illuminates the overarching research design. Phase 1, 2 and 3 (quantitative phases): Methodology and data gathering.
Chapter 4	Data analysis and interpretation	Presents the data analysis and interpretation of the findings from Phases 1 to 3.

Chapter 5	Phase 4	Includes a description of Phase 4 of the study: Literature review on the action plan development. Development of the draft action plan.
Chapter 6	Phase 5	Outlines and describes Phase 5 of the study (qualitative phase): Methodology Validation of the action plan: The validated action plan.
Chapter 7	Conclusion, recommenda-tions, and limi-tations.	Contains the conclusion, recommendations, and limitations of the study.

All but one respondent completed both Questionnaire 1 for Phase 1 and Questionnaire 2 for Phase 2. The one respondent completed only Questionnaire 1 for reasons unknown. Thus, 385 completed Questionnaire 1 and 384 completed Questionnaire 2.

In the descriptions of the findings discussed, the following common symbols for the presentation of data apply:

- N = Upper case N represents the total sample included, as suggested by Lynch (2013: xi) and Beins (2012:76).
- n = refers to the size of subsamples (Beins 2012:76).
- F = refers to frequencies within the sample set under discussion and can refer to either N or n (Beins 2012:76).
- f = Lower italicised f refers to percentages.

4.2 PHASE 1

The objective of Phase 1 was to identify and describe the resources available to conduct pain assessments in the context of Saudi Arabian teaching hospitals.

4.2.1 Demographic characteristics (N = 385)

The demographic characteristics of the respondents (N = 385) are described according to gender, age, nationality, highest education qualification and nursing care areas.

4.2.1.1 Gender of nurses (N = 385)

As illustrated in Figure 4.1, 7.0% (n = 27) of nurse respondents were male and 93.0% (n = 358) were female. Nursing is globally found to be a female-dominated profession where male nurses are underrepresented (Badu, Abalo, Bam, Agyemang, Noi, Badu and Peprah (2019:9). According to the WHO (2020), Saudi Arabia has 79% female nurses and 21% male nurses, with a global distribution of 89% female and 11% male nurses (WHO 2020:41). The dominance of female respondents is therefore acceptable within this study.
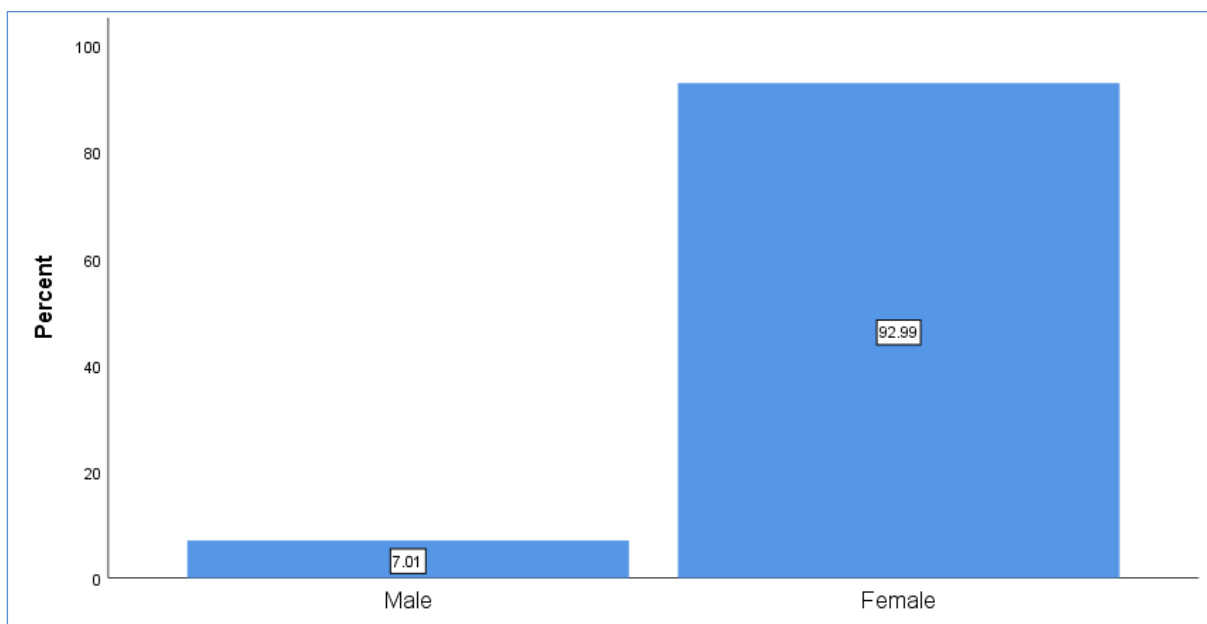
Figure 4.1 Gender of nurses (N = 385)

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4.2.1.2 Age of nurses (N = 385)

The mean age of respondents was 34.86 years. The youngest respondent was 24 years old, and the eldest was 60 at the time of data gathering. The standard deviation was 7.725, and the distribution of registered nurses' ages was a positively skewed attribute, as the mean age was 34.86, thus greater than the median age of 33 (see Figure 4.2). It was appropriate to inquire about the age of nurses in the context of inquiring about the experience and skill mix that enhance the transfer of learning after pain management training or sessions. Globally, young professional nurses are under 35 years, while older professional nurses are aged 55 or above (WHO 2020:40). This suggests a positive outcome as the respondents' ages show that there was a high proportion of the young nursing workforce with fewer ageing nurses in both the study hospitals.
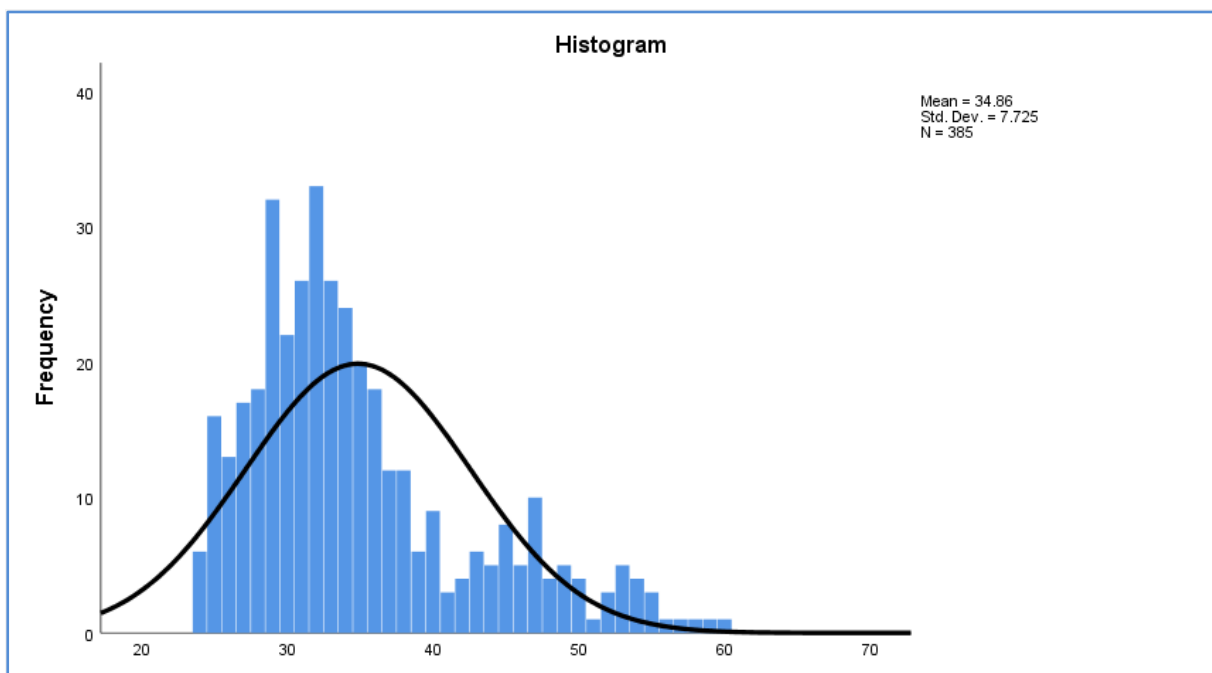
Figure 4.2 Age of nurses (N = 385)

4.2.1.3 Nationality of nurses (N = 385)

The nationality of the 385 respondents who participated in this study is depicted in Table 4.2.

Table 4.2: Nurses' nationality (N = 385)

Nationality	n =	f = %
Filipino	208	54.0
Malaysian	131	34.0
Saudi	19	4.9
South Korean	8	2.1
Indian	6	1.6
South African	5	1.3
British	2	0.5
Jordanian	2	0.5
Slovak	2	0.5
Czech	1	0.3
Spanish	1	0.3
Total	385	100

The respondents' nationality was important to know due to their diverse education and possibly their knowledge and experience about the resources needed to do pain assessment. As illustrated in Table 4.2, nurses of eleven (11) different nationalities participated in the study.

The majority of the respondents, namely 54.0% (n = 208), were from the Philippines, 34% were Malaysians (n = 131), and 4.9% (n = 19) were from Saudi Arabia. Five (f = 1,3%) South Africans participated, with two (f = 0.5%) participants each from the United Kingdom, Jordania and Slovakia. Only one (f = 0,3%) Czech and one (f = 0,3%) Spanish nurse participated. Of interest is that the vast majority of respondents

(n = 366; f = 95.1%) were from outside Saudi Arabia. The study findings had an even greater representation of foreign participants than those mentioned by Al Yami and Watson (2014:11), namely 66% foreign and 34% Saudi nurses working in Saudi healthcare facilities.

It is mandatory for nurses working in Saudi Arabian hospitals, despite their nationality, to register with the Saudi Commission for Health Specialities (SCFHS) to be licenced to practice. To renew their licences to practice with the SCFHS, they were expected to engage in continuing professional development (CPD) activities that are accredited. One such programme is the pain management training programme that can be done to meet re-registration requirements and practical competencies (Aljohani 2020:2; Alkhazim & Althubaiti 2016:18).

Due to the diverse nationalities of participants, but also that of the patients, the language used during pain assessments could have been a challenge to the pain management outcome, as was mentioned in the study findings of a study conducted by Van Rosse, de Bruijne, Suurmond, Essink-Bot and Wagner (2015:9).

4.2.1.4 Highest education qualifications (N = 385)

Nurses undergo different types of education that can affect their competencies within nursing practice. The highest academic qualifications of participants are important as they may contribute to motivating participation in continuing nursing education, with participants having different levels of skills and knowledge to contribute to quality patient care, different problem-solving skills, and have trained to function in diverse environments (Suliman & Aljezawi 2018:529; Kamariannaki, Alikari, Sachlas, Stathoulis, Fredelos & Zyga 2016:233). The highest education qualifications of 385 respondents are illustrated in Figure 4.3.
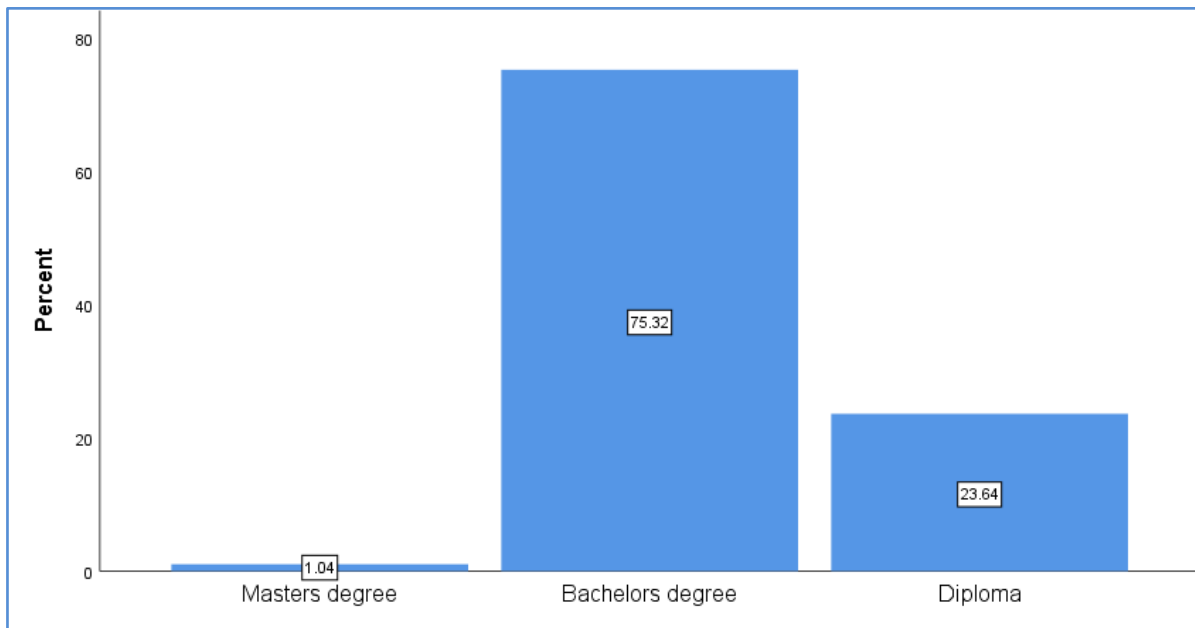
Figure 4.3 Nurses' Highest Education Qualifications distribution (N = 385)

Two hundred and ninety (290) out of 385 (f = 75.5% n = 290) respondents had a bachelor's degree, 91 (f = 23.6%; n = 91) a diploma, with only 4 (f = 1%, n = 4) having obtained a master's degree (refer to Figure 4.3). These findings are consistent with the global nursing community and national trends, which show that various countries have programs on the rise with baccalaureate degree-prepared nurses for education as an entry into the nursing profession. These countries are, among others, the United States, the United Kingdom, Denmark, Norway, Ireland, Australia, New Zealand, Canada, Philippines, and Mexico (Institute of Medicine (IOM) 2011:565). In Saudi Arabia, the Saudi Arabian Ministry of Health (MoH) and SCFHS have stipulated the minimum requirement of a bachelor's degree for entry into nursing practice (Alboliteeh, Magarey & Wiechula 2018:76). Table 4.3 illustrates the highest educational qualification of the participants as per the country of origin.

Table 4.3: The nurses' country of origin and their highest education qualification (N = 385)

Nationality	Total number		Master's degree		Bachelor's degree		Diploma	
	n =	f = %	n =	f = %	n =	f = %	n =	f = %
Filipino	208	54.0	0	0	208	54.0	0	0
Malaysian	131	34.0	2	0.5	41	11.2	88	22.8
Saudi	19	4.9	0	0	19	4.9	0	0
South Korean	8	2.1	0	0	8	2.1	0	0
Indian	6	1.6	0	0	6	1.6	0	0
South African	5	1.3	0	0	2	0.5	3	0.8
British	2	0.5	0	0	2	0.5	0	0
Jordanian	2	0.5	0	0	2	0.5	0	0
Slovak	2	0.5	2	0.5	0	0	0	0
Czech	1	0.3	0	0	1	0.3	0	0
Spanish	1	0.3	0	0	1	0.3	0	0
Total	385	100.0	4	1.0	290	75.3	91	23.6

The only respondents with master's degrees were two from Malaysia (f = 0.5%) and two from Slovakia (f = 0.5%). All respondents from the Philippines had a bachelor's degree (f = 54.0%; n = 208). Respondents from Malaysia (f = 11.2%; n = 41), Saudi Arabia (f = 4.9%; n = 19), South Korea (f = 2.1%; n = 8), India (f = 1.6%; n = 6), as well as 2 (f = 0.5%) participants each from Britain, Jordan, and South Africa, had a bachelor's degree. Only 1 (f = 0.3%) each from the Czech Republic and Spain had a bachelor's degree. The only diploma-prepared nurses were from Malaysia (f = 22.8; n = 88) and South Africa (f = 0.8%; n = 3). The study findings were consistent with those of Roets, Botma, and Grobler (2016:428), who stated that most nurses were diploma-prepared in some countries, such as South Africa. Degree-prepared nurses, however,

are mostly equipped with high levels of clinical reasoning skills and can manage patients with acute or chronic pain, render quality care and improve patient safety (Deng 2016:97; Roets et al. 2016:429).

4.2.1.5 Nursing wards/divisions where the registered respondents worked (N = 385)

It was important to know the nursing wards of the five nursing care divisions where the respondents worked to access the available resources within the different wards, which could enable nurses to conduct pain assessments. One hundred and sixty-three (f = 42.3%) respondents were from surgical wards, 122 (f = 31.7%) from medical wards, 45 (f = 11,7%) from paediatric wards, 32 (f = 8.3%) from cardiac wards, while 23 (f = 6.0%) were from obs-gynae wards (refer to Table 4.4). A high number of respondents in this study were from surgical and medical wards, where pain management is crucial and where nurses value the management thereof, as suggested by Alzghoul and Abdullah (2016:157). Nurses from surgical and medical nursing divisions, therefore, emphasized the high availability of resources to conduct pain assessments in their wards.

Table 4.4: **Distribution of respondents within wards (N = 385)**

Nursing Wards	n =	f = %
Surgical	163	42.3
Medical	122	31.7
Paediatric	45	11.7
Cardiac	32	8.3
Obs-gynae	23	6.0
Total	385	100.0

4.2.2 Resources available to conduct pain assessment (N = 385)

This section indicates the findings from 385 nurse respondents about Section B of the questionnaires that focussed on the resources available to conduct pain assessments (see Annexure 4). It was important to identify the availability of resources to conduct pain assessments to enhance the transfer of learning of pain management competencies within various wards.

The various systematic pain assessment guide tools for pain history taking were assessed for availability as resources to conduct pain assessments.

4.2.2.1 Systematic pain assessment guides for pain history taking. (N = 385)

Five systematic pain assessment guides used for pain history taking were selected for inclusion in this study, namely: (1) QUEST (question the child, use pain rating tools, evaluate behaviour, sensitise parents and take action); (2) WILDA (words to describe pain, intensity, location, and aggravating or alleviating factors); (3) PQRST (provoking/palliation factors, quality of pain, region of pain, severity, and timing); (4) OPQRST (onset of pain, provoking/palliating, quality, region/radiation of pain, the severity of pain, timing/treatment, understanding/impact on you and values); (5) and COLDSPA (character, onset, location, duration, severity, pattern, and associated factors). Table 4.5 illustrates the findings from the 385 respondents regarding the systematic pain assessment guide tools available in their wards. The tools are discussed from the highest to the least available.

4.2.2.1.1 Availability of the WILDA pain assessment guide (N = 385)

As illustrated in Table 4.5, WILDA was indicated as the tool most accessible within the various wards, with 97,4 % (n = 375; N = 385) of respondents indicating its availability. The second most accessible tool, according to the respondents, was PQRST with 69.1% (n = 266; N = 385) availability, followed by OPQRSTUV with 41.9% (n = 161; N = 384), COLDSPA with 41.8% (n = 161; N = 385), and QUEST was the least

available with only 9.4% (n = 36; N = 385) (see Table 4.5). The WILDA tool was reported to be predominantly accessible, as illustrated in Table 4.5.

Table 4.5: Availability of the pain assessment guides (N = 385)

Systemic pain assess-ment guide tools	Nursing Wards																							
	Surgical				Medical				Paediatric				Cardiac				Obs- gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
WILDA	158	96,9	5	3,1	122	100	0	0	44	97,8	1	2,2	32	100	0	0	19	82,6	4	17,4	375	97,4	10	2,6
PQRST	113	69,3	50	30,7	78	63,9	44	36,1	44	97,8	1	2,2	18	56,3	14	43,8	13	56,5	10	43,5	266	69,1	119	30,9
OPQRSTUV	61	37,4	101	62,0	54	44,3	68	55,7	22	48,9	23	51,1	13	40,6	19	59,4	11	47,8	12	52,2	161	41,9	223	58,1
COLDSPA	60	36,8	103	63,2	59	48,4	63	51,6	17	37,8	28	62,2	13	40,6	19	59,4	12	52,2	11	47,8	161	41,8	36	9,4
QUEST	22	13,5	141	86,5	1	0,8	121	99,2	11	24,4	34	75,6	1	3,1	31	96,9	1	4,3	22	95,7	36	9,4	349	90,6

In both the medical and cardiac wards, the WILDA tool was reported to have been 100% available to all respondents. Respondents from paediatric wards indicated WILDA to be 97,8% (n = 45; F = 44) available. In surgical wards, it was 96.9% (n = 163; F = 158) and in obs-gynae wards, it was 82,6% (n = 23; F = 19) (see Table 4.5). As Fink and Gallagher (2019:231) suggest, WILDA assists the nurses in asking questions during pain assessment to persons who can self-report their pain; thus, its availability in the wards that are mainly for adults.

4.2.2.1.2   Availability of the PQRST pain assessment guide (N = 385

PQRST, used to conduct pain assessment in the paediatric population, as explained by Fink and Gallagher (2019:231), was primarily accessible within paediatric wards, namely a 97.8% (F = 44; n = 45) availability. This tool was reported to be 69,3% (n = 113; F = 163) available in surgical wards, 63,9% (F = 78; n = 122) in medical wards, 56,5% (n = 13; F = 23) in obs-gynae wards, and 56,3% (F = 18; n = 32) in cardiac wards (see Table 4.5).

4.2.2.1.3   Availability of the OPQRSTUV pain assessment guide (N = 385)

As explained by Cash, Glass, Fraser, Corcoran and Edwards (2019:59), as well as Jufri, Permana and Widagdo (2019:13), the OPQRSTUV tool is used to guide the assessor to conduct pain assessment within paediatric wards. Thus, it was primarily available in paediatric wards with a 48.9% (F = 22; n = 45) availability. In obs-gynae wards, the tool was reported available with 47,85 (F = 11; n = 23), in medical wards (44,3%; F = 54; n = 122), in cardiac wards (40,6%; F = 13; n = 32), and surgical wards with 37,4% (F = 61; n = 163) (see Table 4.5).

4.2.2.1.4   Availability of the COLDSPA pain assessment guide (N = 385)

Dains, Baumann, and Scheibel (2015:1) recommend COLDSPA as a useful tool, using mnemonics to gather information for the process of pain assessment. Respondents from obs-gynae wards reported the tool to be 52.2% (F = 12; n = 23) available, 48,4% (F = 59; n = 122) from medical wards, 40,6% (F = 13; n = 32) from cardiac wards,

37,8% (F = 17; n = 45) from paediatric wards, and 36,8% (F = 60; n = 163) from surgical wards reported the tool to be available (see Table 4.5).

4.2.2.1.5 Availability of the QUEST pain assessment guide (N = 385)

QUEST, used to conduct pain assessment in paediatric areas as stated by Brand (2019:314) and Gladston et al. (2016:55), was primarily available within paediatric wards with 24.4% (F = 11; n = 45) availability. The tool has been reported available with a 13,5% (F = 22; n = 163) response in surgical wards, 4,3% (F = 1; n = 23) in obs-gynae wards, 3.1% (F = 1; n = 32) in cardiac wards, and 0,8% (F = 1; n = 122) in medical wards (see Table 4.5).

The pain rating assessment tools available to assess the pain of patients who can self-report their pain were also assessed for their availability in the various nursing wards.

4.2.2.2 Pain rating assessment tools for patients who can self-report their pain (N = 385)

The respondents indicated the availability of the following five chosen validated and reliable pain rating assessment tools for patients who can self-report their pain to rate pain during pain assessments: (1) the Wong-Baker FACES pain scale; (2) the Numeric Rating Scale (NRS); (3) the Verbal Analogue Scale (VAS); (4) the Verbal Descriptor Scale (VAS); and (5) the Brief Pain Inventory (BPI) questionnaire. The availability of these tools in the different wards, as indicated by the 385 respondents, is illustrated in Table 4.6. The pain rating assessment tools are discussed from the highest availability to the least available.

The numeric rating scale (NRS) was indicated as the pain rating scale predominantly available within the five nursing divisions with a 95,3% (n = 367; N = 385) availability as was indicated by respondents (see Table 4.6). Wong-Baker FACES followed with 82,3% (n = 316; F = 384) availability, VAS with 37,9% (n = 146; N = 385), VDS with 35,6% (n = 137; N = 385), and lastly BPI with 17,1% (n = 66; N = 385) availability (see Table 4.6). This finding is supported by the study findings of Fischer, Hosie, Luckett,

Agar and Phillips (2019:492), who report in their scoping review that clinicians used NRS on patients' self-report of pain due to availability thereof.

The NRS for pain rating was reported as available in various wards, as portrayed in Table 4.6.

4.2.2.2.1 *Availability of the Numeric Rating Scale (NRS) (N = 385)*

In paediatric and cardiac wards, the Numeric Rating Scale (NRS) was reported to have been 100% available to all respondents. This finding is interesting as Lim et al. (2015:230) indicate that NRS is very useful as a self-reporting assessment tool for patients who can self-report their pain (see Table 4.6), implying that it is expected not to be available in paediatric wards. Respondents from medical wards reported NRS to be 95,5% (n = 122; F = 117) available, followed by surgical wards with 95,1% (F = 155; n = 163), and oby-gynae wards 78,3% (F = 18; n = 23) (see Table 4.6).

Table 4.6: Availability of pain rating assessment tools for patients who can self-report their pain (N = 385)

Pain rating assessment tools for patients who can self-report their pain	Nursing Wards																							
	Surgical				Medical				Paediatric				Cardiac				Obs- gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
The Numeric Rating Scale (NRS)	155	95,1	8	4,9	117	95,9	5	4,1	45	100	0	0	32	100	0	0	18	78,3	5	21,7	367	95,3	18	4,7
The Wong-Baker FACES pain scale	140	85,9	23	14,1	85	69,7	37	30,3	40	90,9	4	9,1	31	96,9	1	3,1	20	87,0	3	13,0	316	82,3	68	17,7
The Verbal Analogue Scale (VAS)	52	31,9	111	68,1	60	49,2	62	50,8	13	28,9	32	71,1	14	43,8	18	56,3	7	30,4	16	69,6	146	37,9	239	62,1
The Verbal Descriptor Scale (VDS)	49	30,1	114	69,9	55	45,1	67	54,9	12	26,7	33	73,3	13	40,6	19	59,4	8	34,8	15	65,2	137	35,6	248	64,4
The Brief Pain Inventory (BPI) tool	24	14,7	139	85,3	27	22,1	95	77,9	8	17,8	37	82,2	3	9,4	29	90,6	4	17,4	19	82,6	66	17,1	319	82,9

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4.2.2.2.2 Availability of the Wong-Baker FACES scale (N = 385)

The Wong-Baker FACES scale is used to rate pain in children who can report their own pain (Fink & Gallagher 2019:231; Alizadeh, Paymard, Khalili & Hejr 2017:2). Its availability is illustrated in Table 4.6. The scale was reported to be available with 96,9% in cardiac wards (F = 31; n = 32). Paediatric wards followed with 90,9% (F = 40; n = 44) availability, obs-gynae wards, with 87.0% (F = 20; n = 23) surgical wards with 85,9% (F = 140; n = 163), and medical wards with 69,7% (F = 85; n = 122) (see Table 4.6).

4.2.2.2.3 Availability of the Verbal Analogue Scale (VAS) (N = 385)

Kliger, Stahl, Haddad, Suzan, Adler and Eisenberg (2015: 538) define the Verbal Analogue Scale (VAS) as a scale that can be used to rate the pain in adults who can report their pain. Not in any of the different wards was the scale reported to be available to more than 50% of respondents. It was most available in medical wards (f = 49,2%; F = 60; n = 122), followed by Cardiac wards (f = 43,8%; F = 14; n = 32), surgical wards (f = 31,9; F = 52; n = 163), obs-gynae wards (f = 30,4%; F = 7; n = 23) with for obvious reasons the least available in paediatrics wards (f = 28,9%; F = 13; n = 45) (see Table 4.6).

4.2.2.2.4 Availability of the Verbal Descriptor Scale (VDS) (N = 385)

The Verbal Descriptor Scale (VDS) is also known to be used to rate pain in adults who can self-report pain (Booker & Haedtke 2016:65). The scale was most reported to be accessible in medical wards (f = 45,1%; F = 55; n = 122), cardiac wards (f = 40,6%; F = 13; n = 32), obs-gynae wards (f = 34,8%; F = 8; n = 23), paediatrics wards (f = 26,7%; F = 12; n = 45), and the least available in surgical wards (f = 30,1%; F = 43; n = 163) (see Table 4.6).

4.2.2.2.5 Availability of the Brief Pain Inventory (BPI) (N = 385)

Another pain rating tool, the Brief Pain Inventory (BPI) questionnaire, was reported to be available, as is demonstrated in Table 4.6. This tool is used to rate pain in cancer

patients who can self-report their pain (Alizadeh-Khoei, Sharifi, Akbari, Fadeyevatan & Haghi 2017:565). The BPI was reported to be not more than 22% available in the various wards. It was available in medical wards (f = 22,1%; F = 27: n = 122), in paediatric wards (f = 17,8%; F = 8; n = 45), in obs-gynae wards (f = 17,4% F = 4; n = 23), in surgical wards (f = 14,7%; F = 24; n = 163), and in cardiac wards (f = 9,4%; F = 3; n = 32) (see Table 4.6).

The researcher requested that respondents indicate the availability of pain rating assessment tools for patients who cannot self-report pain.

4.2.2.3 Pain rating assessment tools for patients who cannot self-report their pain (N = 385)

The selected pain rating assessment tools of patients who could not self-report their pain to enable pain assessments were assessed within wards: They were (1) a CRIES (Crying, Required Oxygen, Increased vital signs, Expressions, Sleeplessness); (2) the Neonatal Pain, Agitation and Sedation Scale (N-PASS); (3) the Neonatal Infant Pain Scale (NIPS); the FLACC pain scale (Face, Legs, Activity, Crying, and Consolability); (5) the COMFORT-Behaviour pain scale (COMFORT-B); (6) the Critical Care Pain Observational Tool (CPOT); and (7) the Behavioural Pain Scale (BPS). Table 4.7 illustrates the availability of these different tools.

A FLACC pain scale was indicated as the most available scale within the different wards, with 96,1% (n = 370) availability, and CRIES, with 65,2% (n = 251) available. The scales reported to be less than 50% available in wards were COMFORT-B (f = 30,1%; n = 116), BPS (f = 27,8%; n = 107), NIPS (f = 24,7%; n = 95), CPOT (f = 21,8%; n = 84), and the least available was N-PASS (f = 21,0%; n = 81).

Respondents reported the availability of these scales in different wards, as illustrated in Table 4.7.

Table 4.7: Availability of pain rating assessment tools for patients who cannot self-report their pain (N = 385)

Pain rating assessment tools of patients who cannot self-report their pain	Nursing Wards																							
	Surgical				Medical				Paediatric				Cardiac				Obs- gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
FLACC pain scale	153	93,9	10	6,1	120	98,4	2	1,6	44	97,4	1	2,2	31	96,9	1	3,1	22	95,7	1	4,3	370	96,1	15	3,9
CRIES pain scale	107	65,6	56	34,4	63	51,6	59	48,4	45	100	0	0	21	65,6	11	34,4	15	65,2	8	34,8	251	65,2	134	34,8
COMFORT-B pain scale	44	27,0	119	73,0	39	32,0	83	68,0	14	31,1	31	68,9	11	34,4	21	65,5	8	34,8	15	65,2	116	30,1	269	69,9
BPS	34	20,9	129	79,1	41	33,6	81	66,4	16	35,6	29	64,4	9	28,1	23	71,9	7	30,4	16	69,6	107	27,8	278	72,2

NIPS	41	25,2	122	74,8	31	25,4	91	74,6	11	24,4	34	75,6	6	18,8	26	81,3	6	26,1	17	73,9	95	24,7	290	75,3
CPOT	31	19,0	132	81,0	30	24,6	92	75,4	11	24,4	34	75,6	8	25,0	24	75,0	4	17,4	19	82,6	84	21,8	301	78,2
N-PASS	32	19,6	131	80,4	27	22,1	95	77,9	11	24,4	34	75,6	5	15,6	27	84,4	6	26,1	17	73,9	81	21,0	304	79,0

4.2.2.3.1 Availability of the FLACC pain scale (N = 385)

FLACC pain scale is described as the most reliable and accessible in nursing for rating the pain in patients who cannot self-report their pain (Matsuishi, Hoshino, Shimojo, Enomoto, Kido, Hoshino, Sumitani & Inoue 2018:7) and its availability is as illustrated in Table 4.7. This pain scale was reported to be mostly always available in medical wards (f = 98,4%; F = 120; n = 122), followed by the availability in paediatric wards (f = 97,4%; F = 44; n = 45), in cardiac wards (f = 96,9%; F = 31; n = 32), in obs-gynae wards (f = 95,7%; n = 22; F = 23), and in surgical wards (f = 93,9%; F = 153; n = 163) (see Table 4.7).

4.2.2.3.2 Availability of a CRIES pain scale (N = 385)

A pain scale known to be used to assess pain in neonatal patients, namely CRIES (Andersen et al. 2018:4), was reported to be available in different wards (see Table 4.7). Since CRIES are well-known for use in neonatal patients, it was not surprising to find it to be reported to be 100% available in paediatric wards (see Table 4.7). Surgical wards followed with 65,6% (F = 107; n = 163) availability, cardiac wards with 65,6% (F = 21; n = 32), obs-gynae wards with 65,2% (F = 15; n = 23); and medical wards with 51,6% (n = 63; F = 122) (see Table 4.7).

4.2.2.3.3 Availability of the COMFORT-Behaviour pain scale (N = 385)

The third most reported pain scale, the COMFORT-B, is well-known to be used in paediatric intensive care areas to enable the assessment of pain in children who can-not self-report their pain (Seixas-Moizes & Wichert-Ana 2017:10) and its availability is as indicated in Table 4.7. Paediatric intensive care units were not selected as part of the study, and as it is the place recommended to utilise COMFORT-B, it is not strange that this was also reported to be not more than 34% available in any of the wards. Despite not being explicitly recommended for other wards, the scale was readily avail-able in some wards namely, obs-gynae wards (f = 34,8%; F = 8; n = 23), with cardiac wards (f = 34,4%; F = 11; n = 32), medical wards (f = 32.0%; F = 38; n = 122), paediatric

wards (f = 31,1%; F = 14; n = 45), and reported with the least availability in surgical wards (f = 27,0% (F = 44; n = 163) (see Table 4.7).

4.2.2.3.4 Availability of the Behavioural Pain Scale (BPS) (N = 385)

Kotfis et al. (2017:70) emphasise the use of BPS to assess uncommunicative, critically ill, sedated, and intubated patients in intensive care units who cannot report their pain. This scale was available according to the respondents (see Table 4.7). Because intensive care units, where BPS is to be used, were excluded in this study, its availability did not exceed 35%. It was, however, available in paediatric wards (f = 35,6%; F = 16; n = 45), medical wards (f = 33,6%; F = 41; n = 122), obs-gynae wards (30,4%; F = 7; n = 23), cardiac wards (28,1%; F = 9; n = 32), and in surgical wards (f = 20,9%; F = 34; n = 163) (see Table 4.7).

4.2.2.3.5 Availability of the Neonatal Infant Pain Scale (NIPS) (N = 385)

Andersen et al. (2018:4) and Desai, Aucott, Frank and Silber-Flagg (2018:262) explain NIPS as a valid and reliable scale to rate pain in patients who cannot self-report their pain, such as premature babies and neonates. Respondents reported its availability as illustrated in Table 4.7. The NIPS was available in obs-gynae wards with 26.1% availability (F = 6; n = 23), in medical wards with 25,4% (F = 31; n = 122), in surgical wards with 25,2% (F = 41; n = 122), in paediatric wards with 24,4% (F = 11; n = 45), and 18,8% in cardiac wards (F = 6; n = 32) (See Table 4.7).

4.2.2.3.6 Availability of the CPOT pain scale (N = 385)

The CPOT, described by Emsden, Schäfer, Denhaerynck, Grossmann, Frei, Kirsch (2020:12) and Kotfis et al. (2017:70), is a tool used to assess pain in non-conscious adults, critically ill ventilated patients, and non-ventilated patients mainly in intensive care units. The CPOT pain scale is primarily used in intensive care units, implying the rationale for its lowest availability as respondents from cardiac wards reported the scale to be 25.0% (F = 8; n = 32). In medical wards, it was 24.6% (F = 30; n = 122); in

paediatric wards, it was 24,4% (F = 11; n = 122); in surgical wards, it was 19,0% (F = 31; n = 163), and in obs-gynae, it was 17,4% (F = 4; n = 23) (see Table 4.7).

4.2.2.3.7 Availability of the N-PASS (N = 385)

According to the literature, the N-PASS should be available in neonatal intensive care units (Hillman, Tabrizi, Carson & Aucott 2015:5; Desai et al. 2017:287). For obvious reasons, as illustrated in Table 4.7, this scale was reported to be less than 50% available in various wards as it is more used in neonatal intensive units. Therefore, it was reported to be available with 26,1% in obs-gynae wards (f = 26,1%; F = 6; n = 23), paediatric wards with 24,4% (F = 11; n = 45), medical wards with 22,1% (F = 27; n = 122), surgical wards with 19,6% (F = 32; n = 163), and cardiac wards with 15,6% (F = 5; n = 32 (see Table 4.7).

The pain rating assessment tools for elderly patients with dementia or cognitive impairment to conduct pain assessments are for discussion.

4.2.2.4 Pain rating assessment tools for elderly patients with dementia or cognitive impairment (N = 385)

The four validated and reliable pain rating tools to rate pain for elderly patients with dementia or cognitive impairment selected were (1) the Abbey Pain Scale (ABBEY), (2) the Checklist on Nonverbal Pain Indicators (CNPI), (3) the Pain Assessment in Advanced Dementia scale (PAINAD), and (4) the Non-communicative Patient's Pain Assessment Instrument (NOPPAIN) pain scale (see Annexure 4). The four pain tools' availability is illustrated in Table 4.8 and discussed from the highest availability to the least available.

The availability of the pain rating assessment tools in different wards is illustrated in Table 4.8, as reported by the respondents.

Table 4.8: Availability of the pain rating assessment tools for elderly patients with dementia/cognitive impairment (N = 385)

Pain rating assessment tools for elderly patients with dementia or cognitive impairment	Nursing Wards																						
	Surgical				Medical				Paediatric				Cardiac				Obs- gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
CNPI	41	25,2	122	74,8	35	28,7	87	71,3	11	24,4	34	75,6	9	28,1	23	71,9	6	26,1	17	73,9	102	26,5	283	73,5
NOP-PAIN	31	19,0	132	81,0	31	25,4	91	74,6	9	20,0	36	80,0	4	12,5	28	87,5	5	21,7	18	78,3	80	20,8	305	79,2
PAINAD	29	17,8	134	82,2	30	24,6	92	75,5	8	17,8	37	82,2	2	6,3	30	93,8	6	26,1	17	73,9	75	19,5	310	80,5
ABBEY pain scale	29	17,8	134	82,2	23	18,9	99	81,1	8	17,8	37	82,2	3	9,4	29	90,6	4	17,4	19	82,6	67	17,4	318	82,6

4.2.2.4.1   Availability of CNPI scale (N = 385)

The CNPI scale was reported as the scale most available within the various wards, with 26,5% (n = 102) of respondents indicating its availability. NOPPAIN was available to 20,8% (n = 80) of respondents; PAINAD to 19,5% (n = 75), and ABBEY to 17,4% (n = 67) (see Table 4.8). According to Paice (2015:17), the CNPI is a pain rating assessment tool that is available to observe and measure pain behaviours in elderly patients with dementia or cognitive impairment during nursing care delivery. It was reported to be available as indicated in Table 4.8. The availability of the CNPI was reported not to be more than 28% in the different wards. In medical wards it was reported to be available with 28,7% (F = 35; n = 122), in cardiac wards with 28,1% (F = 9; n = 32), in obs-gynae wards with 26,1% (F = 6; n = 23), in surgical wards with 25,2% (F = 41; n = 163), and in paediatric wards it was available with 24,4% (F = 11; n = 45).

4.2.2.4.2   Availability of the NOPPAIN (N = 385)

As illustrated in Table 4.8, respondents reported that the NOPPAIN was available. However, in some of the wards, the participants disagreed about its availability. This pain rating assessment tool is used to observe pain behaviours in patients with dementia or cognitive impairment during the delivery of nursing care (Paice 2015:17). NOPPAIN was one of the least reported tools to be available with only 25,4% (F = 31; n = 122) of the respondents indicating its availability in medical wards; 21,7% (F = 5; n = 23) in obs-gynae wards; 20,0% (F = 9, n = 45) in paediatric wards; 19,0% (F = 31; n = 163) in surgical wards; and 12,5% (F = 4; n = 32) available in cardiac wards.

4.2.2.4.3   Availability of the PAINAD scale (N = 385)

The PAINAD scale, known for its use to rate pain rate in elderly patients with advanced dementia to resolve problematic behaviour and improve the quality of life (Malara et al. 2016:1224; Fry et al. 2016:1288), was available in all the wards (see Table 4.8).

This scale was indicated to be available in obs-gynae wards with only 26,1% (F = 6; n = 23) of the respondents, 24,6% (F = 30; n = 122) in medical wards, 17,8% (F = 29; n = 163) in surgical wards; 17,8% (F = 8; n = 45) in paediatric wards; and 6,3% (F = 2; n = 32) in cardiac wards (see Table 4.8).

4.2.2.4.4 Availability of the Abbey Pain scale (ABBEY) (N = 385)

As explained by Paice (2015:12), the Abbey Pain scale is used to rate and assess pain in patients with late-stage dementia or cognitive impairment. Table 4.8 illustrates that this scale used in patients with advanced dementia or cognitive impairment was reported to be the least available in most of the wards. In medical wards it was 18,9% (F = 23; n = 122) available, 17,8% (F = 8; n = 163) in surgical wards; 17,8%; (F = 8; n = 45) in paediatric; in obs-gynae wards 17,4% (F = 4; n = 23) in obs-gynae wards, and 9,4% (F = 3; n = 32) cardiac wards.

The availability of human resources is essential in conducting pain assessments to enhance the transfer of learning of pain management competencies of nurses.

4.2.2.5 Human resources (N = 385)

Human resources refers to the number of people employed in an organisation. They are regarded as a significant asset in terms of diverse talents and essential character-istics with roles, skills, and abilities to accomplish the set organisational goals (John-son & Davey 2019:92). The respondents indicated the availability of the following hu-man resources to conduct pain assessments (see Annexure 4): (1) the registered nurse with pain management training, (2) the clinical facilitators, (3) the pain nurses working in acute or chronic pain services, (4) the pain nurse specialists, (5) the nurse educators, (6) the pain management physicians, (7) the ward nurse managers, (8) and the nurse supervisors. The availability of the different cadres of human resources within wards is illustrated in Table 4.9 and discussed from the highest to the least available.

The registered nurses with pain management training were the human resource most available within the wards, with 92,7% (n = 357; N = 385) of respondents indicating their availability (see Table 4.9). The nurse educators were reported to be 89,4% available (n = 344; N = 385), the pain nurses working in acute or chronic pain services 87,8% (n = 337; N = 384), the pain management physicians 87,3% (n = 337; N = 385), the clinical facilitators 85,5% (n = 329; N = 385), the pain nurse specialists 83,1% (n = 320; N = 385), the ward nurse managers with pain management training 81,6% (n = 314; N = 385) and the nurse supervisors with pain management training 76,6% (n = 295; N = 385) (see Table 4.9). The respondents reported the availability of these human resources in different wards, as illustrated in Table 4.9.

Table 4.9: Availability of human resources (N = 385)

Human Resources	Nursing Wards																							
	Surgical				Medical				Paediatric				Cardiac				Obs- gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
Registered nurse with pain management training	158	96,9	5	3,1	111	91,0	11	9,0	37	82,2	8	17,8	31	96,9	1	3,1	20	87,0	3	13,0	357	92,7	28	7,3
Nurse educators	149	91,4	14	8,6	112	91,8	10	8,2	33	73,3	12	26,7	28	87,5	4	12,5	22	95,7	1	4,3	344	89,4	41	10,6
Pain nurses working in acute or chronic pain services	151	92,6	11	6,7	106	86,9	16	13,1	35	77,8	10	22,2	26	81,3	6	18,7	19	82,6	4	17,4	337	87,8	47	12,2
Pain management physicians	151	92,6	12	7,4	107	87,7	15	12,3	36	80,0	9	20,0	23	71,9	9	28,1	19	82,6	4	17,4	336	87,3	49	12,7
Clinical facilitators	148	90,8	15	9,2	104	85,2	18	14,8	31	68,9	14	31,1	26	81,3	6	18,8	20	87,0	3	13,0	329	85,5	56	14,5
Pain nurse specialists	143	87,7	20	12,3	99	81,1	23	18,9	33	73,3	12	26,7	27	84,4	5	15,6	18	78,3	5	21,7	320	83,1	65	16,9
Ward Nurse managers with pain management training	129	79,1	34	20,9	106	86,9	16	13,1	38	84,4	7	15,6	24	75,0	8	25,0	17	73,9	6	26,1	314	81,6	71	18,4
Nurse supervisors with pain management training	130	79,8	33	20,2	99	81,1	23	18,9	32	71,1	13	28,9	19	59,4	13	40,6	145	65,2	8	34,8	295	76,6	90	23,4

4.2.2.5.1 Availability of the registered nurse with pain management training (N = 385)

Registered nurses with pain management training are nurses empowered to be competent to conduct pain assessments (Yoo, De Gange, Kim and Oh 2019:10; Fitzgerald, Tripp and Halksworth-Smith 2017:55), and thus, it could be expected that they would be available in all wards where patients might experience pain. Their availability in the different wards is illustrated in Table 4.9. It is good to state that these nurses were reported to be nearly always available in surgical wards (f = 96,9%; F = 158; n = 163) and in cardiac wards (f = 96,9%; F = 31; n = 32). Medical wards followed with the availability of 91,0% (F = 111; n = 122), obs-gynae wards with 87,0% (F = 20; n = 23), and paediatric wards with 82,2% (F = 37; n = 45) (see Table 4.9).

4.2.2.5.2 Availability of nurse educators (N = 385)

Nurse educators' availability is crucial because they effectively pursue evidence-based interventions that empower nurses' pain knowledge and attitudes towards conducting pain assessments (Shoqirat, Mahasneh, Singh & Hadid 2019:6; Chow & Chan 2015:371). Respondents believed that nurse educators were between 73,3% and 95,7% % available in the different wards (see Table 4.9). It was reported that nurse educators were nearly always available in obs-gynae wards, with 95,7% (F = 22; n = 23), in medical wards, with 91,8% (F = 112; n = 122), in surgical wards, with 91,4% (F = 149; n = 163), in cardiac wards with 87,5% (F = 28; n = 32), and in paediatric wards with 73,3% (F = 33; n = 45) (see Table 4.9).

4.2.2.5.3 Availability of the pain nurses working in acute and chronic pain services (N = 385)

It is comforting to know that pain nurses working in acute or chronic pain service areas were available to assist with pain assessments (see Table 4.9). These nurses are described as registered nurses who specialise and are employed in pain management nursing services to support other nurses and in helping patients deal with acute and

chronic pain (Khatib & Razvi 2018:50; Rockett, Vanstone, Chand & Waeland 2017:1240). As illustrated in Table 4.9, the pain nurses were reported primarily available in surgical wards (f = 92,6% (n = 151; F = 163), followed by medical wards (f = 86,9%; F = 106; n = 122), obs-gynae wards (f = 82,6%; F = 19; n = 23), cardiac wards (f = 81,3%; F = 26; n = 32), and lastly paediatric wards (f = 77,8%; F = 35; n = 45).

4.2.2.5.4 *Availability of pain management physicians (N = 385)*

Pain management physicians are anaesthesiologists who collaboratively work with the nurses and play an essential role in conducting pain assessment and managing pain (Jai, Bakshi & Thota 2020:555; Deni, Greco, Turi, Meani, Comotti, Perotti, Mello, Colnaghi, Pasculli, Nardelli, Landoni & Beretta 2019:586). Their availability was reported as illustrated in Table 4.9. Most respondents reported these physicians to be 92,6% available in surgical wards (f = 92,6%; F = 15; n = 163). In other nursing wards, namely in medical wards, they were 87,7% available (F = 107; n = 122), in obs-gynae wards 82,6% (F = 19; n = 23), in paediatric wards 80,0% (F = 36; n = 45), and in cardiac wards they were 71,9% available (F = 23; n = 32) (see Table 4.9).

4.2.2.5.5 *Availability of the clinical facilitators (N = 385)*

Clinical facilitators are skilled registered nurses responsible for the facilitation of teaching and learning of the theoretical and clinical components in a clinical setting to deliver quality care (Sweet & Broadbent 2017:35; Phillips et al. 2017:4344), for example, reinforcing the learning of pain assessment. As is illustrated in Table 4.9 the respondents in surgical wards reported the clinical facilitators with 90,8% availability (F = 148; n = 163), respondents from obs-gynae wards reported 87,0% availability (F = 20; n = 23), 85,2% (F = 104; n = 122) in medical wards; 81,3% (F = 26; n = 32) in cardiac wards; and 68,9% (F = 31; n = 45) in paediatric wards.

4.2.2.5.6 *Availability of pain nurse specialists (N = 385)*

Pain nurse specialists collaborate with nurses to assess pain (Rocket et al. 2017:1237). Thus, these specialists were indicated to be variably available in all the

wards (see Table 4.9). The pain nurse specialists were available in all wards in different percentages: in surgical wards (f = 87,7%; F = 143; n = 163), in cardiac wards (f = 84,4%, F = 27; n = 32), in medical wards (f = 81,1%F = 99; n = 122), in obs-gynae wards (f = 78,3% F = 18; n = 23), and in paediatric wards (f = 73,3%; F = 33; n = 45) (see Table 4.9).

4.2.2.5.7   Availability of the ward nurse managers with pain management training (N = 385)

Another role player in pain management is the nurse manager, who has pain management training and is very competent in pain management (Duffield, Gardener, Doubrovsky & Wise 2019:1538). These nurse managers were reported to be 86,9% available in medical wards (f = 86,9%; F = 106; n = 122) (see Table 4.9). In paediatric wards, they were reported to be 84,4% available (F = 38; n = 45). In surgical wards, they were seen as having 79,1% availability (F = 129; n = 163), in cardiac wards, 75,0% (F = 24; n = 32), and in obs-gynae wards, 73,9% (F = 17; n = 23) (see Table 4.9).

4.2.2.5.8   Availability of the nurse supervisors with pain management training (N = 385)

Nurse supervisors with pain management training, those empowered to be competent to provide post-training supervisory support to the nurses on how to conduct pain assessments, are an important resource in the management of pain (Mahama & Ninnoni 2019:3). Their availability in the wards where patients need pain management is essential, and the respondents indicated their availability (see Table 4.9) to be in medical wards 81,1% (F = 99; n = 122), in surgical wards 79,8%; (F = 130; n = 163), in paediatric wards 71,1% (F = 32; n = 45), in obs-gynae wards 65,2% (F = 15; n = 23), and in cardiac wards 59,4% (F = 19; n = 32). It is interesting to note that supervisors were the least available in cardiac wards. This finding is supported by Bradley-Ingle (2018:34), who indicated a great shortage of nurse supervisors despite significant demand for supervision services.

4.2.2.6 Other types of support (N = 385)

The support by others, namely (1) patients, (2) pain management support groups, (3) patient pain management hotlines, and (4) patient pain management websites to support patients in pain, were identified as also being important resources to manage pain (Herr, Coyne, Ely, Gélinas & Manworren 2019:214). Peer support groups are especially beneficial to patients in pain management (Tolley, Michel, Willams & Renschler 2020:9). The mentioned resources were identified as available by respondents, as illustrated in Table 4.10. The respondents perceived other patients, other people or patients with pain to be 83,1% available (n = 320) to support pain management (Herr et al. (2019:214). It is important to note that this is the respondents' opinion and not that of the patients themselves, as they were not part of this study. The respondents identified pain management support groups to be 76,4% (n = 294) available, patient pain management hotlines 63,4% (n = 244), and the patient pain management websites 58,7% available (n = 226) (see Table 4.10). Table 4.10 indicates the availability of these other types of support in various wards, as reported by the respondents.

Table 4.10: Availability of other types of support (N = 385)

Patient supports	Surgical n = 163				Medical n = 122				Paediatric n = 45				Cardiac n = 32				Obs- gynae n = 23				TOTAL N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
Patients or (other people or patients with pain)	142	87,1	21	12,9	95	77,9	27	22,1	37	82,2	8	17,8	26	81,3	6	18,8	20	87,0	3	13,0	320	83,1	65	16,9
Pain management support groups	127	77,9	36	22,1	98	80,3	24	19,7	28	62,2	17	37,8	22	68,8	10	31,3	19	82,6	4	17,4	294	76,4	91	23,6
Patient pain management hotlines	108	66,3	55	33,7	78	63,9	44	36,1	23	51,1	22	48,9	20	62,5	12	37,5	15	65,2	8	34,8	244	63,4	141	36,6

| Patient pain management websites | 89 | 54,6 | 74 | 45,4 | 77 | 63,1 | 45 | 36,9 | 26 | 57,8 | 19 | 42,2 | 20 | 62,5 | 12 | 37,5 | 14 | 60,9 | 9 | 39,1 | 226 | 58,7 | 159 | 41,3 |

4.2.2.6.1 Availability of "peer" patients or (other people or patients with pain) (N = 385)

Patients or other people with pain have been recognised as resources that play a role as "peer" support groups in patients with cancer pain for exchanging information about pain experience, pain management, gaining recognition, emotional support, and caring for others (Huber, Muck, Maatz, Keck, Enders, Maatouk & Ihrig 2018:5). The respondents believed that other patients with pain were available to the patients in surgical wards (87,1%, F = 142; n = 163), in obs-gynae wards (87,0%; F = 20; n = 23) in paediatric wards (82,2% (F = 37; n = 45), in cardiac wards (81,3%; F = 26; n = 32), and in medical wards (77,9%; F = 95; n = 122) (see Table 4.10).

4.2.2.6.2 Availability of the pain management support groups (N = 385)

Pain management support groups help to empower patients with persistent pain and to inform them on how to employ self-pain management strategies (Clauw, Essex, Pitman & Jones 2019:185; Hylands-White, Duarte & Raphael 2017:36). Table 4.10 illustrates the respondents' views about the availability of these groups. The availability of pain management support groups was indicated to be 82,6% (F = 19; n = 23) available in obs-gynae wards, 80,3% (F = 98; n = 122) in medical wards, 77,9% (F = 127; n = 163) in surgical wards; 68,8% (F = 22; n = 32) in cardiac wards; and 62,2% (F = 28; n = 45) in paediatric wards (see Table 4.10).

4.2.2.6.3 Availability of the pain management hotlines (N = 385)

Patient pain management hotlines are services utilised by patients, families, and care providers comprising a multidisciplinary team to support such patients with traumatic or postoperative pain (Rhame, Le, Horner, Thomas, Foreman, Kreitzer & Ngwenya 2019:353). The respondents agreed that these hotlines were available, as indicated in Table 4.10). Pain management hotlines were understood by the respondents to be available in surgical wards (f = 66,3%; F = 108; n = 163), obs-gynae (f = 65,2%; F = 15; n = 23), medical wards (f = 63,9%; F = 78; n = 122), in cardiac wards (f = 62,5%;

F = 20; n = 32), and also in paediatric wards (f = 51,1%; F = 23; n = 45) (see Table 4.10).

4.2.2.6.4 Availability of the pain management websites (N = 385)

Lastly, patient pain management websites are online resources important in taking care that patients with persistent pain stay updated about self-management skills training such as assessing and managing their pain conditions (Yeh, Lee & Chou 2019:30; Devan, Perry, van Hattem, Thurlow, Shepherd, Muchemwa & Grainger 2019:1593). This finding, as is illustrated in Table 4.10, indicated the patient pain management websites that respondents in medical wards could access were 63.1% available (F = 77; n = 122), for cardiac wards, it was 62,5% (F = 20; n = 32), in obs-gynae wards it was 60,9% (F = 14; n = 23), in paediatric wards 57,8% (F = 26; n = 45), and in surgical wards 54,6% (F = 89; n = 163).

The perceptions about publications and electronic resources were also evaluated for availability to enable the nurses to assess pain to enhance the transfer of learning of nurses' pain management (see Annexure 4, subsection 7).

4.2.2.7 Publications and electronic resources (N = 385)

Publications and electronic resources are important to enhance the transfer of learning of pain management competencies of nurses (Zitzmann, Matthisson, Ohla & Joda 2020:3). The selected publications and electronic resources identified to be relevant in this study were (1) e-learning modules indicated to be 94,8% (n = 365) available, (2) best clinical practice guidelines for pain assessment 93,2% (n = 359), (3) electronic flow sheets 91,9% (n = 354), (4) a pain toolkit 86,8% (n = 334), (5) clinical updates or journals 74,8% (n = 288), (6) printed reference books 68,8% (n = 265), (7) the fact sheets 51,4% (n = 198), (8) videos on pain management 50,4% (n = 194), and (9) e-newsletters to be 44,4% (n = 171) available (see Table 4.11). These selected publications and electronic resources were reported to be available by respondents in different wards, as portrayed in Table 4.11.

Table 4.11: Availability of the publications and electronic resources (N = 385)

Publications and electronic resources	Nursing Wards																							
	Surgical n = 163				Medical n = 122				Paediatric n = 45				Cardiac n = 32				Obs- gynae n = 23				TOTAL N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F	%	F	%
E-learning modules	157	96,3	6	3,7	113	92,6	9	7,4	43	95,6	2	4,4	30	93,8	2	6,3	22	95,7	1	4,3	365	94,8	20	5,2
Best clinical practice guidelines for pain assessment	156	95,7	7	4,3	111	91,0	11	9,0	41	91,1	4	8,9	29	90,6	3	9,4	22	95,7	1	4,3	359	93,2	26	6,8
Electronic flowsheets	151	92,6	12	7,4	113	92,6	9	7,4	40	88,9	5	11,1	29	90,6	3	9,4	21	91,3	2	8,7	354	91,9	31	8,1
Pain Toolkit	139	85,3	24	14,7	108	88,5	14	11,5	40	88,9	5	11,1	27	84,4	5	15,6	20	87,0	3	13,0	334	86,8	51	13,2
Clinical updates or journals	130	79,8	33	20,2	89	73,0	33	27,0	33	73,3	12	26,7	18	56,3	14	43,8	18	78,3	5	21,7	288	74,8	97	25,2
Printed reference books	118	72,4	45	27,6	83	68,0	39	32,0	32	71,1	13	28,9	17	53,1	15	46,9	15	65,2	8	34,8	265	68,8	120	31,2
Fact sheets	78	47,9	85	52,1	69	56,6	53	43,4	20	44,4	25	55,6	18	56,3	14	43,8	13	56,5	10	43,5	198	51,4	187	48,6
Videos on pain management	87	53,4	76	46,6	61	50,0	61	50,0	24	53,3	21	46,7	11	34,4	21	65,6	11	47,8	12	52,2	194	50,4	191	49,6
E-newsletters	72	44,2	91	55,8	60	49,2	62	50,8	15	33,3	30	66,7	14	43,8	18	56,3	10	43,5	13	56,5	171	44,4	214	55,6

4.2.2.7.1 Availability of the e-learning modules (N = 385)

The e-learning modules are online instructional modules that deliver content on how to conduct pain assessment via computer, internet, multimedia or video clip, and others (Ǿmgreen, Meyer & Buhl 2019:487). E-learning modules empower nurses with skills to conduct pain assessments, as confirmed by Watt-Watson, McGillion, Lax, Oskarsson, Hunter, MacLennan, Knickle and Victor (2019:42) and are very important as part of the professional development of nurses. They were reported to be available by 96,3% (n = 157; F = 163) of respondents in surgical wards; by 95,7% (F = 22; n = 23) in obs-gynae wards; by 95,6% (F = 43; n = 45) in paediatric wards; by 93,8% (F = 30; n = 32) in cardiac wards; and by 92,6% (F = 113; n = 122) in medical wards (see Table 4.11).

4.2.2.7.2 Availability of the best clinical practice guidelines for pain assessments (N = 385)

The best clinical practice guidelines for pain assessments are recommended to be used to enhance accurate methods to assess pain (Chisholms-Burns, Schwihammer, Malone, Kolesar, Bookstaver, and Lee 2019:526). In surgical wards, these guidelines have been reported to be available with 95,7% (F = 156; n = 163) of the respondents, as supported in the study by Smeland, Twycross, Lundeberg and Rustøen (2018:596). In obs-gynae wards, 95,7% (F = 22; n = 23), 91,1% (F = 41; n = 45) in paediatric wards, 91,0% (F = 111; n = 122) in medical wards, and 90,6% (n = 29; F = 32) in cardiac wards (see Table 4.11).

4.2.2.7.3 Availability of electronic flowsheets (N = 385)

To document clinical data of patient progress, such as pain assessment, electronic flowsheets are suitable computer software with sections to complete a patient's health information (Kronenberger & Ledbetter 2020:194; Stuebe, McKenzie, Tucker, Tully, Bryant & Verbiest 2018:1). Both in the surgical wards and medical wards, the

electronic flowsheets have been reported to have had a 92,6% availability (see Table 4.11). Respondents from obs-gynae wards reported the electronic flowsheets to be 91,3% (n = 21, F = 23) available, 90,6% (n = 29; F = 32) from cardiac wards, and 88,9% (n = 40; F = 45) from paediatric wards (see Table 4.11).

4.2.2.7.4 Availability of the Pain Toolkit (N = 385)

Another publication and electronic resource, the pain toolkit is an information booklet or internet application available for patients that suffer from pain and used to explain pain in simple language and provide support with skills on how to assess and self-managing their pain (Findley, Ryan, Cartwright & Martin 2019:2). The respondents reported that the pain tool kit was the most available in paediatric wards (f = 88,9% (F = 40; n = 45), followed by medical wards (f = 88,5%; n = 108; F = 122), obs-gynae wards (f = 87,0%; n = 20; F = 23), surgical wards (f = 85,3%; n = 139; F = 163), and in cardiac wards (f = 84,4%; n = 27; F = 32) (see Table 4.11).

4.2.2.7.5 Availability of the clinical updates or journals (N = 385)

Clinical updates or journals, for example, IASP online pain clinical updates, are indicated to be used to support patients in pain management and education on self-management strategies of pain (Amris, Jones & Williams 2019:4). Furthermore, Kim (2019:1) indicated another example of clinical updates or journals, such as nursing journals that can be shared to support patients in pain management. The indicated clinical updates or journals were reported to be most available in surgical wards (f = 79,8%; F = 163; n = 130), followed by obs-gynae wards (f = 78,3%; F = 23; n = 18), paediatric wards (f = 73,3%; F = 45; n = 33), medical wards (f = 73,0%; F = 122; n = 89), as well as in cardiac wards (f = 56,3%; F = 18; n = 32) (see Table 4.11).

4.2.2.7.6 Availability of the printed reference books (N = 385)

Respondents identified the printed reference books to be available, as portrayed in Table 4.11. These books are intended to locate information or a discipline-specific

subject such as pain management (Santos, Machado, Ribeiro, Neto, Ribeiro & Menezes 2018:326). As portrayed in Table 4.11, printed reference books were indicated to be primarily available in surgical wards (f = 72,4%; F = 118; n = 163), followed by paediatric wards (f = 71,1%; F = 32; n = 45), medical wards (f = 68,0%; n = 83; F = 122), obs-gynae wards (f = 65,2%; F = 15; n = 23), and lastly cardiac wards (f = 53,1%; F = 17; n = 32).

4.2.2.7.7 Availability of the fact sheets (N = 385)

Fact sheets are pieces of paper or electronic documents that provide essential information and prepare patients to manage their pain (Atkinson, Armbruster & Evans 2021:382; Alotaibi et al. 2018:531). Respondents that agreed that facts were available to conduct pain assessments were 56,6% (F = 69; n = 122) in medical wards, 56,5% (F = 13; n = 23) in obs-gynae wards, and 56,3% (F = 18; n = 32) in cardiac wards, 47,9% (F = 78; n = 163) in surgical wards, and in paediatric wards it was with 44,4% (F = 45; n = 20) (see Table 4.11). This finding is supported by IASP (2017:2), which says that pain fact sheets play a part in assessing pain.

4.2.2.7.8 Availability of videos on pain management (N = 385)

Videos on pain management are specific videos that promote the use of pain management strategies or observational pain assessment approaches (Elmali & Akpinar 2017:40; Ammaturo, Hadjistavropoulos & Williams 2017:1895). The respondents from surgical wards reported the videos on pain management to be 53,4% available (F = 87; n = 163), 53,3% (F = 24; n = 45) in paediatric wards, and 50,0% (F = 61; n = 122) in medical wards (see Table 4.11). In the other wards, videos on pain management were reported to have less than 50% availability: 47,8% in obs-gynae wards (F = 11; n = 23) and 34,4% in cardiac wards (F = 11; n = 32) (see Table 4.11).

4.2.2.7.9 Availability of E-newsletters (N = 385)

E-newsletters which are used as updates that provide information by subscribing through e-mails, for example, "PAIN IASP" specifically give information on how to assess pain (Rozario 2018: E6). They were indicated available in various wards (see Table 4.11). Even though the respondents believed that e-newsletters were available, they were not reported to be available more than 43%. The availability of newsletters was reported to be available with 49,2% (F = 60; n = 122) in medical wards, 44,2% (F = 72; n = 163) in surgical wards, 43,8% (F = 14; n = 32) in cardiac wards, 43,5% (F = 10; n = 23) in obs-gynae wards, and with 33,3% (F = 15; n = 45) in paediatric wards (see Table 4.11).

The findings indicated the availability of organisations that specialise in pain research, treatment, clinical practice, and education to enhance the transfer of pain management learning.

4.2.2.8 Organisations that specialise in pain management (N = 385)

Internationally some organisations specialise in pain management that includes, research, treatment, clinical practice, and education to support pain management strategies, for example, Pain Societies, IASP, and the WHO (Bhandari, Goddard, Campbell, Sangster & Stevens 2019:5; Yamitsky & Keefe 2016:1). Of the 385 respondents, 78.45% (n = 302) indicated that organisations that specialise in pain management were available to them (see Table 4.12).

Table 4.12:   Availability of organisations that specialise in pain management (N = 385)

Organisations that specialise in pain research, treatment, clinical practice, and education	Nursing Wards																							
	Surgical				Medical				Paediatric				Cardiac				Obs-gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 385			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n =	%	n =	%
	128	78,5	40	21,5	96	78,7	26	21,3	35	77,8	10	22,2	24	75,0	8	25,0	19	82,6	4	17,4	302	78,4	83	21,6

Respondents indicated the availability (access to these organisations) in obs-gynae wards (f = 82,6%; F = 19; n = 23), in medical wards (f = 78,7%; F = 96; n = 122), in surgical wards (f = 78,5%; F = 128; n = 163) in paediatric wards, in surgical wards (f = 77,8%; F = 35; n = 45), and in cardiac wards (f = 75,0%; F = 24; n = 32) to support with pain management (see Table 4.12). The policies for pain management were identified for availability as they guide the nurses on how to assess and manage pain to enhance the transfer of learning of pain management of nurses (see Annexure 4, sub-section 9).

4.2.2.9 Policies for pain management (N = 385)

Policies are principles or guidelines that govern activities adopted and proposed by an organization expected to be followed by its members (Mosby 2013:1415). The awareness of the availability of these policies for pain management is important to standardise and guide the nurses on how to assess and manage pain (Bonkowski, De Gange, Cade and Bulla 2018:184; Garcia, Bonilla, Kraychete, Flores, de Valtolina & Guerreo 2017:395), in any healthcare institution. Policies on pain management availability are reflected in Table 4.13. Within wards, 99,7% (n = 384; N = 385) of the respondents indicated that organisations specialising in pain management were available to them (see Table 4.13). Respondents from medical wards, paediatric wards, cardiac wards, and obs-gynae wards reported the policies for pain management to have had 100% availability and 99,4% availability in surgical wards (F = 162; n = 163) (see Table 4.13).

Table 4.13: Availability of the policies for pain management (N = 385)

Policies	Nursing Wards																						
	Surgical				Medical				Paediatric				Cardiac				Obs-gynae				TOTAL			
	n = 163				n = 122				n = 45				n = 32				n = 23				N = 4			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n =	%	n =	%
	162	99,4	1	0,6	122	100	0	0	45	100	0	0	32	100	0	0	23	100	0	0	384	99,7	1	0,3

The narrative responses of respondents who added additional comments were open-coded and thematically analysed.

4.2.3 Thematic content analysis

Only eight of the 385 respondents answered the open-ended questions and wrote narratives. The narratives addressed only two aspects, namely (1) additional resources needed to motivate pain management and (2) hindering factors to pain management. Participants believed that staff needs to be motivated by acknowledging good pain management skills, as was indicated by responses such as:

> *"Motivate staff and provide feedback".*

> *"[Award a certificate] for example [an] outstanding in BEST Care certificate to staff monthly".*

These findings are supported by Kee, McCrate, McLennon, Wall and Jones (2017:141), who report that the awareness of additional pain resources and feedback were motivating factors for pain management competency.

A participant commented about a hindering factor to pain management:

> *"pain assessment has too many mnemonics, which can hamper interest".*

4.3 PHASE 2

In Phase Two, the objective was to identify and describe the nurses' characteristics and learning styles that enhance the transfer of learning in the context of two Saudi Arabian teaching hospitals.

4.3.1 Demographic characteristics

As explained, only one respondent did not complete the second questionnaire. Therefore, 384 out of the 385 respondents participated in Phase 2. After comparing all the demographic information from the two data sets, it was clear that the individual who did not complete the questionnaire was a female nurse from the Philippines with a diploma at the highest level of education who worked in a cardiac ward.

4.3.2 Respondents' characteristics identified to enhance transfer of learning of pain management competencies (N = 384)

Three hundred and eighty-four (N = 384) respondents responded on the characteristics identified to enhance the transfer of learning of pain management competencies. These characteristics were divided into (1) the application of what was learned before, (2) learner types, (3) motivations to learn, and (4) the motivations to apply knowledge in practice, as explained by Donavan and Darcy (2011:125). Respondents **rated** characteristics relevant to them on a Likert scale where "one" implied "this does not describe me at all" and "ten" to "this describes me perfectly". According to the characteristics identified to describe them best, the respondents identified the three most relevant ones. The three were then rated from high to low: **first, second, and third relevant**. The characteristics rated as most relevant were based on the weighted frequencies and percentage ratings obtained.

Applying what was learned before was the respondents' top-rated identified characteristic to enhance the transfer of learning of pain management competencies.

4.3.2.1 Application of what was learned before (N = 384)

Applying what was learned before refers to applying the experience, knowledge, and skills gained by respondents during pain management training and lessons in their clinical practice (Thompson, Johnson, Milligan & Briggs 2018:2155). In this study context, applying what nurses have learned before refers to the transfer of learning of pain

management competencies. The respondents judged every mentioned example of applying knowledge on a scale of 1–10 to determine the top four rated ways of applying knowledge. The top-rated description of how knowledge learned before is applied is illustrated in Figure 4.4. The **four methods to explain how what was learned before was applied (application of what has been learned)** are discussed below.
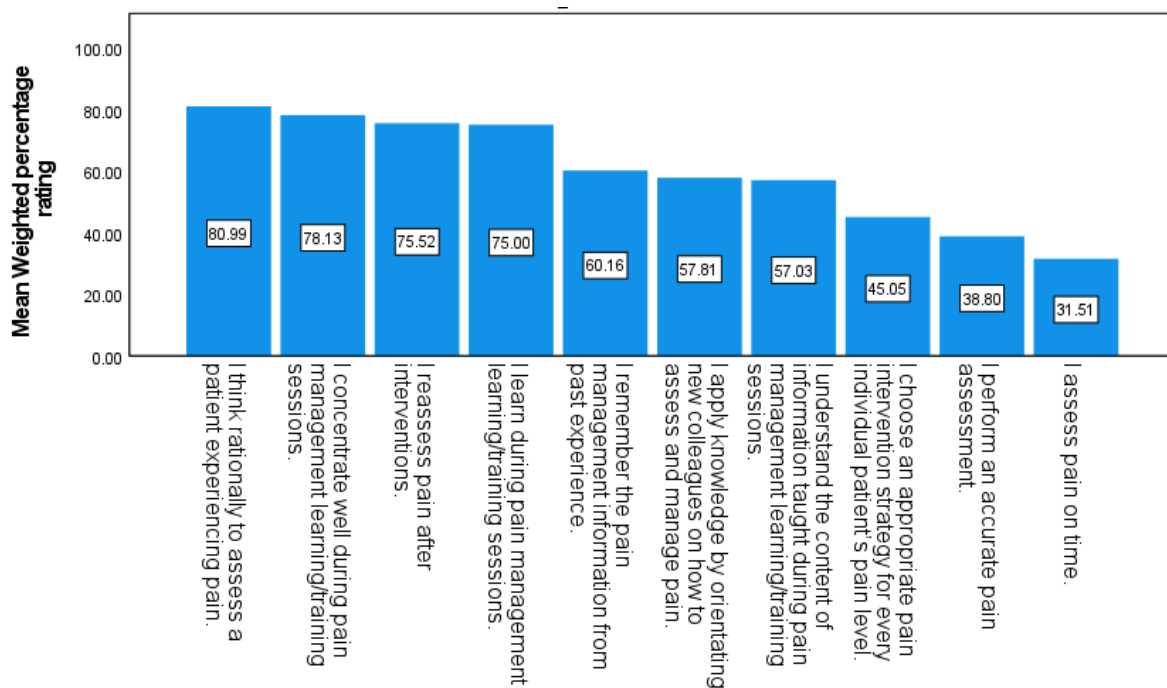
Figure 4.4: Top four applications of what was learned before (N = 384)

The **first rated** aspect indicated by respondents as descriptive of how they apply what they have learned before was that they could rationally think to assess a patient experiencing pain with a weighted frequency of 311 (80.99%, N = 384) (see Figure 4.4). According to Yue, Zhang, Zhang and Jin (2017:94) and Johansen and O'Brien (2016:42), nurses are knowledgeable executors who can use their critical thinking, cognitive, and decision-making skills during their clinical practice skills related to pain management, thus supporting the study findings. This implies that cognitive abilities enable the nurses to apply their rational thinking to assess a patient experiencing pain.

The **second** highest-rated aspect illustrative of how the respondents applied what they have learned was that they **could concentrate well during pain management learning or training** with a weighted frequency of 300 (78,13%; N = 384) (see Figure 4.4). This means that the nurses' ability to focus well on the information given during pain management learning/training sessions enhanced the transfer of learning of pain management competencies. Manwere, Chipfuwa, Mukwamba and Chironda (2015:5) state that continuing education with necessary information organised by hospitals significantly impacts nurses' knowledge of pain management.

The **third** aspect was that they could **reassess pain after interventions,** with a weighted frequency of 290 (75.52%; N = 384). Respondents' ability to apply what they learned before was, according to participants, proven by their ability to reassess pain after pain interventions as supported by the study findings of other researchers (Jacklyn 2019:14; Mazara, Zareel, Gharib & Aljazzazi 2016:1; El Rahi, Zaghloul & Murillo 2017:113).

Respondents rated learning during pain management learning or training sessions fourth. The idea that they were positively influenced by what was learned before was chosen by respondents with a weighted frequency of 288 (75%; N = 384) (see Figure 4.4). It was demonstrated by the study of Aloitabi, Higgins, Day and Chan (2018:531) that paediatric pain management educational programmes for nurses and other health professionals could reinforce their comprehensive content and quality of competency.

4.3.2.2 Learner types (N = 384)

The learner type is a characteristic known to influence the transfer of learning. Respondents, therefore, had to describe themselves as learners by rating the learning styles (how the style relates to them) described in the questionnaire. In this way, the learning styles of the respondents could be identified as their impact on the transfer of learning specifically related to pain management competencies. The top-rated

description of how respondents described what type of learners they were is illustrated in Figure 4.5. The **three learner types** that best describe the respondents are discussed below.
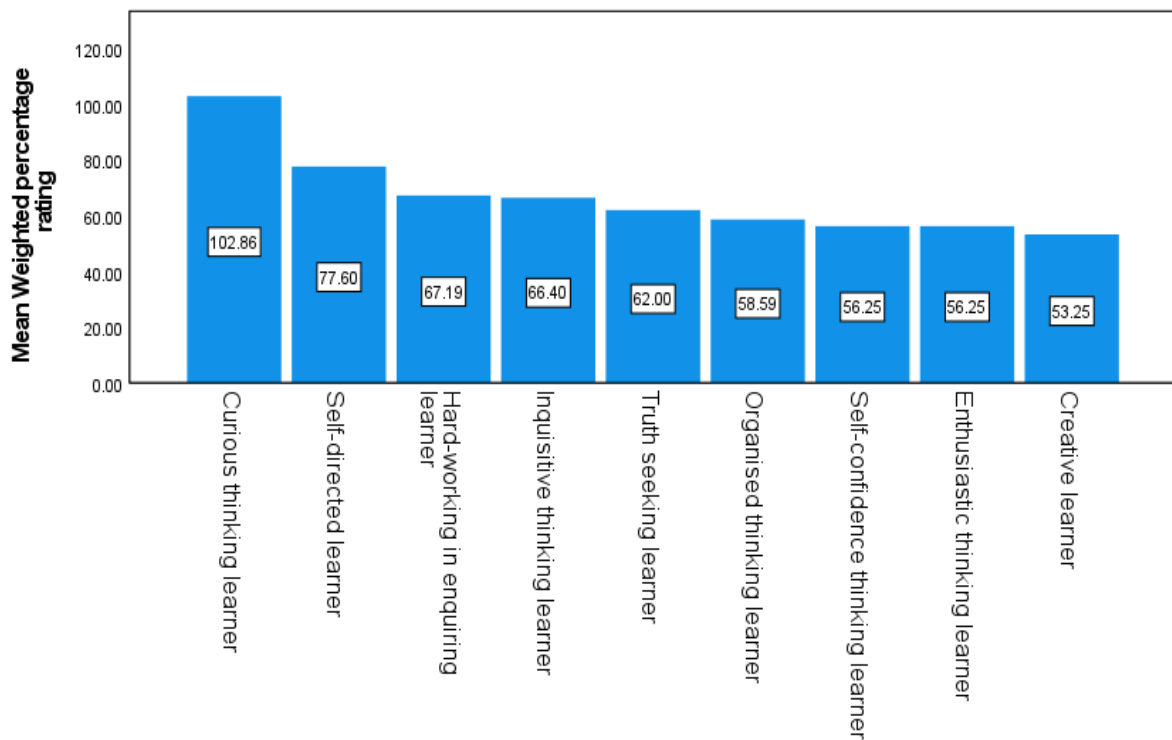
Figure 4.5: Learner types (N = 384)

The learner type identified as most applicable to the respondents with a weighted frequency of 395 (102.86%; N = 384) was the **curious thinking learner type** (see Figure 4.5). Di, Danxia and Chun (2019:495) and Yang et al. (2018:46) indicate that nurses with this learning style are high-order thinking learners, enabling them to be adventurous and keen to explore new things about pain management in their workplace.

The **self-directed learner** was rated second with a weighted frequency of 298 (77,60%; N = 384) (see Figure 4.5), revealing that a majority of respondents indicated they were self-directed learners. Lemmetty and Collin (2019:61) demonstrate in their study that nurses with a self-directed learning style can take responsibility in their

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workplaces for their learning practices, such as pain management and show their autonomy, self-guided and self-managed observations that enable them to be flexible to apply what they have learned before.

The **third-rated** learner type indicated by the respondents as their learning style described them as **hard-working enquiring learners** with a weighted frequency of 258 (67.19%; N = 384) (see Figure 4.5). As confirmed by Burger and Trehan (2018:131), most of the respondents were working hard by doing assigned work, listening attentively during pain management education sessions, revising the work given and being able to put in a considerable amount of practice to be successful in learning and apply skills of what was learned before.

4.3.2.3 Motivation to learn (N = 384)

The motivations referred to in this context are how the respondents described their desire to join and learn the study content to enhance the transfer of learning of pain management competencies (see Annexure 5). Respondents described how they were motivated to learn by rating the aspects described in the questionnaire. The top-rated descriptions of how respondents described what motivated them to learn about pain management are illustrated in Figure 4.6. **The three top-rated** motivations to learn are discussed in detail below.
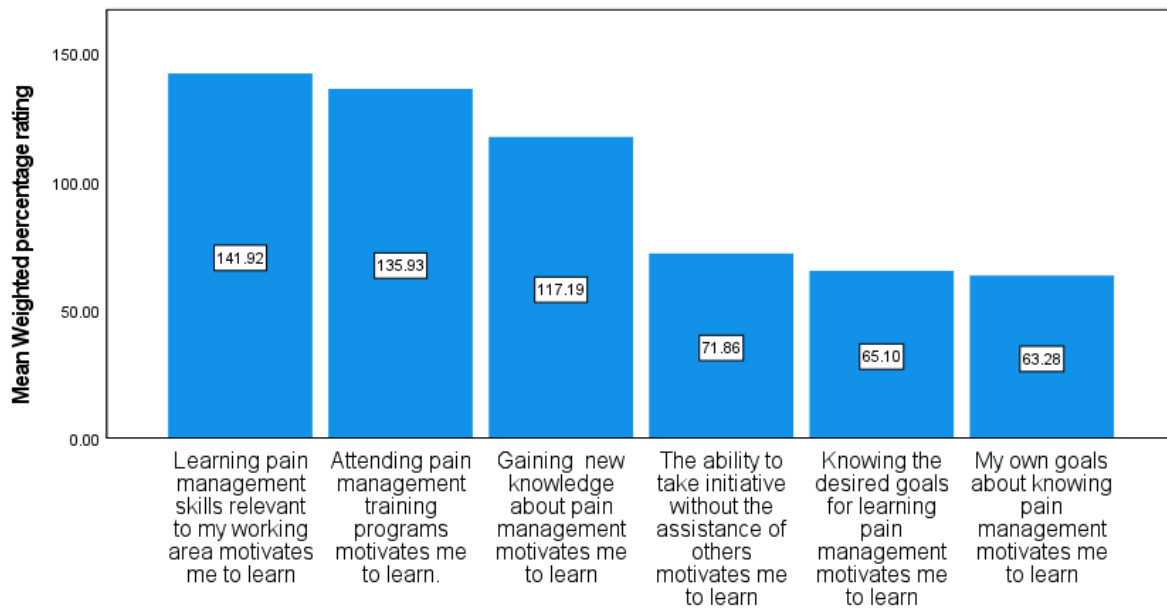
Figure 4.6: Top three motivations to learn (N = 384)

Figure 4.6 portrays **learning pain management skills relevant to their working areas** as the most relevant motivation to learn (rated first), with a weighted frequency of 545 (141,92%; N = 384). According to Young, Goldbold and Wood (2018:172) and Aktas and Karabukut (2016:128), nurses were motivated to learn the essential pain management skills that were adapted to the context of their clinical practice. Nurses' knowledge and attitudes were reported to be influenced positively by receiving a brief and targeted educational program specific to managing pain in complex cases (Keen, McCrate, McLennon, Ellis, Wall and Jones 2017:143).

Respondents indicated their second-highest rated motivation to learn was attending pain management training programs with a weighted frequency of 522 (135,93%; N = 384) (see Figure 4.6). The respondents' motivation to learn by attending pain management educational training programmes was shown in the study by Peterson, Carlfjord, Schaller Gerdle and Larrsson (2017:20). Furthermore, Chaghari, Saffari, Ebadi and Ameryoun (2017:31) suggested that to motivate nurses to attend and learn pain management training programs they must be provided with a self-development

opportunity that includes the creation of informal learning opportunities, tangible support, the provision of time, information, resources, and reward strategies.

Gaining new knowledge about pain management was rated third with a weighted frequency of 450 (117.19%; N = 384) (see Figure 4.6). Respondents indicated that increasing knowledge was their driving force to learn during pain management training programs, as supported by Lin, Chen and Liu (2017:3556).

4.3.2.4 *Motivation to apply knowledge in practice (N = 384).*

Motivation to apply knowledge in practice is a characteristic enhancing the transfer of learning. Respondents' ratings (see Annexure 5) also enabled them to describe what motivates them to apply their knowledge in practice. Therefore, the respondents identified their top-rated motivations to apply knowledge in practice, as illustrated in Figure 4.7. The **three top-rated** characteristics that describe what was **motivational in applying knowledge in practice** are reflected in Figure 4.7**.**
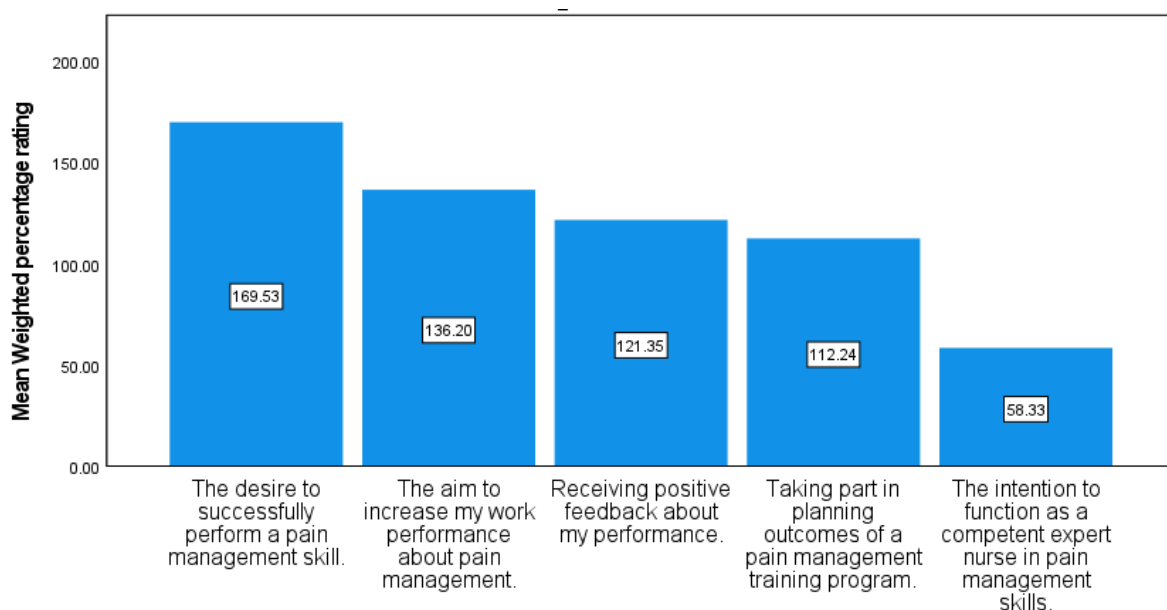
Figure 4.7: Top three motivations to apply knowledge in practice (N = 384)

The first ranked quality indicated by respondents was that they have **the desire to successfully perform a pain management skill** with a weighted frequency of 651 (169.53%; N = 384). The need for nurses to perform pain management skills was shown to be influenced by the extrinsic motivation that improves their autonomy, competence, and the relatedness to apply in practice what they have learned (Zainuddin 2018:77; Nafukho, Alfred, Chakraborty & Johnson 2017:333).

Rated second was **that they aimed to increase their work performance in pain management** with a weighted frequency of 523 (136.1979%; N = 384). In their study, Olusadum and Anulika (2018:55) uphold that motivation impacts an individual's performance to achieve the organisation's objectives, such as performance about pain management practice of what they have learned. This indicated that the nurses' intentions to improve their pain management performance motivated them to apply what they had learned.

Receiving positive feedback about their performance was rated third with a weighted frequency of 466 (121.35%; N = 384) (see Figure 4.7). Nafukho et al. (2017:334) indicate that nurses are motivated to transfer what they have learned about pain management if there is a supportive climate of transfer of learning from peer support, their supervisors, and top management at the workplace. These things positively influence nurses to practice what they have learned, such as pain management (Nafukho et al. 2017:334).

4.3.3 Learning styles identified to enhance nurses' transfer of learning of pain management competencies (N = 384)

The concept "learning styles" refers to an individual's preferred ways of absorbing, processing, comprehending, and retaining new information and skills (how one learns) (Torlone & Vryonides 2016:63). Respondents rated their preferred learning style from the list of fourteen learning styles mentioned as relevant to them to enhance the transfer of learning of pain management competencies (see Annexure 5). The learning

styles rated as most preferred were based on the weighted frequencies and percent-age ratings obtained from their ratings and rankings.

Five top-rated learning styles identified by the 384 respondents are portrayed in Figure 4.8.
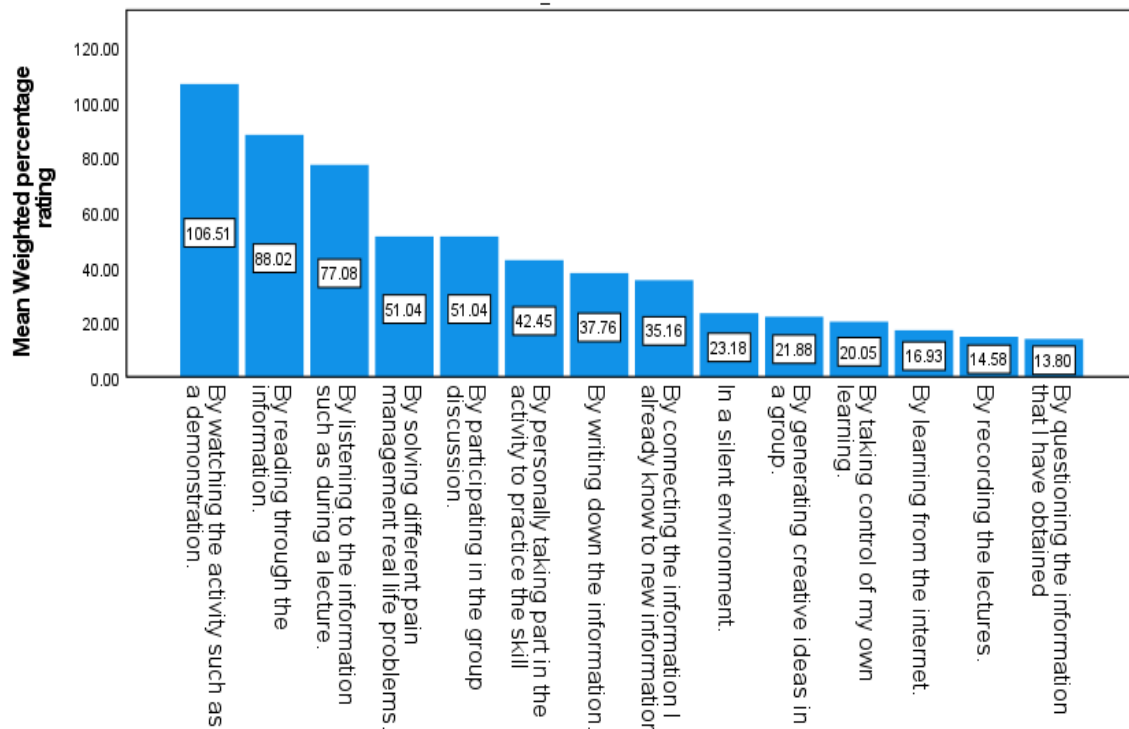
Figure 4.8: Top five learning styles of preferences (N = 384)

Rated **first** was that transfer of learning happens when they can watch the activity, **such as during a demonstration,** with a weighted frequency of 409 (106.51%; N = 384) (see Figure 4.8). Thus, most respondents were considered visual learners who preferred to watch demonstrations and visual representations of presented material, including pictures, diagrams, and flow charts, as mentioned by other authors (Mangold, Kunze, Quinonez, Taylor & Tenison 2019:3).

Respondents indicated that learning by **reading through the information (**rated **second**) was a relevant style of learning with a weighted frequency of 338 (88.02%; N =

384) (see Figure 4.8). This learning style was indicated by Mangold et al. (2019:3) for learners who prefer to learn using written text and spoken explanations.

The learning style, which was rated third, with a weighted frequency of 296 (77.08%; N = 384), was learning **by listening to the information, such as during a lecture** (see Figure 4.8). Listening as a learning style represents auditory (aural) learners who prefer to learn from written and spoken explanations (Mangold et al. 2019:3).

The fourth style was that they preferred learning **by solving different pain management real-life problems** with a weighted frequency of 196 (51.04%; N = 384) (see Figure 4.8). Problem-based learning includes the ability to solve the problem by applying what has been learned and the associated metacognitive abilities (Siagan, Saragih and Sinaga (2019:336), which applies to these respondents in this study.

The respondents' judgement of their learning style rated **fifth** was indicated **by participating in a group discussion** with a weighted frequency of 196 (51.04%; N = 384) (see Figure 4.8). According to Mangold et al. (2019:3), nurses who prefer to participate in groups were considered to be active learners (Mangold et al. 2019:3). This was relevant to some of the respondents in this study, suggesting that they preferred to actively discuss the concepts of pain management in groups that enhanced their competencies.

4.3.4   Thematic content analysis

Seven out of 384 respondents wrote seven different narrative responses to answer the open-ended question. The narratives revealed two themes, namely, (1) active learning strategies during pain management training and (2) effective communication is essential to facilitate pain assessment. The following quotes illustrate some participants' learning styles that needed to be adopted during and after pain management training:

"*I hope there will be more lectures about pain management which will be not [too] long but good with information [and] time to practice it clinically, such as group discussions*".

These findings are supported by the recommendations in the study by Blau and Shamir-Inbal (2017:79), who emphasise using active learning, such as individual reflection with peer feedback, collaboration, self-regulation, and teamwork during training to enhance the transfer of learning.

The participants commented on effective communication:

"*Communication barrier is discouraging effort[s] to bring the gap between learning to the real context*".

"*By culture, people perceive the scales differently, personal experience and what [the] patient said [about] pain is so subjective that can be confusing*".

Dithole, Thupayagale-Tsheneagae, Akpor and Moleki (2017:4) alluded to the use of effective communication between nurses and patients as crucial to facilitating quality patient care, including pain assessment.

4.4 PHASE 3

The objectives of Phase 3 were to identify the resources available to conduct a pain assessment, explore the teaching approaches employed during pain management education of nurses, and describe the learning content regarding pain assessment and management as well as the transfer of learning climate within the hospitals' nursing care areas (see Annexure 8).

4.4.1 Demographic characteristics (N = 47)

The demographic characteristics of the respondents (N = 47) entailed gender, age, nationality, highest education qualification, and nursing care areas.

4.4.1.1 Gender of the clinical facilitators (N = 47)

The clinical facilitator respondents were predominantly female (97.87%; n = 46) and only 2,13% (n = 1) male (see Figure 4.9). This is not a strange finding as more female nurses are evident globally (Badu et al. 2019:9). The gender distribution within Saudi Arabia can specifically be attributed to few male nurses graduating and joining the nursing workforce (Punshon et al. 2019:28; Alboliteeh et al. 2017:7).
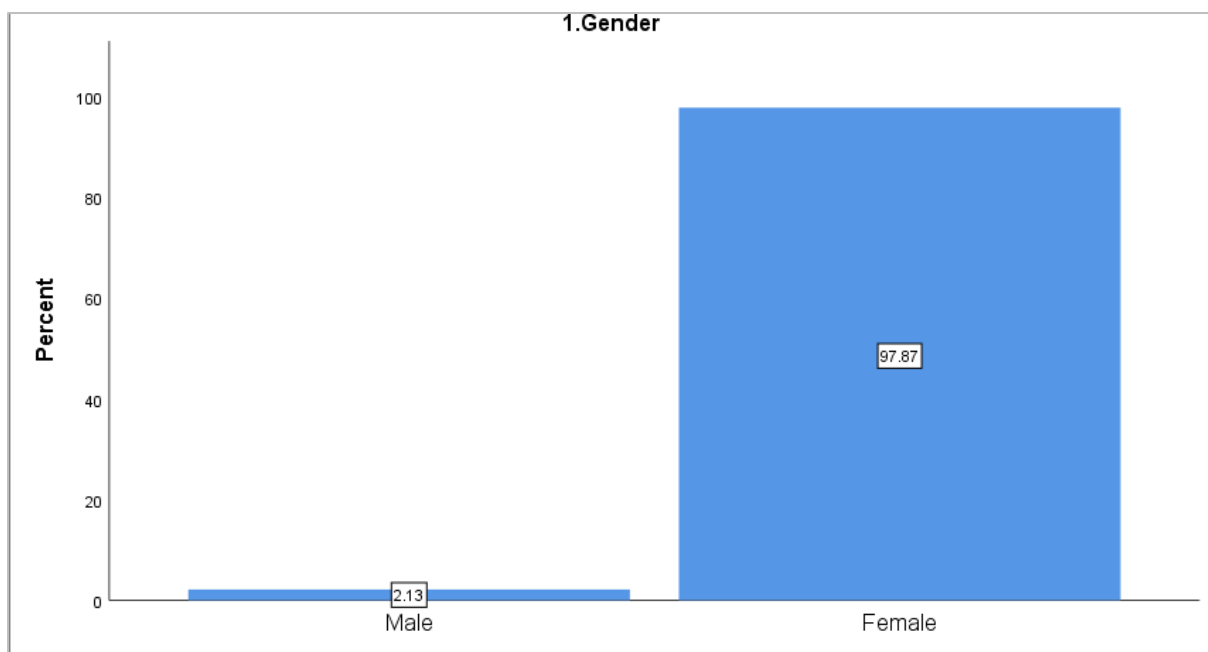
Figure 4.9 Gender of clinical facilitators (N = 47)

4.4.1.2 Age of clinical facilitators (N = 47)

The respondents' mean age was 41.6 years. The youngest respondent was 29 years old, and the eldest was 61 at the time of data gathering. The age of clinical facilitators is relevant as it can be related to skills mix, relationships, and expertise in clinical facilitation roles to support other clinical nursing staff from a culturally, academically and linguistically diverse group (Bostick, Norman, Sharma, Toxopeus, Irwin & Dhillon 2021: 24; Lin, Del Fabbro, Needham, Sidwell & Shaw 2021:4). The standard deviation

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in age was 7.626 and the distribution of clinical facilitators' age was negatively skewed since the mean age was 41, less than the median age of 42 (see Figure 4.10). This suggests that clinical facilitators' age, experiences, and continued professional development are essential in gaining expertise in clinical practice (Thomas and Kellgren 2017:232).
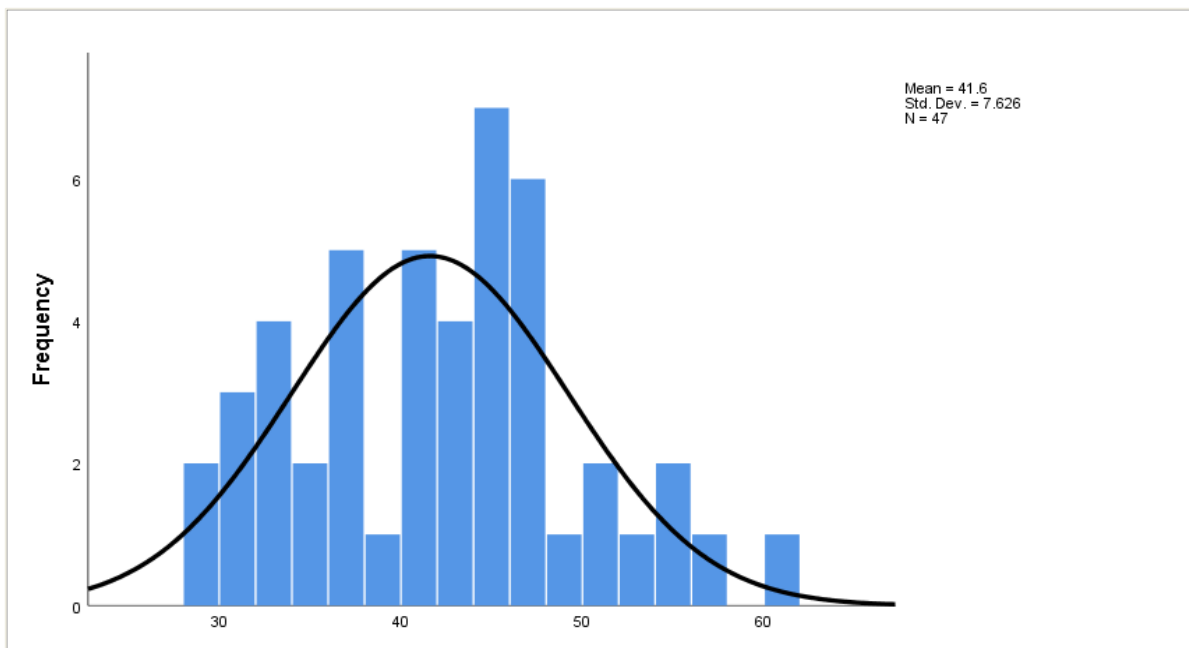
Figure 4.10 Age of clinical facilitators distribution (N = 47)

4.4.1.3 Nationality of clinical facilitators (N = 47)

The respondents' nationalities are as illustrated in Table 4.14.

Table 4.14: Clinical facilitators' nationality (N = 47)

Nationality	n =	f = %
Filipino	19	40.4
Malaysian	9	19.1
South African	7	14.9
Saudi	5	10.6

Jordanian	2	4.3
Czech	1	2.1
Egyptian	1	2.1
Indian	1	2.1
Irish	1	2.1
Singaporean	1	2.1
Total	47	100.0

It was important to describe the respondents' nationality to demonstrate the diversity among the clinical facilitators, such as cultural, academic, and linguistic backgrounds that may enhance the transfer of learning of pain management competencies of nurses (Yanaprasasart & Lüdi 2018:835). Table 4.14 highlights the ten (10) diverse nationalities of clinical facilitators who participated in the study. Nineteen (f = 40.4%) were Filipino, 9 were Malaysians (f = 19,1%), 7 were South African (f = 14.9%), 5 (f = 10,6%) were Saudi; 2 (f = 4.3%) were Jordanian, while only one (f = 0.5%) participant was from the Czech Republic, Egypt, India, Ireland and Singapore. Notably, 89.4% (n = 42) of respondents were non-Saudis. The diversity of respondents' nationality characteristics enabled them to apply their clinical skills, education experiences, and communication skills effectively with others from a similar background to enhance the transfer of learning of pain management competencies of nurses (Day & Beard 2019:280).

4.4.1.4 Education Qualifications (N = 47)

Clinical facilitators' role is to facilitate the development of students' critical thinking skills and support those nurses who have to facilitate student learning and who have to apply their knowledge, in this study context, pain management skills to clinical settings (Phillips, Duke & Weerasuriya 2017:4344). Clinical facilitators can undergo different levels and types of education, including pain management training that can be

applied in practice (Suliman & Aljezawi 2018:529). Thus, a clinical facilitator is a nurse who completed a nursing education qualification such as a bachelor's degree in nursing, postgraduate diploma, honours degree, master's degree and or a diploma in nursing (Phillips et al. 2017:4348), and someone with a diverse background and with core competencies in pain management. The qualifications the respondents attained in this study were master's degrees (n = 4; f = 8,5%, Bachelor's degrees (n = 38; f = 80,9%), and Diplomas in nursing (n = 5; f = 10,6%) (see Figure 4.11).
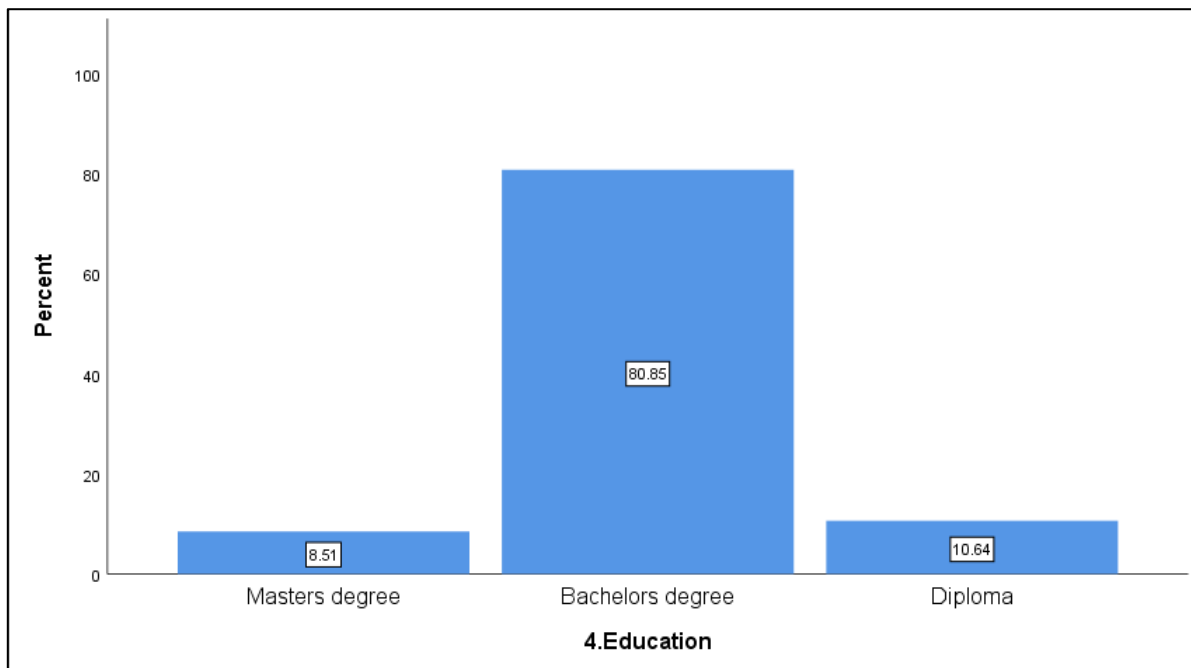
Figure 4.11   Clinical facilitators' Highest Education Qualifications distribution

(N = 47)

Academic qualifications are important to motivate participation in supporting learning and enhancing registered nurses' and students' clinical education, such as pain management relevant to clinical practice (Ogbolu Scrandis & Fitzpatrick 2017:9; Sweet & Broadbent 2017:35).

The respondents' highest educational qualifications varied largely between their countries of origin (see Table 4.15).

Table 4.15:   Country of origin and highest education qualifications (N = 47)

Nationality	Total number		Master's degree		Bachelor's degree		Diploma	
	n	f = %	n	f = %	n	f = %	n	f = %
Filipino	19	40.4	1	2.1	18	38.3	0	0
Malaysia	9	19.1	0	0	8	17.0	1	2.1
South African	7	14.9	0	0	3	6.4	4	8.5
Saudi	5	10.6	2	4.3	3	6.4	0	0
Jordanian	2	4.3	0	0	2	4.3	0	0
Czech	1	2.1	1	2.1	0	0	0	0
Egyptian	1	2.1	0	0	1	2.1	0	0
Indian	1	2.1	0	0	1	2.1	0	0
Irish	1	2.1	0	0	1	2.1	0	0
Singaporean	1	2.1	0	0	1	2.1	0	0
Total	47	100.0	4	8.5%	38	80.9%	5	10.6%

Of the respondents who owned a master's degree, two (f = 4,3%) were originally from Saudi Arabia, and one each from the Czech Republic and the Philippines. Of the bachelor's degree qualified, 18 (f = 38.3%) were from the Philippines; eight (f = 17%) were from Malaysia; three each from Saudi Arabia and South Africa; two (f = 4.3%) from Jordan, while one each from Egypt, India, Ireland, and Singapore. The diploma-prepared participants' origins were four (f = 8.5%) from South Africa and one (f = 2.1 %) from Malaysia (see Table 4.15). This finding concurs with the study of Jayasekara, Smith, Hall, Rankin, Smith, Visvanathan and Friebe (2018:122), which found that clinical facilitators in this study context have diverse educational preparedness, enabling them to apply their pain management skills.

4.4.1.5 Nursing wards worked in (N = 47)

The clinical facilitators predominantly perform the role of promoting clinical competency and enhancing the transfer of learning of pain management competencies (Rafii, Ghezeljeh and Nasrollah 2019:1411). Table 4.16 indicates the various nursing wards where the 47 respondents were responsible for facilitation and mentoring.

Table 4.16: Clinical facilitators' nursing wards of work (N = 47)

Nursing wards	n =	f = %
Medical	16	34.0
Surgical	15	31.9
Paediatric	7	14.9
Obs-gynae	5	10.6
Cardiac	4	8.5
Total	47	100.0

Sixteen (f = 34.0%) respondents were responsible for medical wards, 15 (f = 31,9%) for surgical wards, seven (f = 14,9%) for paediatric wards, five (f = 10.6%) for obs-gynae wards, and four (f = 8,5%) for cardiac wards (see Table 4.16). These findings show that most clinical facilitators were in medical and surgical wards, as demonstrated in the study by Rafii et al. (2019:1411).

4.4.2 Resources available to conduct pain assessment (N = 47)

Respondents were also asked which resources were available to conduct pain assessments in the nursing wards for which they are responsible (see Annexure 8, Section B). The same tools discussed earlier (see Section 3.9) are relevant. It was

important to redo the exercise by asking the nurse facilitator respondents the same questions (see Annexure 8, Section B) to confirm what the nurse respondents identified as the available tools to assess the pain. The availability of the same tools identified by nurses and the 47 clinical facilitators in this phase is important. It would allow the facilitator to teach nurses how to implement the tool in practice, thus facilitating the transfer of learning about pain management utilising different tools.

Different systematic pain assessment guide tools for pain history taking were assessed for the availability of resources to conduct pain assessments.

4.4.2.1 Systematic pain assessment guides for pain history taking (N = 47)

The 47 respondents reported the availability of the five systematic pain assessment guides, namely (1) WILDA, (2) PQRST, (3) OPQRSTUV, (4) COLDSPA, and (5) QUEST for pain history taking during pain assessment as illustrated in Table 4.17.

Table 4.17: Availability of the pain assessment guides (N = 47)

Pain assess-ment guide tools	Nursing Wards																				
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL	
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47	
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	n	%	n	%
WILDA	16	100	0	0	15	100	0	0	6	85,7	1	14,3	4	80,0	1	20,0	4	100	0	0	45	95,7	2	4,3
PQRST	9	56,2	7	43,8	13	86,7	2	13,3	6	85,7	1	14,3	2	40,0	3	60,0	3	75,0	1	25,0	33	70,2	14	29,8
OPQRSTUV pain	5	31,3	11	68,7	4	26,7	11	73,3	3	42,9	4	57,1	1	20,0	4	80,0	3	75,0	1	25,0	16	34,0	31	66,0
COLDSPA	5	31,3	11	68,7	3	20,0	12	80,0	4	57,1	3	42,9	1	20,0	4	80,0	1	25,0	3	75,0	14	29,8	33	70,2
QUEST	4	25,0	12	75,0	2	13,3	13	86,7	4	57,1	3	42,9	1	20,0	4	80,0	1	25,0	3	75,0	12	25,5	35	74,5

The nurse facilitator respondents confirmed what the nurse respondents indicated as available (see Table 4.25). WILDA was reported to be available by the most (f = 95,7%; n = 45), followed by PQRST (f = 70,2%; n = 33) availability; OPQRSTUV (f = 34,0%; n = 16), COLDSPA 29,8% (n = 14), and QUEST 25,5% (n = 12) (see Table 4.25). Fink and Gallagher (2019:231) iterated that the WILDA tool was predominantly used to assess pain. Both the clinical facilitator respondents and nurse respondents similarly reported WILDA to be available predominantly and QUEST to be the least available (see Tables 4. 5 and 4.17).

4.4.2.1.1 WILDA assessment guide (N = 47)

WILDA was reported to be 100% available to all respondents in the medical, surgical, and cardiac wards (see Table 4.17). In paediatric wards, it was 85,7% (F = 6; n = 7) available, and in obs-gynae wards, 80,0% (F = 4; n = 5).

4.4.2.1.2 The PQRST pain assessment guide (N = 47)

Thirteen respondents (n = 15, f = 86,7%) reported the **PQRST** tool availability in surgical wards, followed by 6 in paediatric wards (n = 7; f = 85,7%), 3 (n = 4; F = 75,0%) in cardiac wards, 9 in medical wards (n = 16; F = 56,2%), and 2 in obs-gynae wards (n = 5; f = 40.0%) (see Table 4.17).

4.4.2.1.3 The OPQRSTUV pain assessment guide (N = 47)

OPQRSTUV, according to the literature, should be available in paediatric wards (Cash et al. 2019:59, Jufri et al. 2019:13). Three out of the seven respondents responsible for the paediatric wards reported that it was available, three out of the four respondents in cardiac wards; five out of the 16 in medical wards, four out of 15 for surgical wards, and one out of the five in obs-gynae wards (see Table 4.17).

4.4.2.1.4 The COLDSPA pain assessment guide (N = 47)

The **COLDSPA** tool was reported to be available by four (n = 7; f = 57,1%) respondents in paediatric wards, five (n = 16; f = 57,1%) respondents in medical wards, one (n = 4; f = 25,0%) in cardiac wards, three (n = 15; f = 20,0%) in surgical wards as well as one (n = 5; f = 20,0%) in obs-gynae wards (see Table 4.17).

4.4.2.1.5 The QUEST pain assessment guide (N = 47)

Four of the seven clinical facilitators reported that QUEST was available in paediatric wards (see Table 4.17). In medical wards, four out of 16 facilitators indicated the tool to be available, one out of four in cardiac wards, one out of five in obs-gynae wards, and only two out of 15 facilitators in surgical wards (see Table 4.17).

The patients who can self-report their pain were assessed with the identified pain rating assessment tools available in the various wards.

4.4.2.2 Pain rating assessment tools for patients who can self-report their pain (N = 47)

Five valid and reliable pain rating assessment tools were selected for patients who can self-report their pain to determine their availability within the nursing wards. Table 4.18 illustrates the identified pain rating assessment tools reported by respondents to be available, namely (1) the NRS (n = 45), (2) the Wong-Baker FACES pain scale (n = 43), (3) the VAS (n = 11), (4) the VDS (n = 11), and (5) the BPS (n = 9). Studies indicated that NRS is the most suitable pain scale for self-reporting pain assessment for cognitively intact patients (Kang & Demiris 2018:19). Hence, in this study context, it was the highest available tool in the nursing wards (see Table 4.18).

As illustrated in Tables 4.6 and 4.18, the 47 clinical facilitator respondents and 385 nurse respondents provided similar information about the scales available to assess pain from patients who can self-report pain. The two groups of respondents indicated

NRS to be available the most, while the BPI scale was the least available (see Table 4.6 and 4.18). The availability of these scales, as reported by the 47 respondents, is indicated in Table 4.18.

Table 4.18: Availability of pain rating assessment tools for patients who can self-report their pain (N = 47)

Pain rating assessment tools for patients who can self-report their pain	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	n	%	n	%
Numeric Rating Scale (NRS)	15	93,7	1	6,3	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	45	95,7	2	4,3
Wong-Baker FACES pain scale	14	87,5	2	12,5	14	93,3	1	6,7	7	100	0	0	4	80,0	1	20,0	4	100	0	0	43	91,5	4	8,5
Verbal Analogue Scale (VAS)	3	18,8	13	81,2	4	26,7	11	73,3	2	28,6	5	71,4	1	20,0	4	80,0	1	25,0	3	75,0	11	23,4	36	76,6
Verbal Descriptor Scale (VDS)	2	12,5	14	87,5	4	73,3	11	26,7	2	28,6	5	71,4	2	40,0	3	60,0	1	25,0	3	75,0	11	23,4	36	76,6

Brief Pain Inventory (BPI)	3	18,8	13	81,2	3	20,0	12	80,0	1	14,3	6	85,7	2	40,0	3	60,0	0	0	4	100	9	19,1	38	80,9

4.4.2.2.1 The Numeric Rating Scale (NRS) (N = 47)

In cardiac, paediatric, and surgical wards, the NRS was reported to have been available to all respondents working in these wards (see Table 4.18). The scale was available in medical wards to 15 out of the 16 respondents and in gynae wards to four out of the five respondents (see Table 4.18). Adams, Murname, Adams, Elfenbein, Chang, Sannon, Gay & and Choudhury (2018:2) indicate the importance of the availability of NRS but also emphasize the role the clinical facilitators play in educating the nurses on how to use the scale.

4.4.2.2.2 The Wong-Baker FACES scale (N = 47)

The Wong-Baker FACES scale, used to rate pain in children who can self-report their pain intensity, was available (see Table 4.18). All respondents from paediatric wards (n = 7) and cardiac wards (n = 4) reported the scale as available. In surgical wards, all but one respondent (n = 15; F = 14) indicated the scale to be available. In medical wards, 14 of the 16 respondents and four of five in obs-gynae reported its availability (see Table 4.18).

4.4.2.2.3 The Verbal Analogue Scale (VAS) (N = 47)

In paediatric wards, two respondents (n = 7) indicated the scale to be available, four in surgical wards (n = 15), one in cardiac wards (n = 4), one in obs-gynae wards (n = 5), and three in medical wards (n = 16) (see Table 4.18).

4.4.2.2.4 The Verbal Descriptor Scale (VDS) (N = 47)

Four of the respondents in surgical wards (n = 15) reported the VDS to be available, two in obs-gynae wards (n = 5), two in paediatric wards (n = 7), one in cardiac wards (n = 4), and two in medical wards (n = 16) reported availability (see Table 4.18).

4.4.2.2.5 The Brief Pain Inventory (BPI) tool (N = 47)

BPI is commonly available to assess pain within wards caring for patients with cancer (Kang & Demiris 2018:8). In this study, two out of the five facilitators responsible for obs-gynae wards reported its availability, three out of 15 in surgical wards, three out of 16 in medical wards, and one out of 7 in paediatric wards (see Table 4.18).

Some patients cannot provide a self-report of pain verbally; hence, the clinical facilitators were asked to indicate the availability of the pain rating assessment tools for patients who cannot self-report their pain.

4.4.2.3 Pain rating assessment tools for patients who cannot self-report their pain (N = 47)

The seven existing nonverbal pain assessment tools considered the most valid and reliable pain rating assessment tools for patients who could not self-report their pain were to be identified for availability within wards. Of the 47 respondents, the pain rating assessment tools identified to be used to rate pain for patients who cannot self-report their pain were (1) the FLACC pain scale (n = 45), (2) the CRIES pain scale (n = 36), (3) BPS (n = 17), (4) NIPS (n = 13), (5) CPOT (n = 12), (6) COMFORT-B pain scale (n = 11), and (7) N-PASS (n = 11). As illustrated in Tables 4.7 and 4.19, the facilitator respondents and nurse respondents indicated the FLACC Scale and CRIES to be the most available, while both participant groups confirmed NPASS to be the least available. Regarding the availability of BPS, NIPS, CPOT, and COMFORT-B, the two groups of respondents supplied diverse opinions (see Tables 4.7 and 4.19).

Table 4.19: Availability of pain rating assessment tools for patients who cannot self-report their pain (N = 47)

Pain rating assess-ment tools for patients who cannot self-report their pain	Nursing Wards																			
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac			
	n = 16				n = 15				n = 7				n = 5				n = 4			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =
FLACC pain scale	15	93,8	1	6,2	15	100	0	0	6	85,7	1	14,3	5	100	0	0	4	100	0	0
CRIES pain scale	9	56,2	7	43,8	13	86,7	2	13,3	6	85,7	1	12,3	5	100	0	0	3	75,0	1	25,0
BPS	5	31,3	11	68,7	5	33,3	10	66,7	2	28,6	5	71,4	2	40,0	3	60,0	3	75,0	1	25,0
NIPS	4	25,0	12	75,0	3	20,0	12	80,0	3	42,9	4	57,1	2	40,0	3	60,0	1	25,0	3	75,0

Additional TOTAL column (N = 47):

Pain rating tool	TOTAL Yes n	%	TOTAL No n	%
FLACC pain scale	45	95,7	2	4,3
CRIES pain scale	36	76,6	11	23,4
BPS	17	36,2	30	63,8
NIPS	13	27,7	34	72,3

CPOT	2	12,5	14	87,5	4	26,7	11	73,3	3	42,9	4	57,1	1	20,0	4	80,0	2	50,0	2	50,0	12	25,5	35	74,5
COM-FORT-B pain scale	2	12,5	14	87,5	4	26,7	11	73,3	3	42,9	4	57,1	2	40,0	3	60,0	0	0	4	100	11	23,4	36	76,6
N-PASS	3	18,7	13	81,3	2	13,3	13	86,7	2	28,6	5	71,4	2	40,0	3	60,0	2	50,0	2	50,0	11	23,4	36	76,6

4.4.2.3.1 FLACC pain scale (N = 47)

The FLACC pain scale was reported to be available by all respondents in the surgical (n = 15), obs-gynae (n = 5), and cardiac wards (n = 4) (see Table 4.19). Fifteen of the 16 respondents responsible for the medical wards indicated it to be available, and six out of seven indicated it to be available in paediatric wards (see Table 4.19).

4.4.2.3.2 CRIES pain scale (N = 47)

All respondents from obs-gynae wards (n = 5) reported the CRIES pain scale as available. In surgical wards, 13 respondents (n = 15) indicated the scale to be available, six in paediatric wards (n = 7), three in cardiac wards (n = 4), and nine in medical wards (n = 16) (see Table 4.19).

4.4.2.3.3 The Behavioural Pain Scale (BPS) (N = 47)

The BPS was reported to be available by three out of the four respondents in cardiac wards, two out of five in obs-gynae wards, five out of 15 in surgical wards, five out of 16 in medical wards, and two out of 7 in paediatric wards (see Table 4.19). This finding suggests that the BPS was less reported to be available as the scale was intended to be available in intensive care units (Emsden et al. 2020:12).

4.4.2.3.4 The Neonatal Infant Pain Scale (NIPS) (N = 47)

The NIPS is intended to be available within neonatal intensive care units (Egede, Valstar, Torres & Sharkey 2019:471). Table 4.19 illustrates the availability of NIPS as reported by respondents. The scale was reported to be available by three out of the seven respondents from paediatric wards, two out of five from obs-gynae wards, four out of 16 from medical wards, one out of four from cardiac wards, and three out of 15 from surgical wards.

4.4.2.3.5 Critical Care Pain Observational (CPOT) (N = 47)

The CPOT scale is meant to be available within intensive care units (Emsden et al. 2020:12; Kotfis et al. 2017:70). In this study context, two respondents in cardiac wards (n = 4) indicated the scale to be available, three in paediatric wards (n = 7), four in surgical wards (n = 15), one in obs-gynae (n = 5), and two in medical wards (n = 16) (see Table 4.19).

4.4.2.3.6 The COMFORT-B pain scale (N = 47)

In paediatric wards, three out of the seven respondents reported the COMFORT-B pain scale to have been available, two out of five in obs-gynae wards, four out of 15 in surgical wards, and two out of 16 in medical wards (see Table 4.19). Studies demonstrated that the COMFORT-B is predominantly available within paediatric wards (Saelim, Chavananon, Ruangnapa, Prasertsan & Anuntaseree 2019:157). In this study's findings, it was primarily indicated to be available by respondents in paediatric wards (see Table 4.19).

4.4.2.3.7 The N-PASS (N = 47)

The N-PASS was the least reported to be available, as portrayed in Table 4.19, and two out of the four facilitators responsible for cardiac wards reported it to be available, two out of five in obs-gynae wards, two out of 7 in paediatric wards, three out of 16 in medical wards, and two out 15 in surgical wards.

4.4.2.4 Pain rating assessment tools for elderly patients with dementia or cognitive impairment to rate pain (N = 47)

For elderly patients with dementia or cognitive impairment, the clinical facilitators reported the availability of the four identified valid and reliable tools, as illustrated in Table 4.20. The pain rating assessment tools used for the elderly patients with dementia or cognitive impairment identified to be available were (1) the CNPI (f = 29,8%; n =

14), (2) the NOPPAIN (f = 14,9%; n = 7), (3) the ABBEY (f = 12.8%; n = 6), and (4) the PAINAD pain scale (f = 12%; n = 6) (see Table 4.20). As indicated in Tables 4.8 and 4.20, the nurse facilitator respondents agreed with the nurse respondents as they furnished similar information about the CNPI availability to assess the pain of elderly patients with dementia. The two groups, however, provided different opinions about the availability of the other three remaining scales (NOPPAIN, ABBEY, and PAINAD) (see Tables 4.8 and 4.20). Amongst the two groups of respondents, nurse facilitators provided information that indicated the PAINAD tool to be the least available, while the ABBEY tool was the least available according to the nurse respondents (see Tables 4.8 and 4.20). The nurse facilitator respondents reported the tools' availability in the different wards as illustrated in Table 4.20.

Table 4.20: Availability of the pain rating assessment tools for elderly patients with dementia or cognitive impairment (N = 47)

Pain rating assessment tools for elderly patients with dementia or cognitive impairment	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	n	%	n	%
CNPI	6	37,5	10	62,5	5	33,3	10	66,7	0	0	7	100	1	20,0	4	80,0	2	50,0	2	50,0	14	29,8	33	70,2
NOPPAIN	3	18,7	13	81,3	2	13,3	13	86,7	0	0	7	100	1	20,0	4	40,0	1	25,0	3	75,0	7	14,9	40	85,1
ABBEY pain scale	2	12,5	14	87,5	2	13,3	13	86,7	0	0	7	100	1	20,0	4	80,0	1	25,0	3	75,0	6	12,8	41	87,2
PAINAD	2	12,5	14	87,5	2	13,3	13	86,7	0	0	7	100	1	20,0	4	80,0	1	25,0	3	75,0	6	12,8	41	87,2

4.4.2.4.1 The CNPI (N = 47)

Two of the four respondents reported that the CNPI is available in cardiac wards, six out of 16 in medical wards, and five out of 15 in surgical wards (see Table 4.20). None of the respondents in paediatric wards indicated the CNPI tool's availability, probably due to the reasons indicated by literature that rationalize its availability within wards caring for elderly patients (Luks, Hagg-Gün, Mayer, Fisher & Schuler 2019:747).

4.4.2.4.2 The NOPPAIN tool (N = 47)

Table 4.20 shows that in cardiac wards, only one out of the four respondents reported NOPPAIN to be available (see Table 4.20). In obs-gynae wards, one out of the five respondents indicated the tool's availability, three out of 16 in medical wards, and two out of 15 in surgical wards (see Table 4.20). The scale is meant to be used for elderly patients with dementia or cognitive impairment (Rababa 2018:65). However, this study found that none of the respondents in paediatric wards reported its availability.

4.4.2.4.3 The ABBEY pain scale (N = 47)

In cardiac wards, one out of the four respondents reported the ABBEY pain scale to be available, one out of five in obs-gynae wards, two out of 16 in medical wards, and two out of the 15 in surgical wards (see Table 4.20).

4.4.2.4.4 The PAINAD scale (N = 47)

One respondent (n = 4) in cardiac reported the PAINAD scale to be available, one in obs-gynae wards (n = 5), two in medical wards (n = 16), and two in surgical wards (n = 15) (see Table 4.20). None of the respondents indicated the availability of the tool in paediatric wards, an obvious rationale since the tool is used to assess pain for advanced dementia patients (Lukas et al. 2019:742).

The availability of human resources essential to assess pain to enhance the transfer of learning of pain management was identified.

4.4.2.5 Human resources (N = 47)

Table 4.9 portrays the data received from the 385 nurse respondents, while Table 4.21 illustrates that of the 47 clinical facilitators relating to the availability of human resources (see Annexure 8). The two groups of respondents indicated different opinions on what was most available. This is a concern as within the very same wards, the two groups of participants perceived the availability of resources differently (see Tables 4.9 and 4.21). The different "types" of human resources identified to be available to conduct pain assessment were (1) the pain nurses working in acute or chronic pain services (n = 47), (2) pain nurse specialists (n = 45), and (3) the registered nurses with pain management training (n = 44), (4) the clinical facilitators (n = 44), (5) the pain management physicians (n = 44), (6) the ward nurse managers with pain management training (n = 44), (7) the nurse educators (n = 42), and (8) the nurse supervisors with pain management training (n = 39) (see Table 4.21). In Tables 4.9 and 4.21, the nurse facilitator respondents confirmed similarly to the nurse respondents as they indicated that nurse supervisors were least available. The clinical facilitator respondents indicated pain nurses working in acute or chronic pain services to be available most, contrary to nurse respondents who indicated that registered nurses with pain management training would be available the most. The availability of the nurse supervisors with pain management training information is similar according to the two groups of participants. Both groups said they were the least available (see Tables 4.9 and 4.21).

Table 4.21: Availability of the human resources (N = 47)

Human Resources	Nursing Wards											
	Medical n = 16				Surgical n = 15				Paediatric n = 7			
	Yes		No		Yes		No		Yes		No	
	F	%	F	% =	F	%	F	%	F	%	F	%
Pain Nurses working in acute or chronic pain services	16	100	0	0	15	100	0	0	7	100	0	0
Pain Nurse specialists	15	93,8	1	6,2	15	100	0	0	6	85,7	1	14,3
Registered nurse with pain management training	15	93,8	1	6,2	14	93,3	1	6,7	6	85,7	1	14,3
Clinical facilitators	15	93,8	1	6,2	14	93,3	1	6,7	6	85,7	1	14,3
Pain management physicians	15	93,8	1	6,2	15	100	0	0	6	85,7	1	14,3
Ward Nurse managers with pain management training	15	93,8	1	6,2	15	100	0	0	7	100	0	0
Nurse educators	14	87,5	2	12,5	13	86,7	2	13,3	5	71,4	2	28,6
Nurse supervisors with pain management training	15	93,8	1	6,2	12	80,0	3	20,0	5	71,4	2	28,6

Human Resources	Obs-gynae n = 5				Cardiac n = 4				TOTAL N = 47			
	Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	n	%	n	%
Pain Nurses working in acute or chronic pain services	5	100	0	0	4	100	0	0	47	100	0	0
Pain Nurse specialists	5	100	0	0	4	100	0	0	45	95,7	2	4,3
Registered nurse with pain management training	5	100	0	0	4	100	0	0	44	93,6	3	6,4
Clinical facilitators	5	100	0	0	4	100	0	0	44	93,6	3	6,4
Pain management physicians	5	100	0	0	3	75,0	1	25,0	44	93,6	3	6,4
Ward Nurse managers with pain management training	4	80,0	1	20,0	4	100	0	0	44	93,6	3	6,4
Nurse educators	5	100	0	0	4	100	0	0	41	87,2	6	12,8
Nurse supervisors with pain management training	4	80,0	1	20,0	3	75,0	1	25,0	39	83,0	8	17,0

4.4.2.5.1 Pain nurses working in acute or chronic pain services (N = 47)

The acute and chronic pain team nurses are well known for their collaborative work within wards (Rockett et al. 2017:1239). All the respondents who participated in this study reported these nurses to have been available (see Table 4.21).

4.4.2.5.2 Pain nurse specialists (N = 47)

All respondents who participated reported that pain nurse specialists were available, except in medical wards, as all but one respondent (n = 16; F = 15) indicated that pain nurse specialists were available, and six out of the seven respondents were in paediatric wards (see Table 4.21).

4.4.2.5.3 Registered nurses with pain management training (N = 47)

All respondents in obs-gynae wards (n = 5) and cardiac wards (n = 4) reported that registered nurses with pain management training were available (see Table 4.21). However, in medical wards, 15 out of 16 of the respondents, in surgical wards, 14 out of 15, and in paediatric wards, six out of seven indicated these nurses were available (see Table 4.21).

4.4.2.5.4 The clinical facilitators (N = 47)

All respondents in all the wards reported the clinical facilitators to be available, except for in the medical wards (F = 15; n = 16), the surgical wards (F = 14; n = 15), and the paediatric wards (F = 6; n = 7) (see Table 4.21).

4.4.2.5.5 The pain management physicians (N = 47)

All respondents in surgical and obs-gynae wards indicated pain management physicians to be available. In the medical wards (F = 15; n = 16), paediatric wards (F = 6; n

= 7), and cardiac wards (F = 3; n = 4), they were available as indicated (see Table 4.21).

4.4.2.5.6 The nurse managers with pain management training (N = 47)

The nurse managers with training in pain management were reported to be available by 15 respondents in medical wards (f = 93,8%; n = 16) and by four in obs-gynae wards (f = 80,0%; n = 5). All surgical, paediatric, and cardiac ward respondents indicated these nurse managers to be available (see Table 4.21).

4.4.2.5.7 Nurse educators (N = 47)

Another role player in pain management facilitation is the nurse educator in an organisation who plays a role in educating nurses on how to conduct pain assessments, collaborating in this regard with clinical facilitators (Shoqirat, Mahasneh, Singh & Hadid 2019:6). As portrayed in Table 4.21, all of the respondents in obs-gynae and cardiac wards reported that nurse educators were available. In the medical wards (F = 14; n = 16), surgical wards (F = 13; n = 15), and paediatric wards (F = 5; n = 7), the nurse educators were available, although not all participants indicated them to be available (see Table 4.21).

4.4.2.5.8 Nurse supervisors with pain management training (N = 47)

Table 4.21 indicates that in medical wards, all respondents but one (F = 15; n = 16) reported nurse supervisors with pain management training available, 12 out of the 15 respondents in surgical wards, four out of the five respondents in obs-gynae wards, three out of the four respondents in cardiac wards, and five out of the seven respondents in paediatric wards reported availability (see Table 4.21).

Other types of support are available for the patients to manage their pain; hence, the clinical facilitators were asked to indicate their availability.

Table 4.22: Availability of patient support (N = 47)

Patient supports	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	% =	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Patients or (other people or patients with pain)	12	75,0	4	25,0	11	73,3	4	26,7	5	71,4	2	28,6	2	40,0	3	60,0	3	75,0	1	25,0	33	70,2	14	29,8
Pain management support groups	10	62,5	6	37,5	10	66,7	5	33,3	5	71,4	2	28,6	1	20,0	4	80,0	2	50,0	2	50,0	28	59,6	19	40,4
Patient pain management websites	8	50,0	8	50,0	6	40,0	9	60,0	4	57,1	3	42,9	1	20,0	4	80,0	4	100	0	0	19	40,4	28	59,6

Patient pain management hotlines	6	37,5	10	62,5	6	40,0	9	60,0	4	57,1	3	42,9	1	20,0	4	80,0	4	100	0	0	17	36,2	30	63,8

4.4.2.6   Other types of support (N=47)

4.4.2.6.1 The "peer" patients (other people or patients with pain) (N = 47)

Peer patients or other people with pain were reported to be available to support patients within wards, as illustrated in Table 4.22. In medical wards, 12 out of the 16 respondents reported peer patients to be available, three out of four in cardiac wards, 11 out of 15 in surgical wards, five out of seven in paediatric wards, and two out of the five in obs-gynae wards (see Table 4.22).

4.4.2.6.2 Pain management support groups (N = 47)

Five (n = 7) respondents in paediatric wards reported support groups to be available, 10 (n = 15) respondents in surgical wards, 10 (n = 16) respondents in medical wards, two (n = 4) respondents in cardiac wards, and one (n = 5) respondent in obs-gynae wards (see Table 4.22).

4.4.2.6.3 Pain management websites (N = 47)

Pain management websites were reported to be available by all respondents in cardiac wards (see Table 4.22). In paediatric wards, four respondents (n = 7) reported the websites to be available, eight in medical wards (n = 16), six in surgical wards (n = 15), and all but one respondent in obs-gynae wards (n = 5) (see Table 4.22).

4.4.2.6.4 Pain management hotlines (N = 47)

All the respondents (n = 4) in cardiac wards reported that patient pain management hotlines were available (see Table 4.22). Four out of the seven respondents in paediatric wards reported the hotlines to be available, six out of 15 in surgical wards, six out of 16 in medical wards, and one out of five in obs-gynae wards (see Table 4.22).

4.4.2.7 Publications and electronic resources (N = 47)

Publications and electronic resources which are essential to be employed during pain assessments were reported by respondents to be available, as illustrated in Table 4.23. Respondents within the wards identified the following publications and electronic resources to be utilised during pain assessment: (1) e-learning modules (n = 45), (2) the best clinical practice guidelines for pain assessment (n = 44), (3) electronic flow sheets (n = 43), (4) clinical updates or journals 72,3% (n = 34), (5) the pain toolkit (n = 33), (6) printed reference books (n = 27), (7) the fact sheets (n = 19), (8) the videos on pain management 38,3% (n = 18), and (9) the e-newsletters (n = 14). The two groups of respondents, namely the nurse facilitator respondents and the nurse re-spondents, both reported e-learning modules to be available the most, with e-news-letters the least available (compare Tables 4.11 and 4.23).

The availability of the publications and electronic resources in different wards, as iden-tified by the facilitator respondents, is illustrated in Table 4.23.

Table 4.23: Availability of the publications and electronic resources (N = 47)

Publications and electronic resources	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	% =	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	N =	%	n =	%
E-learning modules	15	93,8	1	6,3	15	100	0	0	6	85,7	1	14,3	5	100	0	0	4	100	0	0	45	95,7	2	4,3
Best clinical practice guide-lines for pain assessment	15	93,8	1	6,3	13	86,7	2	13,3	7	100	0	0	5	100	0	0	4	100	0	0	44	93,6	3	6,4
Electronic flow sheets	14	87,5	2	12,5	14	93,3	1	6,7	6	85,7	1	14,3	5	100	0	0	4	100	0	0	43	91,5	4	8,5
Clinical updates or journals	8	50,0	8	50,0	14	93,3	1	6,7	5	71,4	2	28,6	4	80,0	1	20,0	3	75,0	1	25,0	34	72,3	13	27,7

Pain toolkit	9	56,3	7	43,7	12	80,0	3	20,0	5	71,4	2	28,6	4	80,0	1	20,0	3	75,0	1	25,0	33	70,2	14	29,8
Printed reference books	8	50,0	8	50,0	12	80,0	3	20,0	4	57,1	3	42,9	2	49,0	3	60,0	1	25,0	3	75,0	27	57,4	20	42,6
Fact sheets	5	31,3	11	68,7	9	60,0	6	40,0	2	28,6	5	71,4	1	20,0	4	80,0	2	50,0	2	50,0	19	40,4	28	59,6
Videos on pain management	5	31,3	11	68,7	8	53,3	7	46,7	3	42,9	4	57,1	2	40,0	3	60,0	0	0	4	100	18	38,3	29	61,7
E-newsletters	2	12,5	14	87,5	6	40,0	9	60,0	4	57,1	3	42,9	1	20,0	4	80,0	1	25,0	3	75,0	14	29,8	33	70,2

4.4.2.7.1 E-learning modules (N = 47)

The e-learning modules were reported to be available by all respondents in all the wards, except for the medical wards (F = 15; n = 16) and the paediatric wards (F = 6; n = 7) (see Table 4.23).

4.4.2.7.2 Best clinical practice guidelines for pain assessment (N = 47)

In Table 4.23 it is illustrated that all the respondents in paediatric wards, obs-gynae wards and cardiac wards indicated that the best clinical practice guidelines were available, except for those working in medical wards (F = 5; n = 16) and surgical wards (F = 13; n = 15).

4.4.2.7.3 Electronic flow sheets (N = 47)

The electronic flow sheets were reported to be available by all respondents in other wards (obs-gynae and cardiac), but some disagreed, that is, 14 in medical wards (f = 87,5%; n = 16), and 14 in surgical wards (f = 93,3%; n = 15), and six in paediatric wards (f = 91,5%; n = 7) see Table 4.23.

4.4.2.7.4 Clinical updates or journals (N = 47)

Fourteen out of the 15 facilitators responsible for surgical wards reported clinical updates or journals to be available. Four out of the five facilitators were responsible for obs-gynae wards, three out of four in cardiac wards, five out of seven in paediatric wards, and eight out of 16 facilitators were responsible for medical wards (see Table 4.23).

4.4.2.7.5 Pain toolkit (N = 47)

Four out of the five respondents from obs-gynae wards reported that the pain toolkit was available, and it was the same with 12 out of the 15 respondents from surgical

wards, three out of four from cardiac wards, five out of seven from paediatric wards, and nine out of the 16 respondents from medical wards (see Table 4.23).

4.4.2.7.6 *Printed reference books (N = 47)*

Table 4.23 illustrates that 12 respondents from surgical wards (n = 15) reported the books to be available, four respondents from paediatric wards (n = 7), eight respondents from medical wards (n = 16), two respondents from obs-gynae wards (n = 5), and one respondent from cardiac wards (n = 4) reported the books to be available (see Table 4.23).

4.4.2.7.7 *Fact sheets (N = 47)*

In surgical wards, nine respondents (n = 15) indicated the sheets to be available, two in cardiac wards (n = 4), five in medical wards (n = 16), two in paediatric (n = 7), and one in obs-gynae wards (n = 5) (see Table 4.23).

4.4.2.7.8 *Videos on pain management (N = 47)*

Eight out of the 15 respondents from surgical wards reported the videos to be available, three out of the seven respondents from paediatric wards, two out of five in obs-gynae wards, and five out of 16 in medical wards. None of the respondents in paediatric wards indicated the availability of the videos (see Table 4.23).

4.4.2.7.9 *E-newsletters (N = 47)*

Respondents indicated e-newsletters to be available in paediatric wards (f = 57,1%; F = 4; n = 7), in surgical wards (f = 40%; F = 6; n = 15), in cardiac wards (f = 25,0%; F = 1; n = 4), in obs-gynae wards (f = 20,0%; F = 1; n = 5), and in medical wards (f = 12,5%; F = 2; n = 16) (see Table 4.23).

The clinical facilitators also identified and indicated the available organisations that specialise in pain management.

4.4.2.8 Organisations that specialise in pain management (N = 47).

Of the 47 clinical facilitator respondents, 37 (f = 78,7%) within the wards reported the availability of organisations specialising in pain management (see Table 4.24). The two groups of respondents, namely the nurse facilitator respondents (f = 78,7%; n = 37) and nurse respondents (f = 78,4%; n = 302), both indicated similar thoughts on the availability of organisations that specialise in pain management (compare Tables 4.12 and 4.24). In surgical wards, 13 of the 15 respondents reported the organisations as available. In obs-gynae wards, all but one respondent (n = 5; F = 4) indicated the organisations to be available, 12 out of 16 in medical wards, three out of four in cardiac wards, and five out of seven in paediatric wards (see Table 4.24).

Table 4.24:   Availability of the organisations that specialise in pain management (N = 47)

Organisations that specialise in pain research, treatment, clinical practice, and education	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n =	%	n =	%
	12	75,0	4	25,0	13	86,7	2	13,3	5	71,4	2	28,6	4	80,0	1	20,0	3	75,0	1	25,0	37	78,7	10	21,3

4.4.2.9 Policies for pain management (N = 47)

The respondents indicated their awareness of the availability of policies for pain management, as indicated in Table 4.25. Fourty-six (f = 97,9%) of the respondents reported these policies as available (see Table 4.25). This information about the available policies for pain management confirmed what 384 (f = 99,7%) nurse respondents reported, as illustrated in Table 4.13. Table 4.25 illustrates that all respondents from surgical wards (n = 15), paediatric wards (n = 7), obs-gynae wards (n = 5), and cardiac wards (n = 4) reported the policies' availability. In medical wards, 15 out of the 16 respondents indicated the policies to be available (see Table 4.25).

Table 4.25: Availability of the policies for pain management (N = 47)

Policies	Nursing Wards																				
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL	
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47	
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n =	%	n =	%
	15	93,8	1	6,2	15	100,0	0	0	7	100,0	0	0	5	100,0	0	0	4	100,0	0	0	46	97,9	1	2,1

The respondents confirmed the teaching approaches they employed in the pain management education of the nurses.

4.4.3   Teaching approaches employed in pain management education (N = 47)

Teaching approaches are sets of principles, beliefs, or ideas about the nature of learning which are translated into the classroom (Experts 2020:498). Exploring the teaching approaches or strategies employed by the clinical facilitators in pain management education of nurses forms the foundation for understanding their teaching styles, abilities, and knowledge levels (Herrman 2020:7). To accommodate all types of learning styles of nurses, the clinical facilitators must employ different teaching strategies or approaches in pain management education to enhance the transfer of learning. Table 4.26 illustrates the teaching approaches reported to be employed by the respondents in the pain management education of nurses. Of the 47 respondents, the teaching approaches identified as being utilised during training, were (1) pain management e-learning modules (n = 46), (2) assessment of prior knowledge about pain management as a basis for each individual teaching occasion (n = 45), (3) engaging hands-on activities to learn about pain assessment (n = 42), (4) using practice simulations to assess registered nurses' skills about pain assessment (n = 41), (5) allowing debriefing sessions about pain management after assessing individual nurse's learning needs which each was reported as requiring (n = 41), (6) forming a discussion group to learn about pain management (n = 40), (7) preventing interruptions during teaching sessions (n = 40), (8) providing assignments about pain management to apply at work (n = 40), (9) the use of role modelling to learn about pain assessment (n = 38), (10) the use of case studies to learn how to manage pain (n = 38), (11) the use of role play activities to learn about pain assessment (n = 37), (12) engaging nurses in focus groups to learn about pain management (n = 36), (13) using nursing grand rounds to learn directly at patient bedside how to assess and manage individual patient's pain (n = 35), and (14) asking nurses to write a reflective journal about pain management (n = 17) (see Table 4.26).

The respondents indicated the employment of the teaching approaches in various wards, as illustrated in Table 4.26.

Table 4.26: Employment of the teaching approaches (N = 47)

Teaching approaches employed during pain management education of nurses	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	% =	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Pain management e-learning modules	15	93,8	1	6,3	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1
Assessment of prior knowledge about pain management	15	93,8	1	6,3	14	93,3	1	6,7	7	100	0	0	5	100	0	0	4	100	0	0	45	95,7	2	4,3
Hands-on activities	14	87,5	2	12,5	13	86,7	2	13,3	7	100	0	0	5	100	0	0	3	75,0	1	25,0	42	89,4	5	10,6
Simulations	14	87,5	2	12,5	12	80,0	3	20,0	7	100	0	0	5	100	0	0	3	75,0	1	25,0	41	87,2	6	12,8

Debriefing sessions	14	87,5	2	12,5	12	80,0	3	20,0	6	85,7	1	14,3	5	100	0	0	4	100	0	0	41	87,2	6	12,8
Discussion groups	14	87,5	2	12,5	11	73,3	4	26,7	7	100	0	0	4	80,0	1	20,0	4	100	0	0	40	85,1	7	14,9
Preventing interruptions	14	87,5	2	12,5	11	73,3	4	26,7	7	100	0	0	5	100	0	0	3	75,0	1	25,0	40	85,1	7	14,9
Assignments about pain management	15	93,8	1	6,3	11	73,3	4	26,7	7	100	0	0	4	80,0	1	20,0	3	75,0	1	25,0	40	85,1	7	14,9
Role modelling	15	93,8	1	6,3	10	66,7	5	33,3	6	85,7	1	14,3	4	80,0	1	20,0	3	75,0	1	25,0	38	80,9	9	19,1
Case studies	14	87,5	2	12,5	11	73,3	4	26,7	6	85,7	1	14,3	4	80,0	1	20,0	3	75,0	1	25,0	38	80,9	9	19,1
Role play-activities	11	68,8	5	31,3	11	73,3	4	26,7	7	100	0	0	4	80,0	1	20,0	4	100	0	0	37	78,7	10	21,3
Focus groups	13	81,3	3	18,8	12	80,0	3	16,8	6	85,7	1	14,3	4	80,0	1	20,0	1	25,0	3	75,0	36	76,6	11	23,4
Nursing grand rounds	11	68,8	5	31,3	10	66,7	5	33,3	6	85,7	1	14,3	5	100	0	0	3	75,0	1	25,0	35	74,5	12	25,5
Reflective journals	9	56,3	7	43,8	4	26,7	11	73,3	4	57,1	3	42,9	5	100	0	0	4	100	0	0	17	36,2	30	63,8

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4.4.3.1 Pain management e-learning modules (N = 47)

Using available pain management e-learning modules for the professional development of nurses enhances the transfer of learning of pain management competencies (Vu, Fredrickson & Moore 2017:375). Shipton et al. (2018:152), and Rouleau, Gagnon, Côté, Payne-Gagnon, Hudson, Dubois and Bouix-Picasso (2019:14) indicate that the use of e-learning modules was mentioned the most often among common teaching strategies for pain management. In this study, all the respondents from surgical wards (n = 15), paediatric wards (n = 7), obs-gynae wards (n = 5), and cardiac wards (n = 4) reported the modules to have been employed (see Table 4.26). In medical wards, all but one respondent (F = 15; n = 16) reported the modules to be employed.

4.4.3.2 Assessment of prior knowledge about pain management (N = 47)

Assessment of prior knowledge is used to build new information or knowledge about pain management upon already-known information by increasing engagement to enhance the transfer of learning (Carver & Atkins 2021:77; Billings & Halstead 2019:529; Chu, Wang, Lin, Lee, Lin, Chieh, Sung & Lin 2019:5). All the respondents from paediatric wards (n = 7), obs-gynae wards (n = 5), and cardiac wards (n = 4) reported this teaching approach to have been employed (see Table 4.26). In medical wards, 15 out of the 16 respondents reported using this assessment.

4.4.3.3 Hands-on activities (N = 47)

Hands-on activities relate to a teaching approach that allows engagement or active participation during training sessions that provide direct practical experience to complete the learning task, such as the use of pain management devices, materials and activities that the hands can touch, manipulate, and practice the skills for better retention (Verkuyl, Romaniuk, Atack & Mastrilli 2017:5; Sumil 2016:5). All the respondents of the two wards (paediatric and obs-gynae) indicated they were in favour of hands-on-activities, although only 14 respondents in medical wards (n = 16), 13 in surgical

wards (n = 15), and three in cardiac wards (n = 4) indicated having employed hands-on activities (see Table 4.26).

4.4.3.4 Simulations (N = 47)

Simulation is a teaching strategy that mimics a situation or process of evidence-based practice using dummies during training sessions to educate and assess skills (Hermann 2020:398; Allred & Gerardi 2017: Gaberson, Oermann & Shellenbarge 2015:187). As illustrated in Table 4.26, all the respondents in obs-gynae (n = 5) and paediatric wards (n = 7) reported simulation as a teaching strategy used to enhance the transfer of learning of pain management competencies of nurses (see Table 4.26). Not all participants in the wards agreed they were using simulation. In medical wards, 14 respondents (n = 16); in surgical wards, 12 respondents (n = 15); and in cardiac wards, three respondents (n = 4) (see Table 4.26) reported utilizing simulation in pain management training.

4.4.3.5 Debriefing sessions (N = 47)

A debriefing session is a teaching approach employed by allowing or engaging the trainees in a reflective discussion about their performances related to learning objectives (Sawhney, Wong, Luctkar-Flude, Jussaume, Eadie, Bowry & Wilson 2018:249; Oriot & Alinier 2017:9). All respondents from obs-gynae (n = 5) and cardiac wards (n = 4) indicated that they were allowing debriefing sessions during their pain management training sessions (see Table 4.26). In medical wards, 14 out of the 16 respondents indicated allowing debriefing sessions, 12 out of the 15 respondents in surgical wards, and six out of the seven respondents in paediatric wards (see Table 4.26).

4.4.3.6 Discussion groups (N = 47)

A discussion group is a trainee-centred democratic teaching strategy embracing an orderly process of face-to-face interaction to exchange ideas about topics. In this study context, discussion groups were suggested to be formed to discuss pain management

(Hermann 2020:163; Suresh 2016:416; Shipton 2018:153; Drake and Williams 2017:9). All respondents in cardiac wards (n = 4) and paediatric wards (n = 7) indicated that they made use of discussion groups during their pain management education of nurses (see Table 4.26). Fourteen out of 16 respondents in medical wards reported discussion groups were suggested to be formed, four out of five in obs-gynae, and 11 out of 15 in surgical wards (see Table 4.26).

4.4.3.7 Preventing interruptions during teaching sessions (N = 47)

According to the National Association of Emergency Medical Services (EMS) of educators (2020:128), preventing interruptions during teaching sessions involves using a learning physical environment that avoids sources of distractions to accommodate the instruction for that teaching session. All respondents in obs-gynae wards (n = 5) and paediatric wards (n = 7) reported that interruptions during teaching sessions were prevented (see Table 4.26). Allred and Gerardi (2017:281) suggest that a teaching session for pain management be conducted in a pleasant, comfortable atmosphere without interruptions as it enhances nurses to apply what they have learned. In medical wards, 14 respondents (n = 16) reported that preventing interruptions during the teaching practice of pain management was established, three in cardiac wards (n = 4), and 11 in surgical wards (n = 15) (see Table 4.26).

4.4.3.8 Assignments about pain management (N = 47)

Assignments are teaching approaches that extend learning after training sessions to apply at work to improve skills proficiency at the workplace (McCune & Alexander 2020:122; Germossa, Sjetne & Hellesø 2018:1). All respondents in paediatric wards (n = 7) indicated that they were providing assignments to nurses to further learn about pain management (see Table 4.26). Respondents in medical wards (F = 15; n = 16), obs-gynae wards (F = 4; n = 5), cardiac wards (F = 3; n = 4), and surgical wards (F = 11; n = 15) reported that assignments about pain management were provided during their teaching (see Table 4.26).

4.4.3.9 Role modelling (N = 47)

Achinstein & Ogawa (2015: 57) and Gaberson et al. (2015:73) describe role modelling as a teaching method, a form of learning from experiences that uses humanist and social learning theories to allow trainees to learn the set examples of new knowledge, skills behaviours observed, and imitate the trainers or mentors. In medical wards, 15 respondents (n = 16) indicated that they were adopting role modelling during pain management education for nurses; six in paediatric wards (n = 7), four in obs-gynae wards (n = 5), three in cardiac (n = 4), and 10 in surgical wards (n = 15) (see Table 4.26).

4.4.3.10 Case studies (N = 47)

The case study teaching approach is a type of problem-based learning that is a participatory, discussion-based way of learning where trainees gain skills in critical thinking, communication, and group dynamics that enable them to recommend care for patients (Gaberson et al. 2015:237). Fourteen out of 16 respondents in medical wards indicated they had used case studies as a method during their pain management education for nurses, six out of seven in paediatric wards, four out of five in obs-gynae wards, three out of four in cardiac wards, and 11 out of 15 in surgical wards (see Table 4.26).

4.4.3.11 Role-play activities (N = 47)

Role-play is a teaching approach in which trainees are required to take on a role and pretend to be someone or something to perform part of activities to learn a realistic or hypothetical situation (Sit 2017:31). All respondents indicated that they were engaging in role-playing activities during their pain management training sessions for nurses. In obs-gynae wards, four out of the five respondents indicated they have engaged in role-playing activities to teach pain management, 11 out of 15 in surgical wards, and 11 out of 16 in medical wards (see Table 4.26).

4.4.3.12 Focus groups (N = 47)

A focus group is a teaching approach that allows a representative group of participants to reflect on their experiences in more detail in interview discussions about a given topic to be learned (Billings & Halstead 2019: 529). Table 4.26 illustrates the respondents who reported engaging nurses in focus groups as a teaching strategy. Six (n = 7) in paediatric wards, 13 (n = 16) in medical wards, four in obs-gynae wards (n = 5), 12 in surgical wards (n = 15) and one in cardiac wards, (n = 4) (see Table 4.26) reported to engage in focus groups.

4.4.3.13 Nursing grand rounds (N = 47)

Nursing grand rounds involve observation and discussions about patient assessments and interventions in a clinical setting to improve knowledge and attitudes (Hamoen, van Blankenstein, De Jong, Ray & Reinders 2020: 81; Hermann 2020;195; Brant, Mohr, Coombs, Finn & Wilmarth 2017:222; Gaberson et al. 2015:250). All respondents from obs-gynae wards (n = 5) reported that nursing grand rounds were implemented as a teaching strategy to provide opportunities for nurses to learn about pain management. All but one respondent (F = 6; n = 7) in paediatric wards, 3 (n = 4) in cardiac wards, 11 (n = 16) in medical wards, and 10 (n = 15) in surgical wards indicated implementing this teaching strategy (see Table 4.26).

4.4.3.14 Reflective journals (N = 47)

Reflective journaling is a teaching approach that provides the trainees an opportunity to write about their learning experiences by sharing their insights into their strengths and weaknesses, the understanding, interrelation of knowledge and emotion, critical thinking, and applying what was learned during training (Hermann 2020:351; Roca, Reguant, Tort & Cancet 2020:5). Reflective journal writing by nurses to share their learning experiences about pain management was reported to be implemented by all respondents in all the wards included in the study, except for some of the respondents

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in the paediatric wards (F = 4; n = 7), in medical wards (F = 9; n = 16), and in surgical wards (F = 4; n = 15) (see Table 4.26).

4.4.4 Learning content included in pain management education (N = 47)

The learning content refers to topics, themes, beliefs, behaviours, concepts, and facts, often grouped within each subject, developing skills, knowledge, and attitudes that are expected to be learned and form the basis of teaching and learning (Mishra & Ghosh 2021:215). Employing the teaching approaches during pain management education was required to incorporate the learning content to enhance the transfer of learning of pain management competencies of nurses. The responses regarding the learning content included in pain management education were grouped using the steps of the nursing process, namely (1) **pain assessment**, (2) **strategies to plan** for pain management, (3) **pain intervention strategies** implemented, and (4) **nursing actions** for pain management **evaluation.**

4.4.4.1 Pain assessment

The learning content of pain management education of nurses that covered pain assessment as reported by respondents was (1) physiological pain indicators, (2) behavioural indicators of pain, (3) pain screening, (4) patients' self-report of pain, (5) proxy reported pain, (6) the systematic pain guide tool for history taking, (7) valid and reliable pain rating scales, (8) acute types of pain, (9) chronic types of pain, (10) factors related to the impact of pain on daily living (ADLs) and quality of life (QOL) (see Tables 4.28 to 4.36).

(1)　The physiological pain indicators (N = 47)

The physiological pain indicators are responses of sympathetic activation that may infer that pain is present as observed during pain assessment mainly for non-communicative, sedated or critically ill patients (Jiang, Mieronski, Syrjälä, Anzanpour, Terävä, Rahmani, Salnterä, Aantaa, Hagelberg & Liljeberg 2019:500). The physiologic pain

indicators included in the learning content of pain management education were **increased blood pressure**, **tachycardia and tachypnea** (see Table 4.27) as is supported by Ghezeljeh, Nasari, Haghani and Loieh (2017:147), and Dongara et al. (2017:27).

Table 4.27: The physiological pain indicators (N = 47)

Physiologic pain indicators during pain assessment	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Increased blood pressure	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0

Tachycardia	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0
Tachypnea	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0

a)   Increased blood pressure (N = 47)

Increased blood pressure is used as a cue for pain assessment as it occurs more commonly in acute pain and is considered a factor that affects both systolic and diastolic blood pressure by increasing sympathetic activity, leading to vasoconstriction (Nugent & Vitale 2017:387). Table 4.27 shows that all respondents from all nursing wards included increased blood pressure as part of the learning content for pain management education (see Table 4.27).

b)   Tachycardia (increased heart rate) (N = 47)

Tachycardia is a cue for pain assessment as it occurs more commonly in acute pain as a factor influencing heart rate by stimulating sympathetic nervous system response and producing vasoconstriction (Potter, Perry, Stockert & Hall 2020: 480). As shown in Table 4.27, all respondents in all the wards reported having included tachycardia in their teaching content during nurses' pain management education.

c)   Tachypnoea (increased respiratory rate) (N = 47)

Increased respiratory rate forms part of pain assessment in acute pain as a factor that influences respiration by increasing its flow, frequency, and volume due to sympathetic nervous system response increasing oxygen intake demand (James et al. 2013:527). All respondents indicated that tachypnoea was included during their teaching sessions on pain management (see Table 4.27).

(2)   The behavioural indicators of pain (N = 47)

The behavioural or nonverbal indicators of pain are responses to pain stimuli that result in a change in the behaviour of an individual and include facial expressions, verbal responses, and body movements (Chang & Jonhson 2018:275; Costa, Rossato, Bueno, Secco, Sposito, Harrison & De Freitas 2017:5). Respondents in this study identified the behavioural indicators of pain to have been included in the learning

content of pain management education of nurses. These were (1) facial expressions (n = 47), verbal responses (n = 47), and (3) body movements (n = 47) (see Table 4.28).

Table 4.28: The behavioural pain indicators (N=47)

Behavioural indicators of pain during pain assessment	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n= 16				n =15				n =7				n =5				n=4				N= 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Facial expressions	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	**100,0**	0	0
Verbal responses	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	**100,0**	0	0
The body movements	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	**100,0**	0	0

(a)   Facial expressions (N=47)

Facial expressions such as frowning or grimacing are reliable nonverbal signals of pain useful for assessing pain in patients who are cognitively impaired or unable to self-report pain due to limited communicative ability (Perry, Potter, Ostendorf & Laplante 2021:443; Pölkki, Korhonen & Laukkala 2018:732). Table 4.28 shows that facial expressions as a way of assessing pain were reported to be included as learning content of pain management education for nurses by all respondents in all the wards included in the study.

(b)   Verbal responses (N=47)

Verbal responses (such as crying) are automatic verbal responses suggestive of potential indicators for pain that are observed despite a self-report given during pain assessment (Gawlik, Melnyk & Teall 2020:94). All respondents in all the wards indicated that verbal expressions were included as learning content of pain management training sessions on how to conduct pain assessment (see Table 4.28).

(c)   The body movements (N=47)

The body movements such as "kicking" primarily serve as protective or pain management functions from further noxious input and promote pain relief observed during pain assessment (Vervoort, Karos, Trost & Prkachin 2018:104; Björn, Pudas-Tähkä, Salanterä & Axelin 2017:72). Observing the body movements used to estimate the presence and intensity of the pain in patients experiencing the pain, and as indicated in table 4.28, all of the respondents in all the wards agreed that they included them as learning content of pain management education for nurses (see Table 4.28).

The pain screening was indicated to be included as learning content for pain management education for nurses to conduct pain assessments.

(3)   Pain screening (N=47)

Pain screening is a process that includes the initial screening interview and ongoing assessment of the presence of pain by directly asking the patients, who can communicate, using a comprehensive pain assessment guide (Wyatt, Taylor, de Wit & Hotton 2020:282; Roller-Wirnsberger, Singler & Polidori 2018:200). As indicated in Table 4.37, 46 respondents (f=97,9%; N=47) within the wards agreed that their pain management teaching content for nurses included a process of pain screening. Only one respondent from the paediatric wards (F=6; n=7) did not include pain screening as the pain management teaching content for nurses. It is, however, difficult to perform pain screening on paediatric patients due to their inability to communicate or report their pain (Cascella, Bimonte, Saettini & Muzio 2019:133).

Table 4.29: Pain screening (N=47)

Pain screening	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n= 16				n =15				n =7				n =5				n=4				N= 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
	16	100	0	0	15	100	0	0	6	85.7	1	14,3	5	100	0	0	4	100	0	0	46	97,9	1	2,1

(4)   Obtaining the patient's self-report of pain (N=47)

Obtaining the patient's self-report of pain is considered the golden standard of pain assessment and the most reliable conversational approach to pain assessment by cognitively intact patients able to communicate pain experienced (Kang & Demiris 2018:4; Tidwell 2017:207; Topham & Drew 2017:366). The responses in Table 4.30 indicate that 46 (N=47) respondents within the wards included obtaining the patient's self-report to assess the pain as a learning content during their pain management education for nurses. On the contrary, only one respondent (F=15; n=16) in medical wards did not agree that obtaining the patient's self-report of pain was covered as learning content of pain management education for nurses (see Table 4.30).

Table 4.30: Patient's self-report of pain (N=47)

Patient's self-report of pain	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n= 16				n =15				n =7				n =5				n=4				N= 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
	15	93,8	1	6,3	15	100	0	0	7	100	1	14,3	5	100	0	0	4	100	0	0	46	**97,9**	1	2,1

Proxy-reported pain was indicated to be included in the learning content for pain management education for nurses to conduct pain assessments.

(5)   Proxy-reported pain (N=47)

Proxy-reported pain (obtaining pain reports from parents or family members) is essential in pain assessment for patients with intellectual and developmental disabilities as information about the pain experienced by the patient must be obtained from nurses, parents, or family members (Alotaibi et al. 2018:530; Mamhidir, Sjölund, Fläckman, Wimo, Sköldunger & Engström 2017:6). Of the 47 respondents, 46 (f=97,9%; N=47) respondents reported that proxy reported pain was part of the pain module to assess pain. However, even though proxy-reported pain was reported to have been included by all respondents in all the wards, 15 out of 16 respondents in the medical wards agreed to have included it as learning content.

Table 4.31: Proxy-reported pain (N=47)

Proxy reported pain	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n= 16				n =15				n =7				n =5				n=4				N= 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
	15	93.8	1	6.3	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	46	97.9	1	2.1

Table 4.32: The WILDA systematic pain assessment guide (N = 47)

The WILDA systemic pain guide	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
The intensity of pain using the pain scale	16	100	0	0	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	46	97,9	1	2,1
The location of pain	16	100	0	0	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	46	97,9	1	2,1
The duration of pain	16	100	0	0	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	46	97,9	1	2,1
Aggravating or alleviating factors	16	100	0	0	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	46	97,9	1	2,1
Description of the type of pain	15	93,8	1	6,3	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	45	95,7	2	4,3

Respondents indicated that for taking the history of a patient's pain, the systematic pain guide was included in the learning content of pain management education for nurses.

(6)   Systematic pain assessment guides for pain history taking (N=47)

For pain history taking, a patient's self-report of pain is the most important component of comprehensive pain assessment; thus, asking questions that follow five key components of the WILDA pain assessment guide is essential (McDaniel, Caspersen, Crumpton, Galbraith, Hall, Huddleston, Puckett & Williams 2021:5; Fink & Brant 2018:356). To assess pain comprehensively, the five domains of WILDA needed to be included in the learning content of pain management education (see Table 4.32). The domains are (1) asking about the intensity of pain using the pain scale (n=46), (2) the location of pain (n=46), (3) the duration of pain (n=46), aggravating or alleviating factors (n=46), and (5) asking the patient to describe the type of pain in his/her own words (n=45). The domains were reported to be included in the pain management learning content, as illustrated in Table 4.32.

(a)   The intensity of pain using the pain scales (N = 47)

According to the literature, the pain management learning content must include the domain by asking the patient to rate the intensity or magnitude of experienced pain using the pain scales (Peate 2019: 510). Asking about the intensity of their pain by using the pain scales was reported to be included in the learning content by all of the respondents in all wards, except for the one respondent in an obs-gynae ward (F = 4; n = 5).

(b)   The location of the pain (N = 47)

Inglis and Kenneally (2020:194) indicated that it is essential to include educational content on pain management and how to conduct pain assessment by asking the patient to point to the location of the painful sites, assisting in determining nursing interventions. Questions about the location of pain were indicated to be part of the learning content by all respondents from medical wards, surgical wards, paediatric wards, and cardiac wards. Only one respondent in an obs-gynae ward (F = 4; n = 5) did not include it in the learning content (see Table 4.32).

(c)   The duration of pain (N = 47)

The pain module learning content includes a comprehensive pain assessment to distinguish between acute and chronic pain that is determined by the onset of pain, its duration, as well as how long the nonverbal patients exhibit any nonverbal cues of pain (Lewis et al. 2017:108). As portrayed in Table 4.32, in obs-gynae wards, four out of five of the respondents indicated that they were including the domain of asking about the duration of pain as learning content for pain management education, while all respondents from other nursing wards indicated that they were including this domain (see Table 4.40).

(d)   Aggravating or alleviating factors (N = 47)

Aggravating or alleviating factors refer to the influences or factors that increase pain as well as activities and situations that decrease pain (Fink and Brant 2018:358; Lewis et 2016:108). All respondents from all nursing wards apart from the one but the same respondent from the obs-gynae ward (F = 4; n = 5) included this domain (see Table 4.32).

(e)   Description of the type of pain (N = 47)

According to the participants, the importance of asking patients to describe their pain formed part of the content of the pain management education for nurses. Part of the pain management training program for nurses included a description of the type of

pain as reported by the respondents (see Table 4.32). All respondents in all nursing wards, exclusive of one participant in a medical ward (F = 15; n = 16) and one participant in a gynae ward (F = 4; n = 5), indicated that they include this domain (see Table 4.32).

Valid and reliable pain rating scales must be included in the learning content of pain management education for nurses.

(7)   The valid and reliable pain rating scales (N = 47)

As part of learning about pain assessment, valid and reliable pain rating scales did form part of the pain management training program's content for nurses, as illustrated in Table 4.33. The scales used to rate pain mentioned by respondents were (1) the Numeric Rating Scale (n = 45), (2) the FLACC pain scale (n = 44), (3) the Wong-Baker Faces scale (n = 43), and (4) the CRIES pain scale (n = 39) (see Table 4.33). The respondents from the various wards in the study indicated that the teaching content on pain management included these scales, as illustrated in Table 4.33.

Table 4.33: The valid and reliable pain rating scales (N = 47)

Valid and reliable pain rating scales	Nursing Wards																						TOTAL			
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Numeric Rating scale	15	93,8	1	6,3	15	100	0	0	7	100	0	0	4	80	1	20	4	100	0	0	45	95,7	2	4,3
FLACC pain scale	13	81,3	3	18,8	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	44	93,6	3	6,4
Wong-Baker Faces scale	13	81,3	3	18,8	15	100	0	0	7	100	0	0	4	80	1	20	4	100	0	0	43	91,5	4	8,5
CRIES scale	12	75,0	4	25	12	80	3	20	7	100	0	0	5	100	0	0	3	75	1	25,0	39	83,0	8	17,0

(a) Numeric rating scale (N = 47)

Cianfrini, Doleys and Richardson (2021:45) recommend that the learning content of pain management education for nurses and patients should include training on how to use NRS to assess and rate pain. The majority of respondents in all wards indicated that they included training on the NRS rating scale in the study content, with two exceptions: one respondent in the medical ward (F = 15; n = 16) and one respondent in the gynae ward (F = 4; n = 5). (see Table 4.33).

(b) FLACC scale (N = 47)

Only three respondents from medical wards (F = 13, n = 16) indicated that they did not include FLACC during pain management training sessions (see Table 4.33). On the other hand, all respondents in the other wards included it in the study.

(c) Wong-Baker FACES scale (N = 47)

As illustrated in Table 4.33, the respondents in all the wards, except two in a medical ward (F = 13; n = 16) and one in an obs-gynae ward (F = 4; n = 5) agreed that they include the Wong-Baker FACES scale when training nurses regarding pain management (see Table 4.33). The authors Erogan and Celik (2020:1020), as well as Ziyaeifard, Azarfarin, Zamani, Alizadehasi, Khalili, Moradian, Koleini and Pouraliakbar (2018:13), recommend that the Wong-Baker FACES scale to rate the severity of pain must be part of the content of an education program to teach pain management.

(d) CRIES scale (N = 47)

It is important to include in the learning content of pain management education the topic of how to use the CRIES scale, as recommended by Cameron, Browne, Mitra, Dalziel and Craig (2018:453) as well as by Costa et al. (2017:6). Both in obs-gynae wards and paediatric wards all respondents agreed that they do include training of the CRIES rating scale in the study content (see Table 4.33). Two respondents from

medical wards (F = 12; n = 16), three from surgical wards (F = 12; n = 15), and one from cardiac wards (F = 3; n = 4) indicated that they do *not* include CRIES as part of the pain management training program (see Table 4.33).

The respondents indicated that the topic of the types of acute pain was included as part of the pain management training program.

(8)   Acute types of pain (N = 47)

It is well-known that acute pain has a short duration and lasts less than 3 to 6 months, and it may be due to trauma, disease process, injury, or surgery with three general types: nociceptive, inflammatory, and neuropathic (Buckenmaier, Kent, Mariano & Brookman 2019:216). To manage pain effectively, the acute types of pain need to form part of the learning content of pain management training (see Table 4.34). The pain types are (1) post-procedural pain (n = 47), (2) procedural pain (n = 46), (3) acute postoperative pain (n = 46), (4) the acute disease process (n = 45), traumatic pain (n = 44), and labour pain (n = 35) (see Table 4.34).

The acute types of pain covered in pain management learning content were indicated in various wards by respondents in the study, as illustrated in Table 4.34.

Table 4.34: Acute types of pain (N = 47)

Acute types of pain	Nursing Wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n =	%	n =	%
Post-procedural pain	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100	0	0
Procedural pain	15	93,8	1	6,3	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	46	97,8	1	2,1
Acute post-oper-ative pain	15	93,8	1	6,3	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	46	97,8	1	2,1

Acute diseases process	16	100	0	0	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	45	95,7	2	4,3
Traumatic pain	15	93,8	1	6,3	15	100	0	0	7	100	0	0	4	80,0	1	20,0	4	100	0	0	44	93.6	3	6,4
Labour pain	13	81,3	3	18,8	10	66,7	5	33,3	5	71,4	2	28,6	4	80,0	1	20,0	3	75,0	1	25,0	35	74,5	12	25,5

(a)   Post-procedural pain (N = 47)

Post-procedural pain is known as the pain inflicted after any procedure performed by a healthcare provider (Ahmed 2020:24; Gooden, Lowrie & Jackson 2018:128; Bice 2018:231). All respondents in the study agreed that they include this type of pain as part of the pain management training program (see Table 4.34).

(b)   Procedural pain (N = 47)

Procedural pain is a type of acute pain potentially triggered during procedures performed by a healthcare worker (Sumser, Leimena & Altillo 2019:54; Bice 2018: 231). All respondents from all the wards included in the study indicated to have included this type of pain in the pain management training program (see Table 4.34)

(c)   Acute postoperative pain (N = 47)

Acute postoperative pain is known to be the type of pain patients experience immediately and for up to seven days after surgery (Fleisher & Rosenbaum 2017:185). Table 4.34 shows that acute postoperative pain as a type of pain experienced by patients was reported to be part of the teaching content of pain management training sessions for nurses by all respondents in the wards, except for one respondent in an obs-gynae ward (F = 4; n = 5) (see Table 4.34).

(d)   Acute disease process (N = 47)

Craft, Gordon, Huether, McCane and Brashers (2018:5) described the acute disease process as an acute type of pain associated with pathophysiological processes that produce temporarily deferred discomforts and occur for a short duration. All respondents in all the wards, apart from one respondent in an obs-gynae ward (F = 4; n = 5), indicated that they included training on the acute diseases process in the study content.

(d)   Traumatic pain (N = 47)

Traumatic pain is any pain that occurs following injuries from physical trauma (American Academy of Orthopaedic Surgeons 2021:280). There was consensus among all respondents that traumatic pain was a part of the pain management training program. However, one respondent from a medical ward (F = 15; n = 16) and one from a gynae ward (F = 4; n = 5) indicated that this type of pain is not covered by the pain management training program (see Table 4.34).

(e)   Labour pain (N = 47)

Labour pain is a recurrent pain associated with the contraction of the uterus in labour (Mosby's Dictionary 2013:1002). Thirteen (n = 16) respondents in medical wards, 10 (n = 15) in surgical wards, five (n = 7) in paediatric wards, four (n = 5) in obs-gynae wards, and three (n = 4) in cardiac wards indicated that they include labour pain as part of pain management training program (see Table 4.34).

Part of the pain management program covered chronic pain types during education for nurses.

(9)   Chronic pain types (N = 47)

Chronic pain is the type of pain that lasts longer than 12 weeks and can be broken into three major types, namely, pain from tissue damage (nociceptive pain), pain from somatosensory damage (neuropathic pain), or a mixture of both nociceptive and somatosensory (Shah, Kodack & Walker 2020:1). Chronic pain types needed to be included as part of the pain management training program (see Table 4.35). The chronic pain types are (1) low back pain (n = 43), (2) neuropathic pain (n = 42), (3) headache (n = 42), and (4) cancer pain (n = 40) (see Table 4.35).

The chronic pain types that form part of the pain management learning content were indicated in various wards by respondents in the study, as illustrated in Table 4.35.

Table 4.35: The chronic pain types (N = 47)

Chronic types of pain	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Low back pain	16	100	0	0	14	93,3	1	6,7	6	85,7	1	14,3	3	60,0	2	40,0	4	100	0	0	43	91,5	4	8,5
Neuro-pathic pain	16	100	0	0	13	86,7	2	13,3	6	85,7	1	14,3	3	60,0	2	40,0	4	100	0	0	42	89,4	5	10,6
Headache related to migraine	14	87,5	2	12,5	14	93,3	1	6,7	7	100	0	0	3	60,0	2	40,0	4	100	0	0	42	89,4	5	10,6
Cancer pain	15	93,8	1	6,3	13	86,7	2	13,3	6	85,7	1	14,3	3	60,0	2	40,0	3	75,0	1	25,0	40	85,1	7	14,9

(a)   Low back pain (N = 47)

Low back pain (LBP) is a type of pain that presents with muscle tension or stiffness localized in the margin and above the inferior gluteal folds, with or without sciatica (leg pain) related to sciatic nerve compression resultant from trauma or pathology and persists for more than three months (Noormohammadpour, Kordi, Masournia, Akbari-Fakhrabadi & Kordi 2018:492; NSCA-National Strength and Conditioning Association & Jacobs 2018:68). Table 4.35 illustrates the respondents that reported including the chronic type of pain as teaching content of pain management program. Fourteen (n = 15) in surgical wards, six in paediatric wards (n = 7), and three in obs-gynae wards (n = 5) indicated that low back pain formed part of pain management education for nurses.

(b)   Neuropathic pain (N = 47)

Neuropathic pain is caused by a lesion or disease of the somatosensory nervous system (Benson, Raja, Fishman, Liu & Cohen 2017:252). The patients suffering from this type of pain need to be assessed and managed for pain relief. This is essential as it was reported in the study by all of the respondents in all wards that neuropathic pain is included in the learning content of pain management education for nurses, apart from two respondents in surgical wards (F = 13; n = 15), one respondent in a paediatric ward (F = 6; n = 7), and two respondents in obs-gynae wards (F = 3; n = 5) (see Table 4.35).

(c)   Headache related to migraine (N = 47)

Headaches related to migraines are recurring symptoms of pain associated with abnormal sensory perception (Hwang; Tsai, Liu, Chen & Lai 2018:713; Mosby Dictionary 2013:1143). Part of the pain management teaching content included headaches related to migraine as indicated by all of the respondents in all wards, except for one

respondent in a surgical ward (F = 14; n = 15), two in medical wards (F = 14; n = 16), and two in obs-gynae wards (F = 3; n = 5) (see Table 4.35).

(d)   Cancer pain (N = 47)

Cancer pain is a dull aching, well localised deep squeezing pressure, burning, or tingling pain caused by damage to bones, pressing on the nerves, or internal organs (Burton & Bejarano 2021:58). Alnajar, Darawad, Alshahwan and Samarkandi (2019:186) recommend that it is essential to include cancer pain as the teaching content of pain management programs for nurses. Table 4.35 illustrates that the respondents in the study indicated that cancer pain was included as part of the pain management teaching program. Respondents from medical wards (F = 14; n = 16), surgical wards (F = 13; n = 15), paediatric wards (F = 6; n = 7), cardiac wards (F = 3; n = 4), and obs-gynae wards (F = 3; n = 5) responded that cancer pain was included in pain management teaching program (see Table 4.35).

Respondents indicated that the factors related to the impact of pain on activities of daily living and quality of life should be included in the learning content of pain management education.

(10)   Factors related to the impact of pain on activities of daily living (ADLs) and quality of life (QOL) (N = 47)

Pain is multidimensional and contributes to the biopsychosocial experiences of pain impacting activities of daily living (ADLs) and quality of life (Fundaskowski 2020:161; Gagliese, Gauthier, Narain & Freedman 2018:208). Activities of daily living (ADLs) are self-care tasks required on a day-to-day basis that indicate the functional status (Ramachandra 2018:27). At the same time, the quality of life (QOL) is individuals' perceptions of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns (Ragsdale & Miller 2020:6). It is essential to identify the factors related to the impact of pain on

ADLs and QOL needed to be included in the learning content of pain management. The factors are (1) the physical impact of pain (n = 44), (2) the psychological impact of pain (n = 42), and (3) the social impact of pain (n = 41). As suggested by Alnajar et al. (2019:186), the factors related to the impact of pain need to form part of the learning content of pain management education.

The respondents from various wards indicated that the teaching content on pain management included these factors, as illustrated in Table 4.36.

Table 4.36: The factors related to the impact of pain on ADLs and QOL (N = 47)

Factors related to the impact of pain on ADLs and QOL	Nursing Wards																				
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Physical impact of pain	16	100	0	0	14	93,3	1	6,7	7	100	0	0	3	60,0	0	0	4	100	0	0	44	93,6	3	6,4
Psychological impact of pain	14	87,5	2	13,3	13	86,7	2	13,3	7	100	0	0	4	80,0	1	20,0	4	100	0	0	42	89,4	42	89,4
Social impact of pain	16	100	0	0	13	86,7	2	13,3	7	100	0	0	3	60,0	2	40,0	2	50.0	2	50,0	41	87,2	6	12,8

(a) Physical impact of pain (N = 47)

The physical impact of pain includes any physical disability which influences the experience of pain and has a negative effect on reducing the patient's ability to perform ADLs and QOL (Chang & Johnson 2021:420; Ugur & Erci 2019:330). As illustrated in Table 4.36, all respondents in all the wards agreed that they include the physical impact of pain when training nurses about pain management except for one respondent in a surgical ward (F = 14; n = 15) and two respondents in obs-gynae wards (F = 3; n = 5) who did not agree.

(b) Psychological impact of pain (N = 47)

The psychological impact of pain includes any mental disorders which influence pain experience that contribute to disability in patients' ADLs and QOL (Fundaskowski 2020:161). All respondents in cardiac and paediatric wards indicated that they include the psychological impact in the learning content of pain management training (see Table 4.36). In medical wards, 14 out of the 16 respondents, 13 out of 15 in surgical wards, and 4 out of 5 in obs-gynae wards agreed that they include the psychological impact in the learning content of pain management training (see Table 4.36).

(c) Social impact of pain (N = 47)

The social impact of pain is considered to be any strained social relationship that influences an individual's pain experience (Fundaskowski 2020:161). In both wards, namely, medical wards and paediatric wards, all respondents reported that the social impact of pain forms part of the teaching of pain management to nurses, apart from 13 of the respondents in surgical wards (n = 15), three in obs-gynae wards (n = 5), and two in cardiac wards (n = 4) (see Table 4.36).

As part of the nursing plan of care, strategies of planning for pain management were identified to be educated during pain management education.

4.4.4.2 Strategies to plan for pain management (N = 47)

The strategies to plan for pain management are the components of the nursing process and involve actions designed to achieve the target goal regarding pain management (Miftah, Tilahun, Fantahun, Adulkadir & Gebrkirstos 2017:2). As illustrated in Table 4.37, there are several strategies to plan for pain management as indicated by respondents which they do include in the learning content of pain management education, namely (1) development of a nursing care plan (n = 46), (2) setting expected outcomes to enhance a patient's comfort (n = 46), (3) identifying patients' pain management goals (n = 45), and (4) setting measurable goals to achieve a satisfactory level of pain along with the patient (n = 45) (see Table 4.37).

The strategies to plan for pain management indicated to be included in the learning content of pain management education by the respondents in various wards are illustrated in Table 4.37.

Table 4.37: The strategies to plan for pain management (N = 47)

Strategies to plan for pain management	Nursing Wards																				
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N - = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Development of a nursing care plan	15	93,8	1	6,3	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1
Setting expected outcomes to enhance patients' comfort	16	100	0	0	14	93,3	1	6,7	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1
Identifying patient's pain management goals	15	93,8	1	6,3	14	93,3	1	6,7	7	100	0	0	3	60,0	2	40,0	4	100	0	0	45	95,7	2	4,3

| Setting measurable goals to achieve a satisfactory level of pain along with the patient | 15 | 93,8 | 1 | 6,3 | 14 | 93,3 | 1 | 6,7 | 7 | 100 | 0 | 0 | 5 | 100 | 0 | 0 | 4 | 100 | 0 | 0 | 45 | 95,7 | 2 | 4,3 |

1)   *Development of the nursing care plan (N = 47)*

The nursing care plan addresses patients' pain management needs and provides communication among nurses and other healthcare providers about patients experiencing pain to achieve a satisfactory outcome for the level of pain (Ballantyne 2017:79; Fitzpatrick 2017:531). To manage pain effectively, it is essential to include how to develop a nursing care plan in the learning content of pain management education, as it was indicated and agreed by all respondents in all the wards, exclusive of only one respondent in a medical ward (F = 15; n = 16) that did not agree (see Table 4.45).

2)   Setting expected outcomes to enhance patients' comfort (N = 47)

Setting expected outcomes to enhance patients' comfort is part of the nursing care process related to pain management that indicates the result of the care implemented to patients to relieve the pain and maintain patients' functional status, safety, and satisfaction (Baraki, Girmay, Kidanu, Gerensea, Gezehgne & Teklay 2017:8; Fairchild, O'Shea & Washington 2017:329). Table 4.37 indicates that all respondents in all the wards agreed that setting expected outcomes to enhance patients' comfort formed part of the learning content of pain management training, but only one respondent in a surgical ward (F = 14; n = 15) did not agree.

3)   Identifying patients' pain management goals (N = 47)

Patients' pain management goals are the aims of the nursing care process used to direct pain management that is patient-centred and to assist the patients to use measurable, attainable, realistic, and timely (SMART) goals to participate in their pain management care, readiness to change their pain management beliefs, self-efficacy and achieve outcomes that are satisfactory to them (Suresh 2017:229). All respondents in all the wards except one respondent in a medical ward (F = 14; n = 15), one in a surgical ward (F = 14; n = 15), and three in obs-gynae wards (F = 2; n = 5) indicated

that they include identification of patients' pain management goals in the study content (see Table 4.37).

4)   *Setting measurable goals to achieve a satisfactory level of pain along with the patient (N = 47)*

Setting measurable goals to achieve a satisfactory level of pain along with the patient are the standards against which to measure or observe a patient's response to pain nursing interventions if a change takes place in a patient's pain experience and severity (Suresh 2017:229). As illustrated in Table 4.37, all respondents in all the wards, excluding only one respondent in a medical ward (F = 15; n = 16) and one in a surgical ward (F = 14; n = 15), agreed that setting measurable goals to achieve a satisfactory level of pain along with the patient formed part of the learning content of their pain module.

The pain intervention strategies implemented to manage the pain were essentially covered in the learning content of pain management training for nurses.

4.4.4.3 Pain intervention strategies implemented (N = 47)

The pain intervention strategies to be implemented form a component of the nursing care process essential to managing patients' pain that must be included in the learning content of pain management education for nurses. The pain intervention strategies reported by respondents to be included, are (1) non-pharmacological interventions (n = 47), (2) pharmacological interventions (n = 47), and (3) patient and family education about pain management (n = 47) (see Table 4.38).

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Table 4.38: The pain intervention strategies implemented (N = 47)

Pain intervention strategies	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N - = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Non-pharmacological pain interventions	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0
Pharmacological pain interventions	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0
Patient and family education about pain management	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0

1)   *Non-pharmacological interventions (N = 47)*

All respondents from all nursing wards indicated that the pain management teaching content included non-pharmacological pain interventions (see Table 4.38).

2)   *Pharmacological interventions (N = 47)*

Pharmacological interventions were included in the learning content of pain management education, as indicated by all study respondents from all nursing wards (see Table 4.38).

3)   *Patient and family education about pain management (N = 47)*

Patient and family education about pain management is the practice of informing patients and families about their health, wellness, treatment plans, potential outcomes, and other information, such as skills specific to self-managing pain, maintaining, coping with new situations, and improving the quality of life (Fereidouni, Sarvestani, Hariri, Kuhpaye, Amirkhani & Kalyani 2019:5). All respondents from all nursing wards in the study agreed that they include patient and family education in the learning content of pain management education for nurses (see Table 4.38).

4.4.4.4 Nursing actions for pain management evaluation (N = 47)

Pain management evaluation relates to the reassessment of the effectiveness or outcomes of the pain interventions implemented (Malik 2020:3; Pickering et al. 2018:97). The nursing actions for pain management evaluation that were reported by respondents to be relevant and included in the learning content of pain management education were (1) assessment of the effectiveness of pain nursing care interventions implemented (n = 47), (2) monitoring of adverse effects of pain medications (n = 47), and (3) pain reassessment after interventions of pain (n = 47) (see Table 4.39).

Table 4.39: The nursing actions for pain management evaluation (N = 47)

Pain management evaluations	Nursing wards																						
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N - = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	n	%	n	%
Assessment of the effectiveness of pain nursing care interventions	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0
Monitoring of adverse effects of pain medications	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0
Pain reassessment after interventions	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100,0	0	0

1)   Assessment of the effectiveness of pain nursing care interventions (N = 47)

Assessment of the effectiveness of pain nursing care interventions implemented is a form of the cycle of evaluation at an appropriate interval after pain nursing interventions by comparing the result of the previous pain rating or situation that indicates the effectiveness or outcome of the pain relief measures applied (Naqib, Purvin, Prasad, Hanna, Dimitri, Llufrio & Hanna 2018: 449; Stannard & Krenzischek 2016:209). All respondents in all the wards reported that the assessment of the effectiveness of pain nursing care interventions implemented was included in the teaching content of pain management training sessions for nurses (see Table 4.39).

2)   Monitoring adverse effects of pain medications (N = 47)

Adverse effects related to pain medications refer to any undesired abnormal, harmful, or unpleasant effects resulting from pain medications (Drew, Gordon, Morgan & Manworren 2018:209; Brown, Edwards, Seaton & Buckley 2017:65; Ray 2017:116). Table 4.39 illustrates that all respondents in all the wards reported that monitoring of adverse effects related to pain medications administered to the patients was included in the learning content of the pain management training program.

3)   Pain reassessment after interventions (N = 47)

Pain reassessment after pain interventions is part of the constant cycles of pain assessment that include evaluating the effectiveness and outcome of pain interventions to achieve a goal desired during planning with the patient (Brown et al. 2017:73; Keen et al. 2017:138). All respondents in the study agreed that constant pain reassessment after pain interventions was covered in the learning content of pain management education for nurses (see Table 4.39).

4.4.5   Transfer of learning climate within the hospital nursing care

It is essential to identify the characteristics of transfer of learning that support and motivate nurses to apply knowledge in the practice of what was learned before in pain management education (Ma et al. 2018:2). Table 4.40 illustrates the characteristics of transfer of learning climate created within the hospital nursing care and identified as supportive by the respondents to motivate the nurses to apply knowledge in the practice of what was learned before in pain management education. The supportive transfer of a learning climate within hospital nursing care indicated by respondents to be available were: (1) the nursing leadership values the learning needs (n = 47), (2) a pain management orientation program is available (n = 47), (3) clinical facilitators offer constructive feedback to registered nurses (n = 47), (4) there is continuous education by the nurse managers (n = 46), (5) trained nurse preceptors orientate newly employed registered nurses (n = 46), (6) there is support by nurse managers (n = 46), (7) there are dedicated clinical facilities for pain management available (n = 45), (8) registered nurses are freely allowed to apply pain management (n = 45), (9) there is peer support among registered nurses (n = 44), (10) there is support from nursing supervisors (n = 40), and (11) non-trained nurse preceptors orientate newly employed registered nurses (n = 33) (see Table 4.40).

Table 4.40: The transfer of learning climate within the hospital nursing care (N = 47)

Transfer of learning climate	Nursing Wards																							
	Medical				Surgical				Paediatric				Obs-gynae				Cardiac				TOTAL			
	n = 16				n = 15				n = 7				n = 5				n = 4				N = 47			
	Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No	
	F =	% =	F =	% =	F =	%	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	F =	% =	n	%	n	%
Nursing leadership values learning needs	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100	0	0
A pain management orientation program is available	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100	0	0
Constructive feedback to registered nurses	16	100	0	0	15	100	0	0	7	100	0	0	5	100	0	0	4	100	0	0	47	100	0	0
Continuous education by nurse managers	16	100	0	0	14	93.3	1	6.7	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1
Trained nurse preceptors orientate new RNs	16	100	0	0	14	93.3	1	6.7	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1
Support by nurse managers	16	100	0	0	14	93.3	1	6.7	7	100	0	0	5	100	0	0	4	100	0	0	46	97,9	1	2,1

	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Dedicated clinical facilities for pain management are available	15	93.8	1	6.3	15	100	0	0	7	100	0	0	5	100	0	0	3	75.0	1	25.0	45	95,7	2	4,3
RNs freely allowed to apply pain management skills	16	100	0	0	13	86.7	2	13.3	7	100	0	0	5	100	0	0	4	100	0	0	45	95,7	2	4,3
Peer support of RNs	15	93.8	1	6.3	14	93.3	1	6.7	7	100	0	0	5	100	0	0	3	75.0	1	25.0	44	93,6	3	6,4
Support by nurse supervisors	15	93.8	1	6.3	12	80.0	3	20.0	7	100	0	0	4	80.0	1	20.0	2	50.0	2	50.0	40	85,1	7	14,9
Non-trained nurse preceptors orientate RNs	13	81.3	3	18.8	13	86.7	2	13.3	3	42.9	4	57.1	2	40.0	3	60.0	2	50.0	2	50.0	33	70,2	14	29,8

1)   Nursing leadership values learning needs (N = 47)

The support from nursing leadership was essential to value the learning needs of the nurses regarding the pain management training program to enhance the transfer of learning of pain management competencies of nurses, as illustrated in Table 4.40. All respondents in the study indicated that their nursing leadership valued the learning needs of nurses about pain management to apply knowledge that was learned before in practice (see Table 4.40).

2)   A pain management orientation program is available (N = 47)

The availability of a pain management orientation program was essential to support newly employed registered nurses in acquainting themselves with the pain management practice of the hospital (see Table 4.40)**.** This is known as a supportive, transformative process to introduce new incoming nurses to important information and a work environment about pain management (Miller & Geahart 2021:269; Kundu & Lata 2017:5). All respondents in all the wards agreed that a pain management orientation program was available that created a positive learning climate to support newly employed registered nurses to be acquainted with the pain management practice of the hospitals (see Table 4.40).

3)   Constructive feedback to registered nurses (N = 47)

Constructive feedback refers to a formal or informal acknowledgement of performance or success and areas for improvement related to pain management provided privately and maintained confidentially (Dwyer & Hopwood 2019:159). Constructive feedback to registered nurses regarding their performance in pain management was reported as support available, as illustrated in Table 4.40. As illustrated in Table 4.40, all respondents in the study agreed that registered nurses were receiving supportive,

constructive feedback that created a positive transfer of learning climate within their wards.

4)   Continuous education by nurse managers (N = 47)

Continuous education by nurse managers is a constant state of supporting registered nurses to remain current in knowledge or keeping abreast with the latest developments, learning new skills, and new changes in technologies required for pain management (Hughes 2019:166; Wei, Roberts, Strickler & Corbett 2018:685). All respondents in all the wards indicated that the nurse managers offered continuous education to support nurses on pain management, except for one respondent in a surgical ward (F = 14; n = 15) (see Table 4.40).

5)   Trained nurse preceptors orientate newly employed registered nurses (N = 47)

Trained preceptors are nurses who consistently demonstrate evidence-based nursing practices to support other nurses after receiving a preceptor education program (Ciocco 2020:6; Maryniak, Markantes & Murphy 2017:6). All respondents in all the wards indicated that the newly employed registered nurses were receiving an orientation about pain management in their wards, except for one respondent in a medical ward (F = 14; n = 15) who disagreed (see Table 4.40).

6)   Support by nurse managers (N = 47)

Nurse managers' role is to support nurses in achieving evidence-informed nursing practice regarding pain management (McCleary & McParland 2021:154; Peterson, Berggården, Schaller & Larsson 2019:138). As portrayed in Table 4.40, all respondents in all the wards indicated that nurse managers supported nurses in transferring what they learned from the pain management training program into the workplace, except one participant in a surgical ward (F = 14; n = 15).

7)   Dedicated clinical facilities for pain management are available (N = 47)

Dedicated clinical facilities for pain management denote a positive, supportive working environment with available resources to facilitate clinical training of nurses at patient care training sites to learn about pain management (Huber & Joseph 2021:332; Lewis et al. 2017:50; Veal, Williams Bereznicki, Cummings, Thompson & Winzenberg 2017:184). Only one respondent from a medical ward (F = 15; n = 16) and one in a cardiac ward (F = 3; n = 4) did not agree that clinical facilities for pain management were available to support the nurses in applying their knowledge in the practice of what was learned in pain management, contrary to all respondents in the other wards who agreed (see Table 4.40).

8) *Registered nurses are freely allowed to apply pain management skills (N = 47)*

According to Disha Experts (2021:10) and Na-an, Chaipraist and Pukkeeree (2017:303), registered nurses who are autonomous at work are more motivated to apply their knowledge. According to all respondents in all wards, nurses can apply pain management skills freely (see Table 4.40), except for one respondent in a surgical ward (F = 13; n = 15).

9) *Peer support of registered nurses (N = 47)*

Peers or co-workers can support registered nurses to apply the new skills gained in pain management from learning programs to the workplace (Chatterjee, Pereira & Bates 2018:14; Ma et al. 2018:4). Table 4.40 illustrates that all respondents from paediatric wards (n = 7) and obs-gynae wards (n = 5) agreed that peers or co-workers can support registered nurses in implementing pain management skills from learning programs to their workplace. However, only one respondent in a medical ward (F = 15; n = 16), one in a surgical ward (F = 14; n = 15), and three respondents in cardiac wards (F = 3; n = 4) disagreed that peers or coworkers could support nurses (see Table 4.40).

Table 4.40 illustrates that all respondents from paediatric wards (n = 7) and obs-gynae departments (n = 5) agreed that peers or coworkers could support registered nurses in implementing pain management skills from learning programs.

10)   *Support by nurse supervisors (N = 47)*

The support by nurse supervisors is known to provide a link between hospital management and clinical care as it promotes and encourages the continuity of professional development of registered nurses at the workplace (Ma et al. 2018:4; Mather & Cummings 2017:4). Support by nurse supervisors to nurses about pain management was reported to be available by all respondents in paediatric wards (see Table 4.40). Twelve (n = 16) respondents in medical wards, 12 (n = 15) in surgical wards, four (n = 5) in obs-gynae wards, and two (n = 5) in cardiac wards agreed that nurse supervisors were offering support to the nurses to apply knowledge about what they have learned regarding pain management (see Table 4.40).

11)   *Non-trained nurse preceptors orientate newly employed registered nurses (N = 47)*

As illustrated in Table 4.40, the newly employed registered nurses were reported to receive orientation from non-trained preceptors regarding pain management: 13 (n = 15) respondents in surgical wards, 13 (n = 16) in medical wards, two (n = 4) in cardiac wards, three (n = 7) in paediatric wards, and two (n = 5) in obs-gynae wards (F = 2; n = 5). The study by Innes and Calleja (2018: 71) indicated that, based on experience and practice, the non-trained preceptors could orientate new nurses regarding pain management. However, several studies indicated that nurse preceptors who did not attend preceptor training programs ineffectively and poorly orientate new nurses (L'Ecuyer, Hyde & Shatto 2018:239), contrary to the findings in this study.

12)   *Non-trained nurse preceptors orientate newly employed registered nurses (N = 47)*

As illustrated in Table 4.40, the newly employed registered nurses were reported to receive orientation from non-trained preceptors regarding pain management: 13 (n = 15) respondents in surgical wards, 13 (n = 16) in medical wards, two (n = 4) in cardiac wards, three (n = 7) in paediatric wards, and two (n = 5) in obs-gynae wards (F = 2; n = 5). The study by Innes and Calleja (2018: 71) indicated that, based on experience and practice, the non-trained preceptors could orientate new nurses regarding pain management. However, several studies indicated that nurse preceptors who did not attend preceptor training programs ineffectively and poorly orientate new nurses (L'Ecuyer et al. 2018:239), contrary to the findings in this study.

Respondents further commented on resources available to conduct pain assessment, teaching approaches employed in pain management education, and transfer of learning climate with the hospital nursing care areas.

4.4.6 Thematic content analysis

Eleven respondents provided additional answers to the open-ended question for qualitative enhancement that allowed for written comments (see Annexure 5). After reading through all the narrative data, themes emerged, namely: (1) the availability of pain management resources, (2) a teaching pain management culture, (3) a pain management refresher program, and (4) positive feedback.

1)   Availability of pain management resources

The following narratives, as direct quotations, emphasize that there are pain management resources available to assess and manage pain:

> *"Different resources are easily accessible to staff electronically in the unit".*

> "*Pain management is a well-stabilised program in our organization with highly qualified personnel*".

> "*Pain resource[s] online readily available for staff including documentation pa-rameters*".

According to Grossman and Burke-Smalley (2018:242), a facilitated training transfer climate is enhanced if there are sufficient pain management resources available at the workplace to be engaged.

2)   A teaching pain management culture

According to respondents, pain management is taught in their wards (see examples below):

> "*Doing rounds in the morning and ask[ing] each patient for pain as CRN [clinical facilitator], discuss with [the] primary nurse what medications given, [and] edu-cate primary nurses about pain*".

> "*I will be grateful if there is a Pain Management Nurse with direct care in each unit that is dedicated to support both patient and all health care.*"

This finding is confirmed as it was indicated that further learning about pain manage-ment in a practice setting was required to increase learner participation through a col-laborative interprofessional team approach to enhance the transfer of learning of pain management competencies (Gordon, Watt-Watson & Hogans 2018:2).

3)   Pain management refresher program

Participants mentioned the need for a pain management refresher program as a way to stay current with pain management. The narrative below illustrates this subheading:

> "*I suggest having from time-to-time refreshment and update sessions for pain assessment and management*".

"Nurse Specialist to come quarterly to the unit to give latest updates regarding pain management".

This postulates that providing a pain management refresher program is an effective ongoing post-training booster training strategy that substantially enhances the transfer of learning to sustain recall, retention, and application of the important concepts learned during training in the workplace (O'Donovan, O'Donovan, Kuhn, Sachs & Winters 2018:5; Stuns & Heaslip 2019:198).

4)   Positive feedback

Receiving positive feedback about pain management performance can contribute to a positive learning climate in nursing care settings, as reported by one participant:

"*Motivate staff and provide feedback to them if they are doing correct documentation about pain*".

The study of Hughes, Zajac, Spencer and Salas (2018:4) recommends that providing feedback (for example, performance about pain management) on progress related to how the trained skills were performed motivates the transfer of learning and plays a role in a supportive transfer climate.

4.5   CONCLUSION

This chapter analysed and interpreted data from Phases 1 to 3.

Chapter 5 will discuss Phase 4 – the literature review on action plan development and a draft action plan.

CHAPTER 5: PHASE 4: LITERATURE REVIEW ON ACTION PLAN DEVELOPMENT

5.1   INTRODUCTION

Chapter 5, as illustrated in Table 5.1, describes Phase 4 of the study, which consists of a literature review on action plan development and the process followed to develop the first draft action plan. This phase covered the study's objective of developing an action plan to enhance the transfer of learning of pain management competencies of nurses.

The first draft action plan was developed utilising the analysed data from Phases 1, 2, and 3 of this study, as well as a literature review on the **principles** for drafting an action plan, the **steps to follow in action plan development** and the **Systemic Model of Transfer of Learning**, applicable to this study.

Table 5.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	**Chapter outline**	**Chapter content**
Chapter 1	Overview of the study.	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review.	Consists of the literature review related to: 1) Systemic Model of Transfer of Learning by Donovan and Darcy, 2) Transfer of learning and 3) Pain management and tools.
Chapter 3	Research design and methodology.	1) Illuminates the overarching research design. 2) Phases 1, 2, and 3 (quantitative phases): Methodology and 3) Data gathering.

Chapter 4	Data analysis and interpretation.	Presents the data analysis and interpretation of the findings from Phases 1 to 3.
Chapter 5	Phase 4.	Includes a description of Phase 4 of the study: a) Literature review on action plan development. b) Development of the draft action plan.
Chapter 6	Phase 5.	Outlines and describes Phase 5 of the study (qualitative phase): a) Methodology. b) Validation of the action plan: c) The action plan.
Chapter 7	Conclusion, recommendations, and limitations.	Deals with the conclusion, recommendations, and limitations of the study.

5.2 AN ACTION PLAN

An action plan is defined as a written document or systematic way that describes specific actions or steps that must be performed to achieve set goals by identifying all key stakeholders who must execute the activities. The stakeholders can be supervisors, trainers, clinical facilitators, trainees, and co-workers who will implement and sustain the set goals that help to enhance the transfer of learning to performance (Gliva-McConvey, Nicholas & Clark 2020:172; Grisold, Struhal & Grisold 2019:259; Abrahamson & Langston 2017:128; Cunningham & Bennett 2017:22; Saunders 2015:127). In this study, the context was the transfer of learning to improve the pain management competencies of nurses that were addressed.

According to UN-Habitat (2017:5), an action plan is an output-oriented actor-specific plan for achieving the objectives of an issue-specific strategy. It specifies details of inputs and actions by various implementers and or stakeholders, with concrete work programmes, time schedules, resources, key measurables and a timeframe of inputs and outputs, negotiated and agreed upon by the key implementers or stakeholders.

In this context, the goal would be to develop an action plan which would be a helpful tool or method to enhance the transfer of learning of pain management competencies

of nurses. This action plan aimed to achieve positive transfer of learning outcomes that would help nurses function effectively in applying the experience of knowledge and skills gained during pain management training into practice.

This action plan was based on the outcomes of the findings from Phases 1, 2, and 3, and therefore, it would comprehensively provide instructional support and structure to assist and monitor change and progress. It includes a list of steps to be taken by clinical facilitators and nurses to achieve a specific target or goal (pain management skills), identifying the resources required as well as the timescale needed to enhance transfer of learning of pain management competencies as is suggested by Rumble (2019:17) as well as Phillips and Phillips (2016:197).

Various types of action plans could be utilised.

5.2.1 Types of action plans

The literature indicates that there are three sequential categories of types of plans that organisations may use, which are closely linked and have various types of goals, namely strategic plans, tactical plans, and operational plans (Adenov 2021:152; Haux, Winter, Ammenwerth & Brigl 2013:179). To achieve the objective of this study, a mixed type of action plan was developed, as it will be performed by all key stakeholders in nursing, who will be identified to execute the planned activities.

- *A strategic plan* entails the reasons why things need to happen as considered by the management to maintain the vision and mission of the organisation and covers the setting of overall, long-range goals for an extended period of between five and fifteen years (Gliva-McConvey et al. 2020:172; Griffin 2016:179; Lincke 2015:107; Haux et al. 2013:179). The action plan developed in this study intends to enhance the transfer of learning of pain management competencies of nurses by including the nurse managers on the facility level, thus top management, at the two selected hospitals.
- *A tactical plan* is a plan related to identifying specific, short-range objectives developed by middle-level managers in different units and sub-units to achieve and execute organisational strategic goals (Griffin 2016:179; Lincke 2015:107). This is

applicable in this developed action plan, which incorporates the relevant stakeholders, such as the nurse managers and supervisors in different nursing care areas responsible for educating and transferring knowledge about pain management competencies to the nurses.

- *An operational plan* is a plan about the "how" that things need to happen and is derived from a tactical plan developed by the lower-level managers stated in specific, quantitative terms related to normal departmental day-to-day activities, tasks, and actions to achieve operational goals and are of a shorter time frame and relatively narrow in scope (Gliva-McConvey et al. 2020:17; Griffin 2016:179). Each element includes the action, task, or change, the people who will carry out these changes, when the deadline is, what resources are needed, and who needs to know (Gliva-McConvey et al. 2020:172). A table format illustrates the developed draft action plan as it outlines the goals and expected outcomes. The table consists of five descriptive columns focusing on the action statements, the actions, the methods, the responsible person(s) for each action, and the time frames in which an action needs to be completed. In this illustrative way, all actions could be organised to achieve the objective of this study, namely to enhance the transfer of learning of pain management competencies of nurses.

The development of the action plan, according to the definitions in this context, was guided by the principles and steps for action plan development.

5.2.2 Principles of action plan development

UN-Habitat (2017:6) describes six principles underpinning and guiding the development of action plans. These principles characterise the preparation of an action plan that must be: (1) problem or priority-based, (2) realistic and based on achievable actions, (3) participatory, (4) inclusive, (5) reliant on local resources as well as (6) tangible and concrete. These principles were considered as described below.

5.2.2.1 Problem or priority-based

Establishing what the real problem is, thus the problem statement, means that specific issues and their main causes must be briefly described and addressed as priorities in

an action plan (Haigney 2021:54; O'Cathain, Croot, Duncan, Rousseau, Sworn, Turner, Yardley & Hoddinott 2019:3; UN-Habitat 2017:6). In this study, the general problem statement was described (see Section 1.2). The specific challenges or aspects relevant to the transfer of identified learning problems were targeted and prioritised, as was attained from the findings of Phases 1, 2, and 3.

5.2.2.2 Realistic and based on achievable actions

The action statements in the draft action plan were the specific challenges or aspects which could deter transfer of learning that needed to be addressed with specific actions or activities to enhance the likelihood of transfer of learning of pain management competencies of nurses as was identified by the analysis of data from Phases 1, 2, and 3.

The specific actions or activities nominated for inclusion in the planned draft action plan were to be within the competencies and capabilities of the stakeholders involved (UN-Habitat 2017:6). To achieve the objectives of the study, a specific set of specific, measurable, attainable, realistic, and time-bound (SMART) goals were developed to specify the expected outcomes of the action plan to enhance the transfer of learning of pain management competencies of nurses as explained by various authors (Gliva-McConvey et al. 2020:172; O'Cathain et al. 2019:3 Covaerts, Kyndt, Vreye & Dochy 2017:543).

5.2.2.3 Participatory

Authors emphasize the active participation of all stakeholders involved in the development of action plans, as their full engagement as well as their claim of ownership of developed action plans (UN-habitat 2017:7; O'Cathain et al. 2019:3). A participatory approach ensures the development of realistic and achievable objectives that consider the capacities of the participants, determine a realistic timeframe, and instil a sense of ownership and commitment of all involved (Whicher, Harris, Beverley & Swiatek 2018:3247; UN-habitat 2017:7). In this study context the following stakeholders, relevant to the transfer of learning of pain management skills and competencies, actively participated. In Phases 1 and 2, the registered nurses from the participating hospitals

provided data, while in Phase 3, clinical facilitators of the same two hospitals participated and provided data. In Phase 4, the panellists consisting of nurses and clinical facilitators from all the participating hospitals are indicative of the active involvement of all stakeholders in developing and agreeing on the content of the action plan, ensuring taking ownership of the developed action plan.

5.2.2.4 Inclusive

Inclusive implies that the planned activities and actions included in the action plan must be viewed from diverse perspectives. In this study context, diverse perspectives refer to the transfer of learning, considering the characteristics, transfer-oriented educational design, and learning needs of all trainees (as nurses) and the work context (Fauth & González-Martinez 2021:11; UN-Habitat 2017:7; Donavan & Darcy 2011:123). Inclusivity in this context entails the utilisation of the questionnaires to gather first, second, and third-phase data and a thorough literature review. The findings of Phases 1, 2, and 3 and the literature reviews were used to develop the action plan. As a result, it was developed based on the dimensions that could enhance the transfer of learning. These factors include the characteristics of nurses, the design of pain management education programs, the climate of transfer of learning within hospital nursing care, and the working environments of nurses.

5.2.2.5 Reliant on local resources

Action plans should make the best possible use of the human, technical and financial resources that are locally relevant and available (O'Cathain et al. 2019:3; UN-Habitat 2017:7). In this context, the availability of resources and the existing training in the selected hospitals are vital to effective pain management. It is also crucial to align an action plan with the institution's master strategic plan (Gaddy 2014:6). By including stakeholders knowledgeable about designing pain management education programs, ensuring the transfer of a learning climate within the hospital nursing care, and ensuring that nurses' workplace environment create opportunities for them to practice the skills acquired during training of pain management due to their involvement in facilitating training opportunities in pain management.

The developed action plan aims to enhance the transfer of learning of pain management competencies of nurses in alignment with the five-year General Strategic Plan for the two hospitals published for the years 2019-2023 as cited from the Ministry of National Guard Health Affairs' Strategic Plan (2019:25). The general strategic plan of the two hospitals aimed to:

- Create an environment that promotes the highest quality patient care with the highest quality care within resources, as per the draft plan, to provide adequate resources for nurses to implement new learning in pain management that is transferable and usable in their work areas effectively.
- Promote clinical excellence in patient safety and satisfaction by aligning the learning content of the short course program in pain management to reflect all types of pain patients may experience.
- Ensure a competent workforce by developing a diverse and inclusive workforce through motivation, innovation, and skill improvement while drafting an action plan to improve nurses' knowledge and competencies in managing pain and developing a pain management short course program incorporating the different learning styles of nurses and the learning content that covers all types of pain experienced by patients.
- Create an interactive environment that attracts nurses by encouraging the pursuit of national and international competencies with highly competitive benefits, in alignment with this draft action plan that promotes a supportive learning environment where nurses of all categories value pain management education designed and delivered by nurses.
- Achieve financial sustainability. This aligns with this draft action plan's objective of providing pain management resources affordably to enhance the transfer of learning (Ministry of National Guard Health Affairs' Strategic Plan 2019:25) (see Tables 5.2 and 5.3).

5.2.2.6 Tangible and concrete

A tangible and concrete action plan that includes clearly defined specific expected outcomes and quantifiable measures by which the progress would be easily evaluated

was developed as suggested by UN-Habitat (2017:7) and Whicher et al. (2017:3237). Based on the developed action plan, specific, measurable goals and objectives were identified to anticipate the results of the actions planned. Furthermore, the draft action plan aims to enhance nursing competency transfer in pain management by achieving the actual expected outcomes (see Table 5.3.).

5.2.3 Steps in developing an action plan

The steps adopted from McGurk and Mueser (2021:115) were followed to develop an action plan to enhance the transfer of learning of pain management competencies of nurses. The steps followed were: (1) the description of the problem; (2) the identification of the best possible solutions to the problem; (3) the identification of the people responsible to address each action statement contained in the plan; (4) determination of the specific resources needed; (5) the implementation of the action plan (validation) and (6) a follow-up meeting or evaluation of the action plan (not done in this study context).

5.2.3.1 Step 1: Description of the problem

The first step in developing the first draft action plan was to describe and define the problem identified as specifically as possible, as explained by McGurk and Mueser (2021:115) and Brown-Chidsey and Bickford (2015:77). The problem was described (see Section 1.2), and the data to describe the problem was obtained from (i) nurses and clinical facilitators in Phase 1, namely the identification of the resources available to conduct pain assessments. (ii) In Phase 2, data from nurses who identified the characteristics and learning styles that enhance pain management competency transfer were obtained. (iii) In Phase 3, data from the clinical facilitators revealed the teaching approaches employed during nurses' pain management education, the learning content regarding pain assessment and management, and the transfer of a learning climate within the hospitals' nursing care areas. The data analysed from Phases 1, 2, and 3 addressed the specific challenges or problems relevant to the transfer of learning that had to be addressed in the action plan to enhance the transfer of learning skills to improve pain management as suggested by Pilcher (2016:185), Babu and Gayathri (2018:102) as well as by Brown-Chidsey and Bickford (2015:73), The specific

challenges or problems relevant to the transfer of learning were categorised under the dimensions of the Systemic Model of Transfer of learning applicable to this study (see Table 5.2).

5.2.3.2 Step 2: Identification of the best possible solutions to the problem

The second step was to identify the best possible solutions to the identified problems in developing a **complete**, **clear, and specific** action plan as recommended by McGurk and Mueser (2021:115), Kirwan (2016: 59), as well as Brown-Chidsey and Bickford (2015:75). The specific problems to be mitigated in the draft action plan, were identified from the analysed data from Phases 1, 2, and 3. The best possible solutions to be implemented were written as action statements relevant to the transfer of learning. The e-Delphi method (a "collective agreement and consensus method") discussed in Chapter 6 was used to validate the draft action plan as suggested by Keeney, Hasson and Mckenna (2011:43). To achieve the ultimate expected outcomes as the best solution to the identified problems, all the action statements were aligned with the detailed specific actions, set of SMART goals, methods to be used, and all stakeholders to participate as is recommended by Covaerts et al. (2017:543), also by Ford, Baldwin and Prasad (2018:202) (see Table 5.2 and 5.3).

5.2.3.3 Step 3: Identification of the people responsible to implement the plan

For the third step, McGurk and Mueser (2021:115) and Brown-Chidsey and Bickford (2015:79) suggest that the stakeholders responsible for implementing the action plan must be identified. Hence, the draft action plan identified the clear responsibilities of responsible persons such as nurse managers, nurse supervisors, clinical facilitators, nurse educators, pain nurses, and clinical nurse specialists as relevant to implement the action plan to enhance transfer of learning of pain management of nurses' competencies as is indicated in Table 5.3.

5.2.3.4 Step 4: Determine the specific resources needed

According to McGurk and Mueser (2021:116), the specific resources needed to develop an action plan must be determined to accomplish its implementation. A panel of relevant stakeholders, two clinical facilitators (one from each hospital), and ten nurses

(five from each nursing care division in the two hospitals) participated in the validation process. The final action plan was based on consensus, including consensus regarding the resources required (people, finances, and pain tools) and the individuals or groups who needed to take responsibility for each action in the action plan.

5.2.3.5 Step 5: Implementation of the action plan (In the study context, the validation of the action plan)

The fifth step is the implementation of the final action plan drafted, as indicated by Brown-Chidsey and Bickford (2015:78) as well as DiPaola and Hoy (2013:100). In this study context, the action plan was not implemented since a longitudinal study would have been needed, not compatible with the time limitations of a PhD study. The panel members validated the proposed action plan (see Chapter 6, Section 6.4) and took three e-Delphi rounds to reach a consensus of 75% among themselves (see Chapter 6, Section 6.6). The final action plan to enhance the transfer of learning of pain management competencies of nurses is presented in Chapter 6, Section 6.7.

5.2.3.6 Step 6: Follow up on the action plan

Step 6 entails follow-up meetings to evaluate whether the action plan was effective, modifying it as needed (McGurk and Mueser 2021:116). This step would require a follow-up study, as Brown-Chidsey & Bickford (2015:80) advise.

5.2.4 Application of the Systemic Model of Transfer of Learning

The Systemic Model of Transfer of Learning adopted as the framework of this study was applied to guide the development of an action plan to enhance the transfer of learning of nurses' pain management competencies. For this purpose, it was used to enhance the nurses' transfer of learning of pain management competencies as a response to identified problems possibly affecting the transfer of learning.

Illustrated in Figure 5.1 (discussed in Chapter 2 Section 2.4), the Systemic Model of Transfer of Learning designates four dimensions of factors that influence the transfer of learning in the workplace. These dimensions are (1) trainee characteristics, (2) training design, (3) training transfer climate and (4) workplace environment characteristics

(Donovan and Darcy 2011:125; Ma et al. 2018:2; Botma & MacKenzie 2016;105; Schneider 2014:68). Higher nursing education institutions have also adapted and uti-lised this model to achieve their principal goal, to promote the integration of theory and practice (Donovan & Darcy 2011:125; Botma et al. 2015:499; Botma & MacKenzie 2016:105).
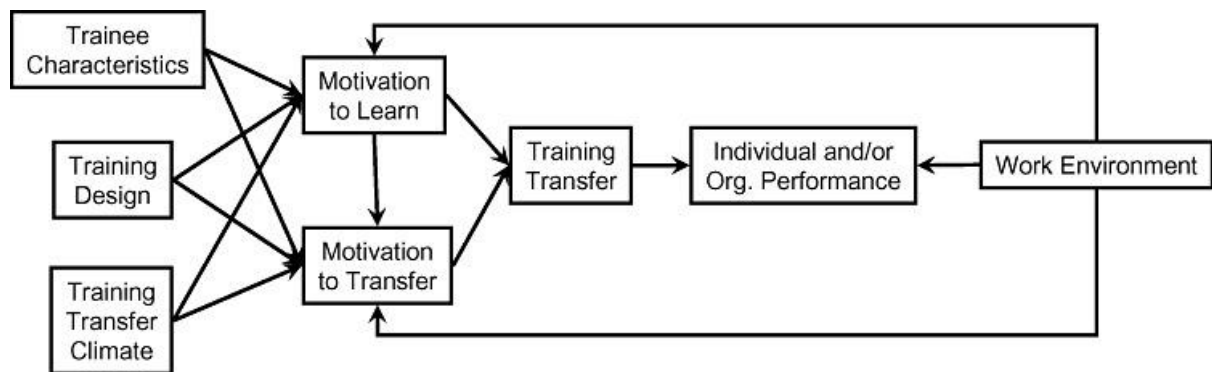
Figure 5.1 Systemic Model of Transfer of Learning

Source: Adopted from Donovan and Darcy (2011), cited in Donovan and Darcy (2011:125).

The action plan development process was aligned with the four dimensions of factors of the Systemic Model of Transfer of Learning. What was considered in this study were (1) nurses' characteristics, (2) pain management education program design, (3) trans-fer of learning climate, and 4) nurses' working environment (Donovan and Darcy 2011:125; Ma et al. 2018:2; Botma & MacKenzie 2016;105; Schneider 2014:68; Boon-pektrakul 2014:10).
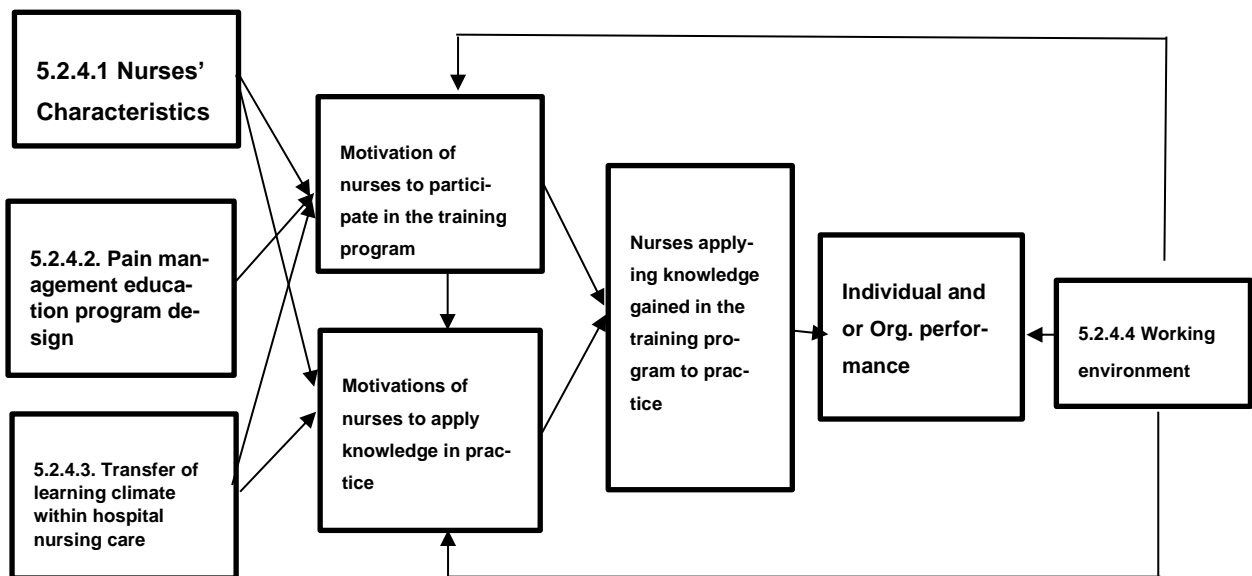
Figure 5.2   Application of Systemic Model of Transfer of Learning as aligned from the citation by Donovan and Darcy (2011:125)

5.2.4.1 Nurses' characteristics

Nurses' characteristics were presented in Chapter 4 based on an analysis of data collected during Phase 2. Discussions include demographics, application of what has been learned previously, learner types, motivation to learn, and motivation to apply knowledge. All the mentioned characteristics, identified as affecting the transfer of learning of pain management competencies, were considered when drafting the action plan's first draft. This draft action plan aimed to enhance nurses' abilities to learn, analyze, and apply what has been learned at work, as suggested by Boonpektrakul (2014:10).

5.2.4.2 Pain management education program design

Findings from Phase 3, the perspectives of clinical facilitators, were aligned with the Systemic Model of Transfer of Learning training design recommended by Donovan and Darcy (2011:130), Herr et al. (2015:319), and gil, Mataveli and Garcia-Alcaraz (2021:2). Figure 5.2 illustrates the incorporation of the pain management education program design to the systemic model. Therefore, the action plan in this study

considered the design of pain management education programs to enhance the transfer of pain management competencies, including learning styles, teaching approaches, and program content. Cartaxo and Simes (2014:0460) and Schneider (2014:86) recommend that a draft action plan include learning that corresponds to a nursing situation and nurse needs in real-time.

5.2.4.3 Transfer of learning climate within hospital nursing care

As defined by the Systemic Model of Transfer of Learning, the transfer of learning within the hospital nursing care climate is determined by the relationship between the nurses' motivation to transfer learning in their working environment (Donavan & Darcy 2011:123). The clinical facilitators identified a transfer of learning climate across various wards in Phase 3. Furthermore, this draft action plan is aligned with the systemic model, which is based on clinical facilitators' perspectives across various wards, as indicated in this study's findings regarding the types of learning climate that contribute to the transfer of pain management skills (suggested by Boonpektrakul 2014:11). Data analysed from Phase 3 were used to develop an action plan aimed at ensuring a supportive transfer of learning climate for pain management training.

5.2.4.4 Working environment

It is important to consider workplace environment factors when formulating part of the action plan that motions trainees to have opportunities to practice new skills acquired during training, as suggested by Donovan and Darcy (2011:123), Suleiman et al. (2016:23), and Yusin et al. (2014:184). The draft action plan was aligned with the model by ensuring that nurses' work environments were supportive and conducive to conducting pain assessments, as highlighted in Phases 1 and 3 by the nurse and clinical facilitator responders. The analysed data from Phases 1, 2, and 3, as summarized in Table 5.2, were integrated with the available literature to identify possible action statements for the action plan to address the mentioned challenges.

5.2.5   Development of the draft action plan

The action plan was developed after reviewing the literature on how an action plan should be developed, distinguishing the types of action plans, the principles to be

applied, and steps to be followed from the analysed data from Phases 1, 2, and 3, integration of data from Phases 1, 2, and 3, and using the System Model of Transfer of learning to guide the process of goal attainment while developing the draft action plan. The actual draft action plan was developed based on the identified needs and recommendations obtained during the integration of findings from Phases 1, 2, and 3 (see Table 5.2). Results from Table 5.2 were used to inform the preliminary draft action plan (see Table 5.3).

Table 5.2: Integration of Phases 1, 2, 3, and literature support

RESEARCH FINDINGS: PHASE 1,2 and 3: Demography	Literature support	Action state-ment number	Action Statement
Only 23,6% of nurses (see Figure 4.3) and 10,6% of nurse facilitators were diploma-prepared (see Figure 4.11).	Nurses with Bachelor's degrees prove to have significantly higher pain management knowledge and attitude levels than those at the Diploma and Certificate level (Kahsay & Pitkäjärvi 2019:1; Alotaibi, Higgins & Chan 2019:123).	1	Motivate nurses to further their studies.
RESEARCH FINDINGS: PHASE 1 & 3: Available pain assessment tools	Literature Support		Action statement
The QUEST pain assessment guide tool utilised in paediatric wards was reported to be available by only 9,4% of nurses (see Table 4.5) and by 25,5% of nurse facilitator respondents (see Table 4.17).	To identify pain in children, the QUEST pain assessment tool is recommended by Nori, Benjamin, Alshalji and Izakovic (2019:148) to utilise in pediatric wards.	2	Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area.
The COLDSPA assessment guide tool was reported to be available by 41,8% of nurses (see Table 4.5) and by 29,8% of nurse facilitators (see Table 4.17).	COLDSPA is an available and useful mnemonic tool to interview patients about pain (Shorey, Ang, Yap, Ng, Lau & Chui 2019:5).		
41,9% of nurses (see Table 4.5), and 34,0% of nurse facilitators reported the OPQRSTUV assessment guide tool available (see Table 4.17).	The OPQRSTUV instrument is relevant to collecting pain management information systematically for postoperative pain assessment (Permana and Widagdo 2019:13).		

Only 69,1% of nurses indicated the PQRST pain assessment guide tool available (see Table 4.5).	For pain self-reporting, nurses can use mnemonics of PQRST to help them remember key aspects of pain assessment (Fink & Gallagher 2019:231).		
Only 17,1% of nurses (see Table 4.6) and 23,4% of nurse facilitators confirmed the BPI available (Table 4.18).	BPI is highly reliable for use with dementia patients, yet nurses do not adequately use it in clinical settings (Guetti, Paesani, Colavincenzo, Ciccozzi & Angeletti 2018:3; Liao, Parajuli, Jao, Kitko & Berish 2021:11).		
35,6% of nurses (see Table 4.6) and 23,4% of nurse facilitators (see Table 4.18) reported the VDS available.	VDS tool is not as regularly used as other pain scales (Resnick, Boltz, Galik, Holmes, Vigne, Fix & Shijun 2019:194).		
23,4% of nurse facilitators indicated the VAS available (see Table 4.18).	Nurses know that the VAS could be used for pain assessment (Pölkki, Korhonen, and Laukkala 2018:729).		
21,0% of nurses (see Table 4.7) and 23,4% of nurse facilitators (see Table 4.19) reported the NPASS available.	The NPASS is a commonly used scale to rate pain in neonatal patients (Carcia-Rodrigues, Bujan-Bravo, Seijo-Bestlleiro & Gozalez-Martin 2021:5929).		
21,8% of nurses (see Table 4.7) and 25,5% of nurse facilitators (see Table 4.19) confirmed the CPOT available.	CPOT is feasible and useful in critical care (Maatouk, Tassi, Fawaz, and Itani 2019:6).		
24,7% of nurses (see Table 4.7) and 27,7% of nurse facilitators (see Table 4.19) reported that NIPS was available.	NIPS is a tool that is available and commonly used by nurses (Obiedat and Al-Maaitah 2020:4).		
27,8% of nurses (see Table 4.7) and 36,3% of nurse facilitators (see Table 4.19) confirmed the BPS available.	The BPS is used in the intensive care unit for patients who are unable to self-report their pain (Hermes, Acevedo-Nuevo, Berry, Kjellgren, Negro & Massarotto 2018: 55).		

30,1% of nurses (see Table 4.7) and 23,4% of nurse facilitators (see Table 4.19) confirmed the COMFORT B scales available.	The COMFORT-B pain scale is used for preverbal children younger than three years of age, according to Andersen, Nakstad, Jilli, Cambell-Yeo and Anderzen-Carlsson (2019:341).		
65,2% of nurses (see Table 4.7) and 76,6% of nurse facilitators (see Table 4.19) confirmed the CRIES pain scale available.	The CRIES scale can be used to assess acute and postoperative pain in neonates (Popowicz, Kwiecie-Jagu, Olszewska & Mdrzycka-Dbrowska 2020:1895).		
The ABBEY pain tool was reported available by 17.4% of nurses (see Table 4.11) and 12,8% of nurse facilitators (see Table 4.20).	ABBEY pain tools are used to assess elderly patients with dementia or cognitive impairment in palliative situations, whether all scale items apply or not (Tegenborg, Fransson & Martinson 2020:9).		
The PAINAD scale was reported to be available by 19,5% of nurses (see Table 4.11) and 12,8% of nurse facilitators (see Table 4.20).	PAINAD scale is used to assess pain in patients with dementia and cognitive impairment (Natavio, McQuillen, Dietrich, Wells, Rhoten, Vallerand & Monroe 2020:507).		
20,8% of nurses (see Table 4.11) and 14,9% of nurse facilitators reported the NOPPAIN tool available (see Table 4.20).	The NOPPAIN is a commonly used observation tool available for assessing pain in patients with dementia (Rababa 2018:64).		
26,5% of nurses (see Table 4.11) and 29,8% of nurse facilitators (see Table 4.20) indicated the CNPI scale available.	CNPI is used to assess pain in dementia patients (Smith & Harvey 2022:7).		

76,6% of nurses reported that nurse supervisors with pain management training were available (see Table 4.9).	Nurse supervisors trained in pain management are regarded as a resource for introducing nurse-based pain management programs (Germossa, Hellos & Sjetne 2019:3).		
58,7% of nurses (see Table 4.10) and 40,6% of nurse facilitators (see Table 4.22) confirmed the availability of patient pain management websites.	Websites, including the British Pain Society, European Pain Society, and Irish Pain Society, provide information on pain management (Schofield 2018: i7).		
63,4% of the nurses (see Table 4.10) and 36,2% of nurse facilitators (see Table 4.22) confirmed the availability of patient pain management hotlines.	Nursing teams utilise pain management hotlines to support patients and families in managing their pain (Chan, Lin, George & Liu 2020:672).		
Pain management support groups were reported available by 76,4% of nurses (see Table 4.10) and 59,6% of nurse facilitators (see Table 4.22).	Support groups that assist other patients with persistent pain, including online adolescent support groups, are important in pain management (Tolley, Michel, Williams, and Renschler 2020:2).		
70.2% of nurse facilitators (see Table 4.22) reported the availability of "peer" support groups.	Adolescent support groups can be useful in the treatment of chronic pain in patients with pain or peers (Tolley et al. 2020:2).		
44,4% of the nurses (see Table 4.11) and 29,8% of the nurse facilitator respondents (see Table 4.23) confirmed the e-newsletters from the selected publications and electronic resources available.	Patients with pain want to receive information using e-news-letters (Goldstein, Majdi, Bocher-Planka, Watts, and Khan 2018:299).		

50,4% of nurses (see Table 4.11) and 38,3% of nurse facilitators (see Table 4.23) reported the videos on pain management available.	A video on pain management is a useful resource for improving health professionals' pain management competency and evidence-based practices (Hurley-Wallace, Wood, Franck, Howard & Liossi 2019:43).		
51,4% of nurses (see Table 4.11) and 40,4% of nurse facilitators (see Table 4.23) reported the fact sheets available.	Fact sheets to advise on pain management in children with intellectual disabilities are useful (Genik, McMurtry, Breau, Lewis & Freedman-Kalchman 2018:434).		
Printed reference books aimed at pain management were reported available by 57% of nurse facilitators (see Table 4.11).	Printed reference books are used as scientific resources for pain management (Smeland, Twycross, Lundeberg &Rutten 2018:549).		
A pain toolkit was reported available by 70,2% of nurse facilitators (see Table 4.23).	QuantiPain is effective in clinical settings (Izumi, Hayashi, Saito, Petersen, Arendt-Nielsen & Ikeuchi 2022:8).		
74,8% of nurses (see Table 4.11) and 72,3% of nurse facilitators (see Table 4.23) reported the clinical updates available.	Evidence-based sources aimed at supporting patients in pain management assist in navigating pain management nursing practice in global settings (Rosa 2018:27).		
Organizations that specialise in pain management were reported available by 78.4% of nurses (see Table 4.12) and by 78.7% of nurse facilitators (see Table 4.24).	The World Health Organization, American Pain Society, National Cancer Network, and other organisations that specialise in pain management provide pain management guidelines (Germossa, Sjetne & Helles 2018:3).		

RESEARCH FINDINGS: PHASE 2: Application of what was learned before.	Literature support		Action statement
Nurses applied pain management training in their clinical practice and were able to: Promptly assess patients' pain (31,51%, see Figure 4.4).	Nurses trained in pain management can effectively assess pain by applying what they have learned (Chu, Wang, Lin, Lee, Lin, Chieh, Sung & Lin 2019:6; Malones, Kallmyr, Hage & Eines 2021:202).	3	Develop a practice-oriented, content-specific short pain management training program.
Accurately assess pain (38.8%, see Figure 4.4).	Nurses trained in pain management are able to assess pain accurately (Chu et al. 2019:6).		
Select appropriate pain intervention strategies for individual patient's pain levels (45,05%, see Figure 4.4).	Nurses who had received pain education were able to implement pain treatment and medication measures effectively (Chu et al. 2019:6).		
Understand and apply the content information taught (57,03%, see Figure 4.4).	As a result of pain management training, nurses displayed the ability to comprehend and apply the program's contents (Germossa et al. 2018:4).		
Train new colleagues in pain management (57,81%, see Figure 4.4).	Nurses who receive pain management training can train other nurses (Osongo 2020:285).		

Recall information about pain management from previous experience (60,16%, see Figure 4.4).	Nurses trained in pain management training have the ability to recall the information (Grenning, Nøst, Rannestad & Bratts 2018:8).		
Attend pain management learning/training sessions (75,00%, see Figure 4.4).	Nurses with previous training in pain management have considerable knowledge applicable to clinical settings (Kahsay & Pitkäjärvi 2019:10).		
Reassess pain after interventions (75,52%, see Figure 4.4).	Pain management training enhances nurses' competencies (Bonkowski, Gagne, Cade & Bulla 2018).		
Concentrate well during pain management learning/training sessions (78,13%, see Figure 4.4).	Nurses can pay attention during pain management training sessions (Waszak, Mitchell, Ren & Fennimore 2018:343).		
Nurse facilitators included labour pain as part of the pain management training program learning content (74,5%, see Table 4.34).	Labor pain education improves pain alleviation (McCauley, Danna, Mrema & Van den Broek 2018:8).		
Nurses described the type of learners they were: Creative learners (53.25%, see Figure 4.5).	Nurses who are creative learners can apply new ideas in practical settings to overcome complex challenges (Yang, Zhou, Chung, Tang, Jiang & Wong 2018:43)	4	Develop a pain management short program that accommodates all learning types.

Enthusiastic thinking learners (56.25%, see Figure 4.5).	Learning environments that incorporate daily activities motivate nurses with a desire to learn (Habes, Jepma, Parlevliet, Bakker & Buurman 2020:5).		
Self-confident thinkers (56.25%, see Figure 4.5).	Critical thinking assists self-confident nurses in applying their knowledge (Liu, Yu, Wang, Zhu & Yang 2021:4).		
Organised thinking learners (58.59%, see Figure 4.5).	Organized thinkers are able to apply information in practice (Forneris & Peden-McAlpine 2021:4).		
Truth-seeking learners (62.00%, see Figure 4.5).	Nurses who seek the truth have critical thinking and clinical competence (Tajvidi & Hanjani 2019:5).		
Inquisitive thinkers (66.40%, see Figure 4.5).	Inquisitiveness boosts the probability that nurses will be able to apply their knowledge to challenging clinical situations (Yang et al. 2018:43).		
Diligent, inquisitive learners (67.19%, see Figure 4.5).	Inquisitive nurses have a wide range of experience, enthusiasm, curiosity, and resilience for gaining knowledge and developing skills that they then apply to become experts (Siklander & Impio 2019:1247).		
Self-directed learners (77,60%, see Figure 4.5).	Self-directed nurses are able to remain current and apply their learning (Curran, Gustafson, Simmons, Lannon, Wang & Garmsiri 2019:85).		

Nurses described their learning styles and indicated that they learn if: They could question the information they have obtained (13,80% see Figure 4.8).	Nurses with over 26 years of experience were shown to prefer verbal learning strategies such as questioning or explaining knowledge and were more likely to transfer their learning (Mangold, Kunze, Quinonez, Taylor & Tenison 2018:212).		
They could record the lecture (14.58%, see Figure 4.8).	As a result of using video, audio, and animation in the intervention group, nurses were able to transfer more information (Farshbaf-Khalili, Jasemi & Seyyedzavvar 2021:4).		
They could learn from the internet (16, 93%, see Figure 4.8).	Multimedia-assisted training for nurses enhanced learning transfer by aligning with their preferred learning style (Chu et al. 2019:7).		
They could take control of their own learning (20,05%, see Figure 4.8).	Nurses who preferred self-directed learning as their preferred learning method enhanced their learning transfer (Alharbi 2018:233).		
They could generate creative ideas in a group (21,88%, see Figure 4.8).	Learners participating in a group setting are stimulated to generate creative ideas (Stefan 2021:38).		
They could be in a silent environment (23,18%, see Figure 4.8).	Learners participating in quiet group settings have a higher concentration on learning (Yang, Zhao, Tian & Xing 2021:407),		
They could connect the information they already know (35,16%, see Figure 4.8).	Student nurses' learning improves when new information is linked to previous knowledge (Walter 2018:26).		
They were able to write down the information (37,76%, see Figure 4.8).	Writing down text, although a learning style, is the least preferred by degree nurses (Zhu, Zeng, Zhang, Zhang, Wan, Guo & Zhang 2018:164).		

They could personally take part in the activity to practice the skill (42,45%, see Figure 4.8).	Nurses who attend pain management training that focuses on practical application enhance the transfer of learning (Minaya-Freire, Ramon-Aribau, Pou-Pujol, Fajula-Bonet & Subirana-Cascuberta 2020:499).		
They could participate in the group discussion (51,04%, see Figure 4.8).	Participating in group discussions is among the factors that enhance learning transfer (Brion & Cordeiro (2018:6).		
They could solve different real-life pain management problems (51,04%, see Figure 4.8).	Transfer of learning is enhanced when nurses apply their pain management abilities in actual clinical settings (Sardo, Galletta, Coni, Gonzalez, Piras, Pia, Evangelista, Musu & Finco 2020:2356).		
They could listen to the information such as during a lecture (77,08%, see Figure 4.8).	Nurses have indicated that unimodal methods of learning, such as lectures, cassettes, and stories, are their preferred learning styles (Zhu et al. 2018:165).		
RESEARCH FINDINGS: PHASE 3: Teaching approaches employed	Literature support		Action statement
Nurses employed the following teaching approaches: Writing reflective journals for sharing their pain management experiences (36,2%, see Table 4.26).	Pain management competencies can be applied through writing reflection journals (Carvalho, Pereira, Jácomo, Magalhães, Araǔjo, Hernàndez-Marrero, Gomes & Schatman 2018:972).	5	Incorporate different teaching approaches to accommodate diverse learners and facilitators.

Nursing grand rounds to provide pain management training to nurses (74,5% see Table 4.26).	Conducting nursing grand rounds enhances the transfer of learning (Salinas, Johnson, Conrardy, Adams & Brown 2019:41).		
Focus groups are a teaching strategy to help them manage pain (76,6%, see Table 4.26).	Focus group discussions can enhance the transfer of learning (Chicca & Shellenbarger 2018:183).		
Role-playing activities to teach nurses pain management (78%, see Table 4.26).	Role play can enhance the transfer of learning (Pilnick, Trusson, Beeke, O'Brien, Goldberg & Harwood 2018:3).		
RESEARCH FINDINGS: PHASE 2: Motivations to participate in the training program.	Literature support		Action statement
Nurses were motivated to participate in the training program: Due to their goals and desire to know about pain management (63,28%, see Figure 4.6).	Nurses' goals motivate them to feel competent and use their new skills in the workplace (Ahlstedt, Lindvall, Holmström & Athlin 2019:36).	1	Develop strategies to motivate nurses to participate in the short training program.

If they know their learning goals (65,10%, see Figure 4.6).	The knowledge of the learning goals and learning outcomes motivates students and nurses to learn and apply what they have learned before (Guswara & Purwanto 2020:429).		
Because of the ability to take the initiative without assistance (71,86%, see Figure 4.6).	Individuals who take the initiative without assistance are self-directed learners motivated to learn and meet their objectives to apply what they have learned (Zhoc, Chung & King 2018:997).		
Nurse facilitators indicated that newly hired registered nurses received pain management orientation from non-trained preceptors (70,2%, see Table 4.40).	Preceptor-training programs help preceptors communicate knowledge to nurses (Hugo 2018:131).		
RESEARCH FINDINGS: PHASE 2: Motivations to apply knowledge in practice.	Literature support		Action statement
Because they were motivated to apply what they had learned in practice (58.33%, see Figure 4.7).	Student nurses are motivated to obtain knowledge and skills in pain management in order to become competent nursing professionals in the future (Damsgaard, Solgaard, Johannessen, Wennevold, Kvarstein, Pettersen & Garcia 2018:523).	7	Motivate nurses to apply the knowledge gained in the training program into practice.

5.3 THE FIRST DRAFT ACTION PLAN

The first draft of the action plan is displayed in Table 5.3. The draft action plan includes the following primary categories: action statements, specific actions, methods suggested to assist in achieving the action aim and expected outcome, the responsible person(s), and suggested time frames. The embedded validation assessment instrument was also tested for validity and reliability, as discussed in detail in Chapter 6 subsection 6.2.4

Table 5.3: First Draft action plan with embedded validation tool.

Instructions to Panellists
Please indicate your answer by selecting either "Agree" or "Disagree" next to the options provided to indicate your agreement or disagreement with the inclusion of the (1) action statements as well as the (2) methods suggested.
Inclusion of each action statement in the action plan.
The methods suggested to assist in achieving the action goal and expected outcome.
Please choose from the list provided the best possible responsible person/ persons that you recommend must take responsibility for every method.
Please choose from the list provided the best possible timeframe within which every method must be completed once the action plan is accepted.
Please provide detailed suggestions and comments in all the suggestion/comment boxes for improvement of any of the items/aspects in the draft action plan.

Action statement 1: Motivate nurses to further their studies	
Agree	Disagree

Method 1.1 Develop a policy to motivate nurses to improve their nursing qualifications.	
Agree	Disagree

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If you agree that a policy should be developed, please tick all that should be included in the policy to motivate the nurses.

Paid Full-time study leave for 1 year	
20 hours paid study leave and 20 hours full-time work for 1 year	
Free accommodation for the period of study leave	
A monetary Incentive after completion of a new formal qualification (degree or diploma)	
One day off for attending a one-day pain management program	
A monetary incentive after completion of a pain management program	
A certificate issued as an acknowledgement of nurses pursuing distance learning	
A monetary incentive after completion of distance learning programs	

Responsible person(s): Please select (check the box(es)) next to the best person(s) to be responsible for the development of a policy that motivates further studies.

	Five Members of the Central Region Nursing Governance and Accountability Board appointed by the Chief Executive Director for Central Region, Riyadh	
	Ad hoc committee appointed by the heads of the Human Resource Department Central Region, Riyadh	
	Associate Executive Directors of Nursing for King Abdulaziz Medical City (KAMC) and King Abdullah Specialist Children's Hospital (KASCH)	
	Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH	
	Clinical Directors of Nursing Operations for KAMC and KASCH	
	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	

Time frame: Select the most appropriate timeframe after approval of the action plan, within which time the policy should be developed and finalised.

1	1–3 months	
2	4–6 months	
3	7–9 months	

Method 1.2 Present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board

Agree	Disagree

Responsible person(s): Please select (check the box(es)) next to the best person(s) to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications.

	Five Members of the Central Region Nursing Governance and Accountability Board appointed by the Chief Executive Director in Central Region, Riyadh	
	Ad hoc committee appointed by the heads of the Human Resource Department Central Region, Riyadh	
	Associate Executive Directors of Nursing for KAMC and KASCH	
	Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH	

Time frame: Select the most appropriate timeframe within which time the policy should be presented and the implementation negotiated with the Ministry of National Guard Health Affairs (MNGHA)

1	3 months	
2	6 months	
3	9 months	

Method 1.3 Include the policy in all hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA)

Agree	Disagree

Responsible person(s): Please select (check the box(es)) next to the best person(s) to be responsible for the inclusion of the policy in the hospitals' policies to motivate nurses to improve their nursing qualifications.

	Associate Executive Directors of Nursing for KAMC and KASCH	
	Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	
	Nurse Managers in all KAMC and KASCH nursing care areas	

Time frame: Select the most appropriate timeframe within which time the policy should be included in the hospital policies after approval by the Ministry of National Guard Health Affairs

1	1 month	
2	Six weeks	
3	2 months	
4	3 months	

Suggestions/comments

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area

Agree	Disagree

Method 2.1 Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate.

tool in all nursing care areas.

Agree	Disagree

If you agree that appropriate pain assessment tools should be included, please tick all that should be accessible on the electronic patient record system.

	QUEST	
	COLDSPA	
	OPQSTUV	
	PQRST	
	BPI	
	VDS	
	VAS	
	NPASS	

	CPOT	
	BPS	
	COMFORT B	
	CRIES	
	ABBEY	
	PAINAD	
	NOPPAIN	
	CNPI	

Responsible person(s): Please select (check the box(es)) next to the best person(s) to be responsible to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area.

	Two computer engineers appointed by the HR manager, each assigned for KAMC and KASCH	
	Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	
	Clinical Director of Nursing Operations appointed by Associate Executive Directors in every facility for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	

Time frame: Select the most appropriate timeframe within which time the pain assessment tools should be included in the electronic patient record system.

1	1–3 months	
2	4–6 months	
3	7–9 months	

Method 2.2 Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas.	
Agree	Disagree

Responsible person(s): Please select (check the box(es)) the best person(s) responsible to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas.

	Clinical Directors of Nursing Operations for KAMC and KASCH	
	Nurse Managers in all KAMC and KASCH nursing care areas	
	Clinical facilitators in all KAMC and KASCH nursing care areas	
	Charge nurses in all KAMC and KASCH nursing care areas	

Time frame: Select the most appropriate timeframe within which time the nurse supervisors should be involved to provide pain management training.

supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas.

1	Every shift when the need arises	
2	Every patient round when the need arises	

Method 2.3 Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management	
Agree	Disagree

2.3.1 If you agree that hospitals' internet-based resources should be accessible to provide support to patients and family members, please tick all that should be available.

1	Patient pain management websites	
2	Patient pain management hotlines	
3	Pain management support groups	
4	Peer support groups	

Responsible person(s): Please select (check the box(es)) the best person(s) responsible to ensure internet-based resources should be accessible to patients and family members to provide support about pain management.

	Chief Executive Director for KAMC and KASCH	
	Two health information technologists appointed by the HR manager each assigned for KAMC and KASCH	
	Two communication and information administrators appointed by the HR manager for KAMC and KASCH	
	Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	
	Associate Executive Directors of Nursing for KAMC and KASCH	
	Clinical Directors of Nursing Operations for KAMC and KASCH	
	Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and KASCH	
	Nurse Managers in all KAMC and KASCH nursing care areas	
	Charge nurses in all KAMC and KASCH nursing care areas	
	Registered nurses in all KAMC and KASCH nursing care areas	

Time frame: Select the most appropriate timeframe within which time the hospitals' internet-based resources should be accessible to provide support to patients and family members.

| 1 | Every day at a convenient time | |
| 2 | 24-hour access 7 days a week | |

Method 2.4 Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas.

Agree	Disagree

2.4.1 If you agree that hospitals' internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas, please tick all that should be available.

1	E-newsletters	
2	Videos on pain management	
3	Facts sheets	
4	Pain toolkits	
5	Clinical updates	
6	The World Health Organization	
7	American Pain Society	
8	International Association for Study of Pain	

Responsible person(s): Please select (check the box(es)) the best person(s) responsible for ensuring internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas.

	Two computer engineers appointed by the HR manager each assigned for KAMC and KASCH	
	Two librarians appointed by the HR manager each assigned for KAMC and KASCH	
	Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	
	Nurse Managers in all KAMC and KASCH nursing care areas	
	Nurse supervisors appointed by Executive Associate Directors of Nursing for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Nursing Education Center for KAMC and KASCH	

Time frame: Select the most appropriate timeframe within which time the hospital's internet-based resources on organisations that specialise in pain management, pain management publications, and electronic materials should be accessible to the nursing team in all nursing care areas.

1	Every nursing shift	
2	24-hour access 7 days a week	

Suggestions/comments

Action statement 3: Develop a practice-oriented content content-specific short pain management training program

Agree	Disagree

Method 3.1 Include practice-oriented pain management training content for all nursing care areas in the pain management program.

Agree	Disagree

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If you agree that specific practice-oriented pain management content should be included in all nursing care areas, please tick all that should be included.

	Methods to promptly assess a patient's pain in all nursing areas	
	Assessment of patients' pain in all nursing care areas	
	The advantages and disadvantages of all pain management scales	
	Labour pain as a type of pain to be assessed	
	The selection of appropriate pain intervention strategies based on the pain levels assessed.	

Responsible person(s): Please select (check the box(es)) the best person(s) to be responsible for including specific practice-oriented pain management training content for all nursing care areas.

	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Clinical facilitator appointed by Clinical Directors of Nursing Operations in every nursing care area	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

Time frame: Select the appropriate timeframe within which time the specific practice-oriented pain management training content should be provided for inclusion in the program.

1	1 week before the due date of the training program	
2	1 month before the due date of the training program	
3	3 months before the due date of the training program	

Suggestions/comments

Action statement 4: Develop a pain management short program that accommodates all learning types	
Agree	Disagree

Method 4.1 Incorporate different learner types during learning/training sessions.	
Agree	Disagree

If you agree that different learner types of nurses should be included during pain management learning/training sessions, please tick all types that should be included during learning/training sessions.

	Creative Learners	
	Enthusiastic thinking learners	
	Self-confident thinkers	
	Organised thinking learners	
	Truth-seeking learners	
	Inquisitive thinkers	
	Diligent inquisitive learners	
	Self-directed learners	

	If you agree that the mentioned learning types must be incorporated, please indicate different learning styles that must be used to achieve this.	
	Creative Learners (generate creative ideas in a group)	
	Enthusiastic thinking learners (listen to the information actively, take part in the activity to practice the skill and participate in the group discussion)	
	Self-confident thinkers (take control of their learning)	
	Organised thinking learners (solve different real-life problems)	
	Truth-seeking learners (question the information obtained)	
	Inquisitive thinkers (inquire about the information obtained)	
	Diligent inquisitive learners (take the initiative in their learning)	
	Self-directed learners (take control of their learning)	

Responsible person(s): Please select (check the box(es)) the best person(s) to be responsible for ensuring that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions.

	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH	
	Clinical facilitators in all areas of nursing care for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

Time frame: Select the appropriate timeframe within which time the learning types must be shared for inclusion within the training program.

1	2 weeks before the due date for finalisation of the training program	
2	1 month before the due date of the training program	
3	3 months before the due date of the training program	

Suggestions/comments

Action statement 5: Incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management	
Agree	Disagree

Method 5.1 Ensure the inclusion of different teaching approaches in the offering of the training program.	
Agree	Disagree

5.1.1 If you agree that different teaching approaches should be utilised during pain management training that accommodates diverse learners and facilitators, please tick all that should be utilized during training.

1	Writing reflective journals	
2	Conducting grand rounds	
3	Engaging in focus groups	
4	Using role-playing activities	

Responsible person(s): Please select (check the box(es)) next to the best person(s) to be responsible to ensure that teaching approaches are included during pain management training.

	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH	
	Clinical facilitators in all areas of nursing care for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

	Time frame: Select the appropriate timeframe within which time different teaching approaches be part of the teaching program before implementation.	
1	2 weeks before the due date for finalisation of the training program	
2	1 month before the due date of the training program	
3	3 months before the due date of the training program	

Suggestions/comments

Action statement 6: Develop strategies to motivate nurses to participate in the short training program

Agree	Disagree

6.1 If you agree that strategies that motivate the nurses to participate in the pain management training program should be developed, please tick all strategies that you think will motivate nurses.

1	Conduct a situation analysis to assess the pain management needs of the nurses.	
2	Involve nurses in the development of the content of the training program.	
3	Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.	
4	Communicate the advantages of pain management competencies on (on what platform can this be done.	
5	Create a supportive learning environment in nursing care areas.	

Responsible person(s): Please select (check the box(es)) the best person(s) to be responsible for developing the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas.

	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH	
	Clinical facilitators in all areas of nursing care for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

Time frame: Select the appropriate timeframe within which the strategies that motivate nurses to participate in the short pain management training program related to their nursing care areas should be developed.

1	2 weeks before the due date for the finalisation of the training program	
2	1 month before the training program starts	

Suggestions/comments:

Action statement 7: Motivate nurses to apply the knowledge gained in the training program into practice

Agree	Disagree

	Method 7.1 If you agree that nurses should be motivated, kindly tick all you think that can be done to motivate them to apply their knowledge in practice.	
1	Provide nurses with a certificate to recognize their application of pain management knowledge in their respective nursing care areas.	
2	Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.	
3	Allow the nurses to take part in planning outcomes of a pain management training program.	
4	Support nurses' SMART goals and pain management learning.	
5	Support what drives individual nurses to apply what they have learned about pain management.	
6	Assign grades for applying pain management knowledge in practice based on annual performance.	

Responsible person(s): Please select (check the box(es)) next to the best person(s) to be responsible for facilitating the implementation of the aspect to motivate nurses to apply their knowledge in practice.

	Associate Executive Directors of Nursing for KAMC and KASCH	
	Clinical Directors of Nursing Operations for KAMC and KASCH	
	Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and KASCH	
	Nurse Managers in all nursing care areas for KAMC and KASCH	
	Director of Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH	
	One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

Time frame: Select the appropriate timeframe within which time the "incentives" for motivation should be provided to nurses to apply their knowledge in practice.

1	1 week after the training program	
2	1-3 months after the training program	
3	4-6 months after the training program	
4	7-9 months after the training program	

Suggestions/comments	

5.4 CONCLUSION

The chapter outlined the literature review on types of action plans, the principles of action plan development, steps in developing an action plan, the application of the Systemic Model of Transfer of Learning, the development of the draft action plan integrating the data from Phases 1, 2, and 3, and the first draft of an action plan with the validation tool embedded. The validation tool, embedded in the draft action plan, was presented to explain how panellists were allowed to directly comment on each action, method, responsible persons, and the time frames allocated to each action.

Chapter 6 will entail a discussion of Phase 5, the validation process of the draft action plan.

CHAPTER SIX: PHASE 5: METHODOLOGY, VALIDATION PROCESS AND FINAL ACTION PLAN

6.1 INTRODUCTION

Chapter 6, as illustrated in Table 6.1, outlines Phase 5 of the study. This chapter describes the qualitative component of the explanatory sequential mixed method approach, thus the methodology used (e-Delphi), data collection and analysis, interpretation of the validation findings, and the final validated action plan.

Table 6.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	Chapter outline	Chapter content
Chapter 1	Overview of the study.	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review.	Consists of the literature review related to: Systemic Model of Transfer of Learning by Donovan and Darcy, Transfer of learning and Pain management and tools.
Chapter 3	Research design and methodology.	Illuminates the overarching research design. Phases 1, 2 and 3 (quantitative phases): Methodology and Data gathering.
Chapter 4	Data analysis and interpretation.	Presents the data analysis and interpretation of the findings from Phases 1 to 3.
Chapter 5	Phase 4.	Includes a description of Phase 4 of the study: Literature review on action plan development.

		Development of the draft action plan.
Chapter 6	Phase 5.	Outlines and describes Phase 5 of the study (qualitative phase): Methodology. Validation of the action plan: The action plan.
Chapter 7	Conclusion, recommendations, and limitations	It deals with the conclusion, recommendations and limitations of the study.

6.2 METHODOLOGY

In Phase 5 of the study, a qualitative design was used to collect data from a panel of professional nurses and clinical facilitators using the e-Delphi technique. The purpose was to validate the draft action plan in order to formulate the final action plan that contributes to enhancing the transfer of learning of pain management competencies of nurses.

6.2.1 The Delphi technique

The Delphi method, developed in the 1950s by Rand Corporation, is generally used to gain consensus among experts on a specific topic (Gluszel 2021:2). It can be defined as a multi-staged or iterative survey used to collect and distil knowledge from anonymous opinions among a group of experts or panel of informed individuals in a specific field (stakeholders) of application with controlled feedback to reach consensus on an important issue (Keeney et al. 2011:3).

This iterative survey method uses a questionnaire, in this case, a validation tool (see Annexure 13) to collect and analyse data, interspersed with controlled feedback with each stage building on the results of the previous one (Izaryk & Skarakis-Doyle 2017:1225; Lloyd & Stirling 2015:3; Meskell et al. 2014:32; Chung et al. 2014:6145;

Grove et al. 2013:691; Polit and Beck 2021:236; Keeney et al. 2011:3). Consensus is reached by, firstly, generating ideas, secondly, by organising and structuring these ideas, and by combining and or addressing individual judgements should there be a lack of agreement (Gruszek 2021), until a 75 % agreement is reached.

A panel of registered nurses (n = 10) and clinical facilitators (n = 2), identified as knowledgeable about pain management, participated as panellists. Through their independent and anonymous inputs in various rounds, the panellists reached a consensus after three rounds. The purpose of this was to validate the action plan to enhance the transfer of learning of pain management competencies among Saudi Arabian nurses.

The Delphi technique belongs to dialectic consensus development methods that resolve differences between views. It is employed to seek an improved position satisfactory to all participants (Grove et al. 2013:435; Keeney et al. 2011:7). The types of Delphi's are (1) Classical or consensus Delphi; (2) Modified Delphi; (3), Decision Delphi (4) Policy Delphi; (5) Real-Time Delphi; (6) e-Delphi; (7) Technological Delphi; (8) Online Delphi; (9) Argument Delphi and (10) Disaggregative Delphi (Grove et al. 2013:435; Keeney et al. 2011:7). For this study, the **e-Delphi technique** was employed.

The electronic-Delphi ("e-Delphi") survey involves the administration of the Delphi by e-mail or through completion of an online form (Hall, Smith, Heffernan, Fackrell (2018:2), Keeney et al. (2011:7). In this study context the panellists gained access to the draft action plan with an embedded validation tool, through a link accessible from the recruitment letters (see Annexures 10, 14). This allowed panellists to anonymously provide their inputs, opinions, and suggestions on the validation tool.

The following "four key characteristics" as stated by Gluszek (2021:3), Hall et al. (2018:2), Rai et al. (2017:3230), Skinner et al. (2015:33), Chung et al. (2014:6145), and Keeney et al. (2011:7) were maintained during the e-Delphi validation process:

6.2.1.1   The **anonymity** of Delphi participants was maintained. They could freely express their opinions because a gatekeeper shared the recruitment letter with the eligible experts (panellists) via e-mail. They could access the

action plan and validation tool via a link in the recruitment letter on Google Forms, after which the researcher received raw data via the software program Google Form®. Thus, the e-mail addresses of the panellists were not known to the researcher, and the raw data could not be linked to the specific panellist.

6.2.1.2	**Iteration** allowed the panellists to refine their views considering the progress of the group's feedback. However, they did this individually, from one round to the next.
6.2.1.3	**Controlled feedback** informed the participants of the other panellists' combined perspectives by sharing a revised action plan and validation tool with panellists after each round.
6.2.1.4	**Statistical aggregation** of group responses allowed for quantitative analysis and interpretation of data until all panellists reached a consensus of 75%. Items rated below this level were altered or discarded depending on the inputs received in each round until **75%** on every item was reached.

6.2.2   Advantages of e-Delphi technique.

The e-Delphi technique for obtaining group consensus was the method of choice to validate the action plan based on the following advantages, as described by Izaryk and Skarakis-Doyle (2017:1226) and Gluszek (2021: 23):

6.2.2.1 Collecting opinions from a wide geographical area.

The opinions of nurses and clinical facilitators were gathered employing an electronic Delphi tool that was distributed via email and did not require in-person interaction. This enhanced accessibility for panellists from any location and enhanced the response rate to the Delphi tool. The response rate for Rounds 1 and 2 was 100%, while in Round 3 it was 83.3%.

6.2.2.2 Anonymity.

The Delphi participants' identity was kept anonymous. The recruitment letter was shared with the eligible experts (panellists) via e-mail by a gatekeeper. By clicking on

the link in the recruitment letter, they would be able to access the action plan and validation tool, following which analysed data (quantitative opinions) was received through the software program Raw Narrative Data (in bulk) as answers to open-ended questions were received from the software program. Data could, therefore, not be linked to any individual panellist.

6.2.2.3 The iterative process

In an iterative process, the panellists could refine their views based on the group's feedback from round to round (Hall et al. 2018:3).

6.2.3 Criticisms and limitations of the Delphi technique

Even though evidence from the literature indicates that the Delphi method is susceptible to criticisms and limitations as described by Gerrish and Lathlean (2015: 274) and Keeney et al. (2011:20), these criticisms were addressed in this study as follows:

6.2.3.1 **Lack of universal guidelines** by allowing flexibility and gaining consensus. In this study, the rounds continued until a consensus was reached. The panellists knew the rounds would continue until consensus (see the recruitment letters, Annexure 9, 10, 14 and 19) and agreed to participate in all rounds. In this study, three rounds were conducted to gain a consensus.

6.2.3.2 **The existing literature does not provide a specific or predetermined sample size** for the Delphi panel to constitute a representative sample. Keeny et al. (2011:53) and Rai et al. (2017:3233) suggest that if the sample is a homogenous panel, as it is in this study, a sample size of 10-15 is adequate. Therefore, a panel of twelve individuals participated as panellists in the study.

6.2.3.3 **A lack of true anonymity**. Anonymity was ensured in this study. The panellists were recruited by gatekeepers, who shared the recruitment letter with the eligible experts (panellists) via e-mail. The link to the validation tool was included in the recruitment letter, and the inputs of panellists were received in bulk via the software program. The researcher

had no contact with any individual panellist, and the gatekeeper did not have access to raw data. It was not possible to link any data with an individual.

6.2.3.4 **Expert opinions** are difficult to obtain when selecting the Delph panellists, as identifying them is not always easy. In this study, the gatekeepers received a letter explaining their role as gatekeepers and the requirements about who will be eligible to be an expert panellist (see Annexure 16).

6.2.3.4 Misconceptions related to identifying and **measuring consensus** are contentious within Delphi literature. This research gave panellists ten days to assess the plan and provide feedback and recommendations. After receiving feedback, the researcher assembled and analysed it. The amended drafts of the action plan were shared exclusively with the panellists through gatekeepers, who sent them (with a new recruitment letter) with a link. This distribution method was based on analysing and validating the action plan in each round of the Delphi process. The process was continued until there was a 75% consensus, as recommended by Keeney et al. (2011:27). The researcher conducted three rounds.
6.2.3.5 There is a view that the Delphi technique is demanding by nature as **it is time-consuming** to complete the process. To overcome time constraints, all panellists were given ten days for each round to respond and were motivated by effectively communicating the objectives and their contribution to the study, leading to participation until the last round.

6.2.4 The Validation Instrument

It was impossible to separate the draft action plan from the validation instrument as each aspect of the action plan had to be validated. Therefore, the validation instrument, embedded as part of the action plan, was developed to ensure a rigorous validation process.

The draft action plan was developed after reviewing the literature on how an action plan should be developed, distinguishing the types of action plans, the principles to be applied, and the steps to be followed. The action plan was informed by the analysed data from Phases 1, 2, and 3 and using the System Model of Transfer of Learning to guide the process of goal attainment. The draft action plan was therefore developed based on the identified needs and recommendations obtained during the integration of findings from Phases 1, 2, and 3 (see Table 5.3).

It was necessary to develop a validation instrument embedded in the draft action plan to validate the action plan (see Table 5.3). The embedded validation assessment instrument allowed the panellists to reflect on and provide opinions on every aspect (see Table 5.3).

6.2.4.1 The characteristics of the validation instrument

The design of the validation instrument was compiled and embedded in the action plan. It was carefully considered and built into the Google Forms® software program. This is a free online toolkit for gathering and managing data based on research aims to be achieved. Google Forms® was selected since it does not require login details. Thus, access was easy for all panellists who clicked on the link in the recruitment letter. This speeds up the time for the feedback collection process as Google Forms is a free online tool from Google that provides several shortcuts that allow panellists to navigate and complete the form faster. The validation instrument, embedded in the action plan, consisted of:

- Section A: Contains **biographical information** of the panellists who participated in the validation process.
- Section B: Entails the **action statements, methods to revive the actions, persons responsible for the actions, timeframes, and a space for comments**. Panellists could agree or disagree with any statement or action and could tick appropriate boxes where they had to indicate their choice (see Figure 6.1, a copy of part of a Google Form, illustrative of the embedded validation instrument). At the end of each sub-item, there was space for

comments in the form of an open-ended question for qualitative enhancement (see Figure 6.1).

Figure 6.1: A copy of a part of the Google Form illustrative of a draft action plan with the embedded validation instrument

- Before data collection, the draft action plan, with the embedded validation tool, was subjected to **pre-testing** to determine if the panellists understood the wording, whether and where clarity was needed, or where any other amendments were required (see Section 6.2.5 for the pre-test results). To enhance the validation instrument, it was also tested for the draft action plan.

6.2.5   Population

From the target population as described in Section 3.5, 12 participants, consisting of two clinical facilitators from both hospitals (see Table 6.2), were selected. The population was deemed appropriate due to its composition of nurses with significant pain management experience.

6.2.6   Sample

A **purposive non-probability sampling** strategy was used to select the 12 Delphi panellists who qualified as **experts** in the subject matter.

"Experts" are a group of "informed individuals" and "specialists in the field" with knowledge of a particular field (Keeney et al. 2011:7). In this context, they were the nurses and clinical facilitators who complied with the following criteria:
   a) Must have had an interest in pain management.
   b) Nurses who had attended at least one pain management workshop within the past two years.
   c) Nurses who had attended ward in-service training about pain management in the past 12 months.
   d) Clinical facilitators (clinical resource nurses) responsible for the pain management training of nurses in those nursing care divisions mentioned above.
   e) Be committed to at least three rounds of Delphi (see Annexure 16)

The panel recruited by the gatekeepers consisted of two clinical facilitators (one from each hospital) and ten nurses (five from each hospital) (see Table 6.2). The

purposively selected sample of panellists was, as suggested by various authors (Baran & Galka 2016:117; Rubin & Babbie 2014:669; Carter, Lubinsky & Domholdt 2013:99), selected because they were able to provide high-quality responses and information because of their comprehensive understanding of the subject.

As indicated by Rai et al. (2017:3233), Keeney et al. (2011:48), Gluszek (2021:5), Izaryk and Skarakis-Doyle (2017:1228), as well as Da Silva and Montilha (2021:3), there is no restriction on the number of panellists as it depends significantly on the research objectives. This study's research question and objectives guided the composition of this study's panel.

Table 6.2: Sample of e-Delphi panellists

Panel members	Nursing Care Divisions	Number in Hospital A	Number in Hospital B
Clinical Facilitators	Medical ward	1	
	Paediatric ward		1
Registered Nurses	Medical ward	1	1
	Surgical ward	1	1
	Paediatric ward	1	2
	Cardiac ward	1	
	Obs-gynae ward	1	1
Subtotal		6	6
Total		12	

6.2.7 Pre-testing of the e-Delphi validation instrument

A pre-test is a process in which a small group of participants is given a data collection instrument to determine the content and validity of the instrument before the actual study is carried out (Management Association, Information Resources 2019:1206; Keeney et al. 2011:144).

Using the recommendation of Wang and Reio Jr. (2017:244) and Keeney et al. (2011:144), a pre-test was administered before round one of the main e-Delphi. This assisted the researcher in cross-checking that the questions asked, the items included, and the instructions were properly understood and correctly interpreted, thus identifying whether modifications of the draft action plan and embedded validation tool were needed, as suggested by Keeney et al. (2011:63).

Ethics approval to conduct the study was received from The Health Studies Research Ethics Committee, Department of Health Studies, Unisa REC-012714-039 (see Annexure 6a), REC-240816-052 (see Annexure 6b). Nursing Services Permission was obtained to conduct research (see Annexure 7a), as well as from the KAIMRC and the Institutional Review Boards (IRB) of study hospitals A and B, approval study number SP 18/036/R (see Annexure 7b); IRB Annual Extension SP 18/036/R (see Annexure 7c); and IRB 6 Months Extension SP 18/036/R (see Annexure 7d as an extension of the ordinal ethics certificate which was needed due to the time lapse between the different phases of the study). Approval was given by the supervisor, who also pre-tested the action plan and validation instrument online. The pre-test was conducted between **22 June and 03 July 2023.**

Using the same criteria as explained (see Section 6.2.4), the gatekeepers selected a 33,3% sample. Thus, from the non-sampled nursing divisions with similar characteristics, the gatekeepers recruited two registered nurses, one from each of the Hospitals A and B, and two clinical facilitators, one from each of Hospitals A and B. The panellists involved in the pre-test were not included in the main study.

The gatekeepers emailed the recruitment letter, with the link to the pretest available in the letter, to the four eligible experts (panellists) (two clinical facilitators, one for critical care from each hospital, and two nurses, one for critical care from each hospital). Ten days were allowed to complete the pre-test and submit the answers online.

All four recruited panellists volunteered to participate and submit their inputs (100% response rate). All panellists found the validation instrument's content to be clear and familiar. No suggestions were made by any of the four panellists (N = 4; f = 100%).

6.2.8   Ethical considerations

According to Keeney et al. (2011:105), the ethical principles to focus on, include human dignity, non-maleficence, and the role of the researcher. The ethical principles, as described in detail in Section 3.12, were applied. In addition, the fundamental aspects of ethical principles that must be emphasized in Phase 5 (the validation process), are informed consent, confidentiality, and anonymity.

6.2.8.1 Informed consent

Informed consent is defined as a clear, voluntary agreement given by an autonomous individual capable of making sound decisions to participate in a study after the researcher has presented sufficient and understandable information about potential risks and benefits (Reed, Bohlander, Wake & Smith 2016:283; Polit & Beck 2014:382). To avoid a potential conflict of interest, the gatekeepers shared the recruitment letter (see Annexures 9 and 10) with each purposively selected panellist via e-mail. The information letter informed all participants fully before they decided to participate.

6.2.8.2 Confidentiality

Confidentiality was maintained throughout the Delphi process as follows:

(1)   The link to the e-Delphi validation tool was included in the recruitment letter. Panellists could click the link to obtain access; thus, no identity was required.

(2)   As data were transferred to spreadsheets for statistical analysis, the Google Form software provided bulk raw data with no link to any individual participant.

(3)   The researcher could not link specific responses with specific participants as only sets of raw were received via the software program.

6.2.8.3 Anonymity

The anonymity of panel members provides the opportunity for each panel member to respond to the ideas unbiased by the identities of their colleagues (Bradley 2013:241; Keeney et al. 2011:9). The Google Form software allowed the Delphi participants to

remain anonymous as there was no link between the raw data and the individual participants (see Section 6.2.2.2).

6.2.9   Data gathering

The researcher e-mailed a letter to the gatekeepers to explain what is expected from them as gatekeepers (see Annexures 15, 17, and 21). The gatekeepers then sent the recruitment letters (see Annexures 10, 14 and 19) to the selected panellists.

The data for validation of the draft action plan was gathered as discussed in Section 6.2.1. The researcher received all responses from panellists directly from the software program for data analysis as the action plan and validation tool were uploaded on Google Forms by the researcher (see Annexures 13, 16, and 20).

6.2.10 Data analysis

The e-Delphi data analysis involved both qualitative and quantitative data, as recommended by Keeny et al. (2011: 84).

Closed-ended questions: Each panellist's responses for each option in the validation tool and the summary for all panel members were calculated on Google Forms and presented as frequencies and percentages. The frequencies were calculated to identify the acceptable level of consensus. Even though there is no standard threshold for consensus, for this study, the consensus level was decided to be 75%, as suggested by Keeney et al. (2011:46).

Open-ended questions: For the comments and suggestions made in the open spaces provided, a thematic analysis of the narrative data was done using Clarke and Braun's (2013:121) six-phase framework, as described in Section 3.14.

The results and suggestions of all panel members were integrated, resulting in the development of an updated action plan and validation tool. These updates were subsequently communicated to participants in each subsequent round using a hyperlink in the recruitment letter.

6.2.11 Trustworthiness

Qualitative researchers' trustworthiness refers to the degree of confidence they have in their data and analyses following the principles of credibility, confirmability, transferability, dependability and authenticity, which are discussed by Zhang (2021:60), Hall & Roussel (2014:38), Polit & Beck (2014:394) as well as Keeney et al. (201:103).

This qualitative phase's rigour was evaluated using the concept of trustworthiness. The study adhered to the principles of credibility, confirmability, transferability, dependability and authenticity to serve as a validation strategy for a Delphi study. Using these principles, the validation tool allowed each panel member to provide feedback on every component of the draft action plan until there was 75% consensus (Keeney et al. 2011:27).

The trustworthiness, as well as the reliability of the validation instrument, ensured the quality of the data, as described below.

6.2.11.1   Credibility

Credibility refers to the consistency of participants' views with the researcher's views and interpretations to give confidence in the truth value of the data and findings (Zhang 2021:60; Polit & Beck 2014:323). To ensure the credibility of the action plan, nurses and clinical facilitators were invited to participate as expert panellists by receiving recruitment letters shared through emails by gatekeepers who have judged them to be knowledgeable about pain management (see Section 6.2.4). The action plan and validation tool were pretested (see 6.2.5), and the panellists were recruited due to their competencies and skills as experts (see 6.2.4). The validation tool facilitated consensus among panellists, with 75% agreement, about the various components of the draft action plan. These components encompass action statements, methodologies, responsible individuals, and timeframes.

6.2.11.2 Confirmability

Confirmability refers to objectivity or neutrality, the potential for congruence between two or more independent people about the data's accuracy, relevance, or meaning (Polit & Beck 2014:323).

To ensure the validity of the data, Delphi participants were kept anonymous to ensure they were free to express themselves and to ensure that the data were reflective of the information they provided (see Section 6.2.5), and three rounds were completed until a **consensus of 75% was reached.** The researcher kept a comprehensive data trail to ensure that others could repeat the process.

6.2.11.3 Transferability

Transferability is the extent to which qualitative findings can be transferred to or have applicability in other settings or groups (Polit & Beck 2014:323). The researcher ensured a complete data trail to allow other researchers to transfer the findings to a similar context if they found it appropriate.

6.2.11.4 Authenticity

Authenticity refers to the extent to which qualitative researchers fairly and faithfully show a range of different realities in the collection, analysis, and interpretation of a report when it conveys the feeling tone of participants (Polit & Beck 2014:323). The achievement of consensus among panel members indicated the authenticity of this study.

6.2.12 Validity

Since validity was defined in Section 3.11, the researcher adhered to the definition and ensured that the Delphi validation instrument collected pertinent and accurate data purporting to measure the attribute of the construct under investigation. This was determined by evaluating the Delphi validation tool's content and face validity for this study phase.

6.2.12.1 Content validity

The embedded validation instrument's content was derived from the literature review and in consultation with the supervisor, statistician, and scientific review panel to guarantee that the study's objectives could be met. The content of the draft action plan was pre-tested, allowing modifications to be made to the final structure of the validation instrument based on feedback from the pre-testing group.

6.2.12.2 Face validity

The Delphi validation instrument underwent pre-testing before distribution to the panellists of the main study, and the items were factually designed, considering the thorough literature review specific to the draft action plan. The supervisor and the Unisa scientific review committee evaluated and provided feedback on whether the embedded Delphi validation instrument evaluated what it was designed to measure. Thus, it was found that the items of the validation instrument had face validity, as they were sufficiently well-considered to validate the target construct and validate the draft action plan.

The reliability of the Delphi validation instrument was ensured before the validation process as it is a prerequisite for validity.

6.2.13 Reliability

Reliability in this context was assessed to ensure *consistency* in employing the e-Delphi technique. This is analogous to dependability to ensure trustworthiness, which refers to the consistency of data over time and conditions (Polit & Beck 221:316).

6.2.13.1 Consistency

The Google Forms® software program was used in this study for e-Delphi data analysis. The pre-testing of the validation instrument enhanced the reliability of the developed tool and draft action plan. No amendments were requested by the pre-test panellists (see Section 6.2.5). Three rounds of e-Delphi were completed until 75% consensus was reached, ensuring data consistency is proof of the reliability of this phase

of the study. The researcher kept a trail of the collected data as evidence if supervisors or examiners needed it or if the results were questioned.

Through a pre-test, panellists were allowed to provide feedback on the validation tool before conducting the main study for data collection. The supervisor reviewed the researcher's activities comprehensively and checked that every stage of the validation process adhered to the established procedures. In addition, using the tool contributed to increased credibility, while the process effectively determined the dependability of the action plan.

6.3 FINDINGS

The initial round of analysis yielded the subsequent findings, which will now be expounded upon by a comprehensive analysis of the data and subsequent interpretation.

6.4 ROUND 1

Keeney et al. (2011:13) state that achieving a consensus of 75% does not mean obtaining the correct answer. Rather, a panel of participants has agreed that they are satisfied with the product. Round 1 revealed the following:

6.4.1 Biographical data

6.4.1.1 Gender of panellists (N = 12)

All 12 participants (N = 12; f = 100%) were female. In this study, gatekeepers invited nurses regardless of gender. The participating nurses were mostly female because they volunteered to participate, and there were few male nurses in the hospitals under study, as noted in Sections 4.2.1.2 and 4.4.1.1. Terry, Peck, Carden, Perkins, and Smith (2020:701) report that female nurses outnumber male nurses worldwide. Therefore, the recruitment and participation of only female participants are considered reasonable within the scope of this study.

6.4.1.2 Age of panellists (N = 12)

The mean age of the panellists was 37.58 years. As of the time of data collection, the youngest respondent was 26 years old, and the oldest was 47. In this case, the standard deviation was 5.822. Most of the panellists (n = 7; f = 58.4%) were between 36 and 44 years old (see Table 6.3). The present literature analysis provides evidence that emphasizes the significance of an individual's age and length of clinical experience in determining their expertise in pain management (Varndell, Fry & Elliott 2021:10). This study evaluates the role of the gatekeeper in the recruitment of panellists, specifically focusing on their competence in pain management knowledge and experience.

Table 6.3: Panellists' age (N = 12)

Age	n		f = %
26- 35 years	4		33.2
36- 44 years	7		58.4
45 -50 years	1		8.3
Total	12		100

6.4.1.3 Nationality of Panellists (N = 12)

Panellists were from four different nationalities; 50% (n = 6) were Filipinos, followed by 25% (n = 3) South Africans, 16.7% (n = 2) Malaysians, and 8.3% (n = 1) participants were from Saudi Arabia (see Table 6.4). The finding proves the movement of nurses around the globe in response to the prevailing shortage of nurses in affluent nations, which actively recruit healthcare professionals from less economically privileged countries (Kingma 2018:299).

Table 6.4: Panellists' nationality (N = 12)

Nationality	n	f = %
Filipino	6	50
South African	3	25
Malaysian	2	16.7
Saudi	1	8.3
Total	12	100

6.4.1.4 Highest education qualification (N = 12)

Figure 6.2 indicates that the majority of the panellists held Bachelor's degrees (n = 7; f = 58.3%), followed by a Diploma in Nursing (n = 3; f = 25%), while a Master's degree was held by two participants (n = 2; f = 16.7%). The finding above serves as evidence and support that many nurses globally have a bachelor's degree (Suliman and Aljezawi (2018:527)
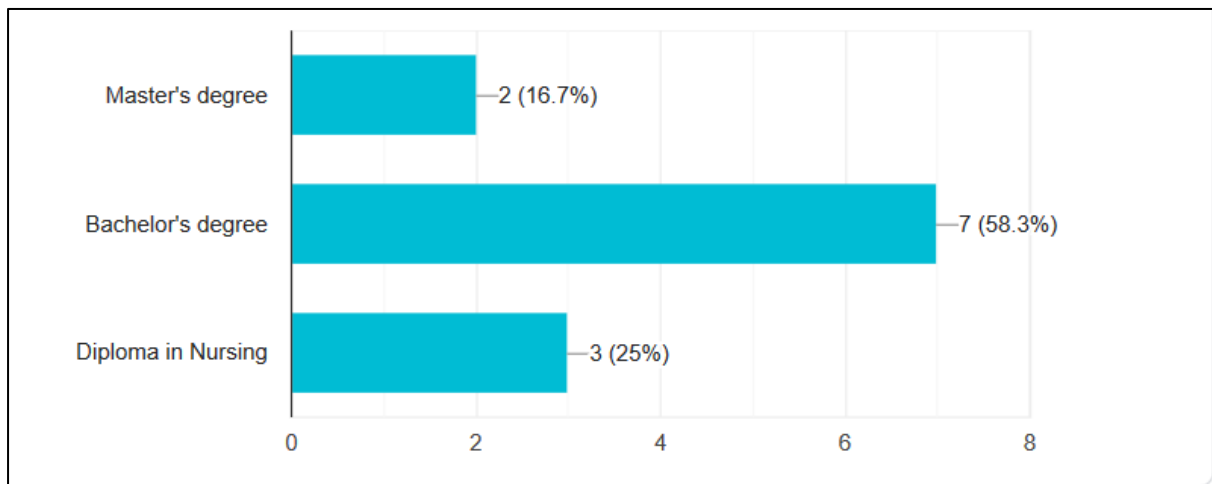
Figure 6.2 Highest level of nursing education (N = 12)

6.4.1.5 *Nursing care areas where the panellists worked (N = 12).*

Six panellists were from the surgical wards (N = 12; f = 50%), three from paediatric wards (N = 12; f = 25%), two from the surgical wards (N = 12; f = 16.7), and one from the obs-gynae (labour and delivery) ward (N = 12; f = 8.3%) (see Table 6.5).

Table 6.5: Distribution of panellists within wards (N = 12)

Nursing Wards	n =	*f* = %
Medical	6	50
Paediatric	3	25
Surgical	2	16.7
Obs-gynae	1	8.3
Total	12	100.0

6.4.1.6 *Current positions of the panellists (N = 12)*

Table 6.6 illustrates that the current positions of the Delphi panellists were eight (f = 66.7%) registered nurses (staff nurses), two (f = 16.7%) clinical facilitators (clinical resource nurses), and two (f = 16.7%) charge nurses. Alnajar et al. (2019:186) high-light that nurses, as healthcare professionals, play a significant role in pain management as they possess the necessary competence to assess and reassess pain, employ both pharmacological and non-pharmacological interventions for pain management, and provide education to patients and their families regarding treatment options. In this context, each panellist made a substantial contribution, as evidenced by their involvement in pain management, as indicated in Section 6.2.4.

Table 6.6: Panellists' positions (N = 12)

Positions	n =	f = %
Registered nurse	8	66.7
Clinical Facilitator	2	16.7
Charge nurse	2	16.7
Total	12	100.0

6.4.1.7 The duration of the current position held (N = 12)

An analysis of the panellists' tenure in their respective positions reveals that, on average, they have held their current positions for 7.6 years. As of the time of data collection, the shortest duration in the current position held by the panellists was five months, and the longest was 18 years. In this case, the standard deviation was 6.4. It was evident from Table 6.7 that most of the panellists had 4 to 18 years (n = 9; f = 75%) of substantial experience in their positions. According to Petersson and Elgán (2020:1651), the time nurses spend with patients experiencing pain is crucial for providing attention, engagement, and discourse. This interaction is vital for developing competence in pain management for the patient and the nurses' ongoing education and self-empowerment.

Table 6.7: The duration of the panellists' current positions (N = 12)

Years in the position held	n	f = %
0–3 years	3	25
4–6 years	4	33.3
7 years or more	5	41.7
Total	12	100

All twelve panellists' responses were analysed using Google Forms, and the findings were described under the headings (1) Action statements, (2) Method(s), (3) Responsible person(s) for methods, and (4) Timeframe required to achieve the methods suggested.

ANALYSIS OF THE VALIDATION:

If 75% or more of the panellists agreed to the specific action statement, the responsible persons for the actions, methods, and time frames within which the outcome must be reached, it was seen as a consensus.

In cases where a selection of items was required or suggested within various methods, a 60% agreement for inclusion of the items indicated inclusion. The following sub-methods applied to the 60% agreement.

Method 1.1.1: Items to be included in the policy to motivate the nurses to improve their qualifications.

Method 2.1.1: Pain assessment tools to be accessed on the electronic patient record system.

Method 2.3.1: Internet-based resources to be accessed by the patients and family members.

Method 2.4.1: Internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management to be accessed by the nursing team in all nursing care.

Method 3.1.1: Specific practice-oriented pain management training to be content included in all nursing care areas.

Method 4.1.1: Different learner types of nurses to be incorporated during learning and training sessions.

Method 4.1.2: How nurses achieve different learning types.

Method 5.1.1: Different teaching approaches to be utilised during pain management training.

Method 6.1.1: Strategies to be employed to motivate nurses to participate in the pain management training program.

Method 7.1.1: Methods to be implemented to motivate nurses to apply their knowledge in practice.

6.4.2   Action statement 1: Motivate nurses to further their studies (N = 12)

As illustrated in Table 6.8, all twelve (f = 100%) panellists agreed; thus, a consensus of 100% was reached that nurses should be motivated to continue their education as part of the action plan.

Table 6.8: Action statement 1: Motivate nurses to further their studies (N = 12)

Action statement 1 (n = 12; N = 12)	Motivate nurses to further their studies		RESPONSES		CONSENSUS REACHED (≥ 75%)
			= n	f = %	Yes/No
		Agree	12	100	YES
		Disagree	0	0	

Method 1.1	Develop a policy to motivate nurses to improve their nursing qualifications.	Agree	12	100	YES
		Disagree	0	0	
1.1.1 **The following items must be included in the policy to motivate the nurses to improve their qualifications.**		RESPONSES			Agreement of (≥60%)
		= n	**f = %**		**Yes/No**
1. Paid full-time study leave 1 year.		7	58.3		NO
2. 20 hours paid study leave and 20 hours full-time work for 1 year.		6	50		**no**
3. Free accommodation for the period of study leave.		8	66.7		**yes**
4. A monetary incentive after completion of a new formal qualification (degree or diploma).		9	75		**yes**
5. One day off to attend a one-day pain management program.		10	83.3		**yes**
6. A monetary incentive after completion of a pain management program.		7	58.3		**no**
7. A certificate issued as an acknowledgement of nurses pursuing distance learning.		12	100		**yes**
8. A monetary incentive after completion of distance learning programs.		9	75		yes
Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications**.**		RESPONSES			CONSENSUS REACHED

(n = 12; N = 12)			(≥ 75%)
	= n	f = %	YES/NO
1. Five Members of the Central Region Nursing Governance and Accountability Board appointed by the Chief Executive Director for Central Region, Riyadh.	6	50	NO
2. Ad hoc committee appointed by the heads of the Human Resource Department Central Region, Riyadh.	7	58.3	
3. Associate Executive Directors of Nursing for King Abdulaziz Medical City (KAMC) and King Abdullah Specialist Children Hospital (KASCH).	7	58.3	
4. Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH.	9	75	
5. Clinical Directors of Nursing Operations for KAMC and KASCH.	10	83.3	
6. Director of Postgraduate Center of Nursing Education for KAMC and KASCH.	10	83.3	
Time frame within which to develop a policy to motivate nurses to improve their nursing qualifications must. (n = 12; N = 12	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
1. 1-3 months	3	25	YES
2. 4-6 months	9	**75**	

3. 7-9 months			0	0	
Method 1.2 **(n = 12; N = 12)**	Present the policy and negotiate for the implementation to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board.	**Agree**	11	**91.7**	**YES**
		Disagree	1	8.3	

Responsible person(s) to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board. (n = 12; N = 12)	**RESPONSES**		**CONSENSUS REACHED** **(≥ 75%)**
	= n	**f = %**	**YES/NO**
1. Five Members of the Central Region Nursing Governance and Accountability Board appointed by the Chief Executive Director in Central Region, Riyadh.	**7**	58.3	**YES**
2. Ad hoc committee appointed by the heads of the Human Resource Department Central Region, Riyadh.	**7**	58.3	
3. Associate Executive Directors of Nursing for KAMC and KASCH.	**7**	58.3	
4. Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH.	**9**	75	
	RESPONSES		**CONSENSUS REACHED**

Time frame within which the policy should be presented, and the implementation negotiated to the MNGHA.(n = 12; N = 12).			(≥ 75%)
	= n	f = %	YES/NO
1. 3 months	4	33.3	NO
2. 6 months	7	58.3	NO
3. 9 months	1	8.3	NO

Method 1.3 (n = 12; N = 12)	Include the policy as part of the hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA)	Agree	12	100	YES
		Disagree	0	0	YES

Responsible person(s) for the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications. (n = 12; N = 12)	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
1. Associate Executive Directors of Nursing for KAMC and KASCH.	6	50	NO
2. Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	10	83.3	NO
3. Nurse Managers in all KAMC and KASCH nursing care areas.	10	83.3	NO

The time frame within which the policy should be included in all hospitals' policies after approval by MNGHA.	RESPONSES	CONSENSUS REACHED

(n = 12; N = 12)			(≥ 75%)
	= n	f = %	YES/NO
a) 1 month	3	25	
b) Six weeks	1	8.3	
c) 2 months	1	8.3	NO
d) 3 months	7	58.3	

A consensus was reached about all the methods presented to achieve action statement 1, as indicated in Table 6.8.

As illustrated in Table 6.8, a 100% consensus (n = 12; N = 12) was reached that a policy must be developed to motivate nurses to improve their nursing qualifications. Some panellists recommended that a policy must be devised to encourage nurses to pursue further education. One panellist commented:

> *"When there's a policy, the organization will encourage nurses by giving them a day off or education day on the day of education".*

Table 6.8 summarises the items selected by 60% or more of the panellists to be included in the policy to motivate nurses to pursue advanced studies. These items were an acknowledgement certificate for nurses pursuing distance learning (100%; n = 12; N = 12), one day off for attending a one-day pain management program (83.3%; n = 10; N = 12), while 75% (n = 9; N = 12) agreed to include a monetary incentive after

the successful completion of a new formal qualification (degree or diploma) and distance learning programs should be included in the policy; and 66.7% (n = 8; N = 12) agreed on free accommodation for the period of study leave.

One of the panellists indicated that:

> "*A policy should specify that an employee must have worked for the organization for at least two years before he or she can apply for this course*".

According to a study conducted by Panlican, Pasay, Gonzales, Alreshidi and Alenzi (2020:100), it is recommended that hospitals implement a policy for the initial assessment of nurses' ability to manage pain as part of their orientation process. The nursing education department should closely monitor this policy.

a) **Responsible person(s) to** develop a policy to motivate nurses to improve their nursing qualifications **(N = 12)**

An overall rate of 83.3% (n = 10; N = 12) of panellists indicated that the clinical director of nursing operations for KAMC and KASCH and the director of the postgraduate centre of nursing education for KAMC and KASCH should be responsible for the development of a policy that motivates nurses for further studies. 75% (n = 9; N = 12) indicated that the nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH would be the appropriate persons responsible (see Table 6.8; method 1.1).

b) **Time frame** required to develop a policy to motivate nurses to improve their nursing qualifications (N = 12)

A majority of 75% (n = 9; N = 12) of panellists reached an agreement that 4–6 months was the best timeframe for policy development to motivate nurses to improve their nursing qualifications (see Table 6.8; method 1.1).

6.4.2.2 **Method 1.2:** Present the policy and negotiate for the implementation to motivate nurses to improve their nursing qualifications to the Ministry of

As indicated in Table 6.8, panellists reached a consensus of 91.7% (n = 11; N = 12) that the policy must be presented and negotiated for implementation to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board.

a) **Responsible person(s) to** present the policy and negotiate for the implementation to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board (N = 12)

There was a 75% consensus (n = 9; N = 12) that the nursing policy committee representative appointed by the Associate Executive Director of Nursing for KAMC and KASCH is best qualified to present and negotiate the policy's implementation (see Table 6.8; method 1.2).

b) **Time frame** required to present the policy and negotiate for the implementation to the MNGHA (N = 12)

A consensus was not reached on the time frame within which the policy should be presented, and the implementation should be negotiated with the MNGHA (see Table 6.8; method 1.2).

6.4.2.3 **Method 1.3:** Include the policy as part of the hospitals` policies after approval of the action plan by the Ministry of National Guard Health Affairs (MNGHA) (N = 12)

As illustrated in Table 6.8, a 100% consensus (n = 12; N = 12) was reached that the policy to motivate nurses to improve their nursing qualifications must be included in all hospital policies following MNGHA approval.

As illustrated in Table 6.8 (method 1.3), 83.3% (n = 10; N = 12) of panellists indicated that both the clinical directors of nursing operations in every facility for KAMC and KASCH, as well as nurse managers in all KAMC and KASCH nursing care areas will be the appropriate persons to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications after being approved by MNGHA (see Table 6.8.

As indicated in Table 6.8, consensus was not reached as to when the policy should be included in all hospitals' policies following its approval by the MNGHA (method 1.3).

6.4.3 Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area (N = 12)

Panellists reached a 91.7% consensus (n = 11; N = 12) that the action statement to make appropriate and relevant pain management tools accessible to the nursing team in every clinical area should be included in the action plan (see Table 6.9).

Table 6.9: **Action statement 2: Make appropriate and relevant pain manage-ment tools accessible to the nursing team in every clinical area (N = 12)**

		RESPONSES	CONSEN-SUS REACHED (≥ 75%)
Action state-ment 2 (n = 12; N = 12)	Make appropriate and rele-vant pain management tools accessible to the nurs-ing team in every clinical ar-eas.		

			= n	f = %	Yes/No
		Agree	11	91.7	YES
		Disa-gree	1	8.3	
Method 2.1	Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appro-priate. tool in all nursing care areas.	Agree	0		NO
		Disa-gree	0		
2.1.1 The following pain assessment tools should be accessible on the electronic pa-tient record system		= n		f = %	Agreement of ≥60% Yes/No
QUEST		0		0	
COLDSPA		0		0	
OPQSTUV		0		0	
PQRST		8		66.7	Yes
BPI		0		0	
VDS		0		0	
VAS		0		0	
NPASS		1		8.3	No
CPOT		1		8.3	No
BPS		0		0	
COMFORT B		2		16.7	No
CRIES		8		66.7	Yes
ABBEY		1		8.3	No
PAINAD		3		25	No

NOPPAIN	0	0	
CNPI	0	0	
Responsible person(s) to include the pain assessment tools in the electronic patient record system (n = 12; N = 12)	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
Two computer engineers appointed by the HR manager, each assigned for KAMC and KASCH.	6	50	
Five nursing health informatics specialists appointed by Associate Directors of Nursing for KAMC and KASCH.	9	75	
Clinical Director of Nursing Operations appointed by Associate Executive Directors in every facility for KAMC and KASCH.	6	50	NO
One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	11	91.7	
Time frame within which to include the pain assessment tools in the electronic patient record system. (n = 12; N = 12)	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
1- 3 months	4	33.3	
4- 6 months	7	58.3	

7-9 months		1	8.3	NO
Method 2.2 (n = 12; N = 12)	Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas.	Agree	10	83.3	
		Disagree	2	16.7	YES
Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas (n = 12; N = 12).	RESPONSES			CONSENSUS REACHED (≥ 75%)
	= n		f = %	YES/NO
Clinical Directors of Nursing Operations for KAMC and KASCH.	9		75	
Nurse Managers in all KAMC and KASCH nursing care areas.	8		66.7	NO
Clinical facilitators in all KAMC and KASCH nursing care areas.	9		75	
Charge nurses in all KAMC and KASCH nursing care areas.	8		66.7	
Time frame within which to involve the nurse supervisors to provide pain management training supervisory support to the	RESPONSES			CONSENSUS REACHED (≥ 75%)

nursing team on how to conduct pain assessment in all nursing care areas (n = 12; N = 12)	= n		f = %	YES/NO
Every shift when the need arises	5		41.7	NO
Every patient round when the need arises	8		66.7	
Method 2.3 (n = 12; N = 12) Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management.	Agree	11	91.7	YES
	Disagree	1	8.3	
The following Internet-based resources should be accessible.	RESPONSES			Agreement of (≥60%)
	= n	f = %		YES/NO
Patient pain management websites	10	83.3		yes
Patient pain management hotlines	9	75		yes
Pain management support groups	10	83.3		yes
Peer support groups	8	66.7		yes
Responsible person(s) to ensure internet-based resources should be accessible to patients and family members to provide support about pain management.	RESPONSES			CONSENSUS REACHED (≥ 75%)
(n = 12; N = 12)	= n	f = %		YES/NO
Chief Executive Director for KAMC and KASCH.	5	41.7		
Two health information technologists appointed by the HR manager, each assigned for KAMC and KASCH.	7	58.3		

	= n	f = %	
Two communication and information administrators appointed by the HR manager for KAMC and KASCH.	5	41.7	NO
Five nursing health informatics specialists appointed by Associate Directors of Nursing for KAMC and KASCH.	6	50	
Associate Executive Directors of Nursing for KAMC and KASCH.	3	25	
Clinical Directors of Nursing Operations for KAMC and KASCH.	6	50	
Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and KASCH.	6	50	
Nurse Managers in all KAMC and KASCH nursing care areas.	8	66.7	
Charge nurses in all KAMC and KASCH nursing care areas.	8	66.7	
Registered nurses in all KAMC and KASCH nursing care areas.	8	66.7	
Time frame within which to make the hospitals' internet-based resources accessible to the patient and family members to obtain other support about pain management . (n = 12; N = 12)	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
Every day at a convenient time	3	25	YES
24-hour access 7 days a week	9	7	

		RESPONSES			CONSENSUS REACHED
		= n		f = %	YES/NO
Method 2.4 (n = 12; N = 12)	Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas.	Agree	12	100	YES
		Disagree	0	0	
The following Internet-based resources on pain management publications, electronic materials, and organisations specialising in pain management should be accessible.		RESPONSES			Agreement (≥60%)
		= n	f = %		YES/NO
E-newsletters		6	50		no
Videos on pain management		9	75		yes
Facts sheets		3	25		no
Pain toolkits		10	83.3		yes
Clinical updates		9	75		yes
The World Health Organization		4	33.3		no
American Pain Society		5	41.7		no
International Association for Study of Pain		7	58.3		no
Responsible person(s) to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas. (n = 12; N = 12)		RESPONSES			CONSENSUS REACHED (≥ 75%)
		= n	f = %		YES/NO

	= n	f = %	
Two computer engineers appointed by the HR manager, each assigned for KAMC and KASCH	3	25	
Two librarians appointed by the HR manager each assigned for KAMC and KASCH.	6	50	
Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH.	11	91.7	
Nurse Managers in all KAMC and KASCH nursing care areas.	7	58.3	NO
Nurse supervisors appointed by Executive Associate Directors of Nursing for KAMC and KASCH.	4	33.3	
One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	9	75	
One nurse educator appointed by the Director of the Postgraduate Nursing Education Center for KAMC and KASCH.	7	58.3	
Time frame within which to make the hospitals' internet-based resources accessible to the nursing team in all nursing care areas on pain management publications and electronic materials. (n = 12; N = 12)	RESPONSES		CONSENSUS REACHED ($\geq$ 75%)
	= n	f = %	YES/NO
Every nursing shift	3	25	
Continuously available	9	75	YES

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6.4.3.1 **Method 2.1:** Include pain assessment tools in an electronic patient rec-
ord system so that the nursing team can choose and access the most
appropriate tool in all nursing care areas (N = 12**)**

Panellists did not agree or disagree as to whether pain management tools must be accessible on the electronic patient record system so that the nursing team can choose the most appropriate tool in all nursing care areas. This important question was included in the draft action plan in round 2 questions to indicate agreement or disagreement.

a) **Responsible person(s)** to ensure that an electronic format of pain assessment tools is available for inclusion in the electronic patient record system so that they can be accessible to the nursing team in every nursing care area (N = 12)

Consensus was not reached regarding who the responsible person(s) should be to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system (see Table 6.9; method 2.1).

91.7% (n = 11; N = 12) of panellists indicated that clinical directors of nursing operations must appoint one pain nurse specialist in every facility for KAMC and KASCH, and 75% (n = 9; N = 12) of panellists indicated that five nursing health informatics specialists must be appointed by associate directors of nursing for KAMC and KASCH as responsible persons to provide the electronic format of the pain assessment tools (see Table 6.9; method 2.1).

b) **Time frame required to** include the pain assessment tools in the electronic patient record system (N = 12)

Panellists did not reach a consensus on the time frame within which pain assessment tools must be accessible in the electronic patient record system (see Table 6.9; method 2.1).

6.4.3.2 **Method 2.2** Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the

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83.3% (n = 10; N = 12) of panellists reached a consensus that the nurse supervisors should be involved with pain management training and supervisory support to the nursing team on how to conduct pain assessments (see Table 6.9).

a) **Responsible person(s)** to involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments **(**N = 12)

Consensus was not reached regarding the person(s) responsible for ensuring that nurse supervisors with pain management training are involved in providing post-pain management training and supervisory support to the nursing team (see Table 6.9; method 2.2)**.** 75% (n = 9; N = 12) of panellists selected both clinical directors of nursing operations for KAMC and KASCH, as well as clinical facilitators in all KAMC and KASCH nursing care areas, as the best responsible persons to involve nurse supervisors with pain management training and supervisory support

b) **Time frame** required to involve the nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (N = 12)

Consensus was not attained on the time frame to involve the nurse supervisors in providing pain management training and supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (see Table 6.9; method 2.2).

6.4.3.3 **Method 2.3:** Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management (N = 12)

A 91.7% (n = 11; N = 12) consensus was reached that hospitals' internet-based resources should be made accessible to the patients and family members to obtain other support about pain management (see Table 6.9). 83.3% (n = 10; N = 12) of panellists indicated that patient pain management websites and pain management support

groups should be hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management (see Table 6.9; method 2.3). There was 75% consensus (n = 9; N = 12) that the patient pain management hotlines should be made available to both patients and their family members in conjunction with hospitals' existing internet-based resources (see Table 6.9; method 2.3).

a) **Responsible person(s)** to ensure that internet-based resources are accessible to patients and their families to provide support about pain management (N = 12)

Consensus was not reached regarding who the responsible person(s) should be to ensure that internet-based resources are accessible to patients and families to provide support about pain management (see Table 6.9; method 2.3).

b) **Time frame** required to make hospitals' internet-based resources accessible to the patients and family members to obtain other types of support about pain management (N = 12)

75% (n = 9; N = 12) consensus was reached that the hospitals' internet-based resources should be accessible to the patients and family members to ensure that they can obtain other support about pain management, 24-hour hours per day and seven days a week (see Table 6.9; method 2.3).

6.4.3.4   **Method 2.4:** Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas (N = 12)

Panellists all agreed (f = 100%; n = 12; N = 12) that hospitals' internet-based pain management publications and electronic resources on pain management publications must be accessible to the nursing team in all nursing care areas (see Table 6.9). The hospitals' internet-based resources on pain management publications and electronic materials mentioned were: pain toolkits (f = 75; n = 9; N = 12), videos on pain management (f = 83.3%; n = 10; N = 12), and clinical updates (f = 75%; n = 9; N = 12) (see Table 6.9).

c) **Responsible person(s)** to ensure that internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management are made accessible to the nursing team in all nursing care areas (N = 12)

Consensus was not reached (see Table 6.9; method 2.4). 91.7% (n = 11; N = 12) of panellists indicated that associate directors of nursing should appoint nursing health informatics for KAMC and KASCH, and 75% (n = 9; N = 12) indicated that one pain nurse specialist appointed by clinical directors of nursing operations in each facility for KAMC and KASCH should be the be responsible for making internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas.

d) **Time frame required to** make pain management publications and electronic materials available via the hospitals' internet to the nursing team in all nursing care areas (N = 12)

A consensus of 75% (n = 9; N = 12) was reached that access via the hospital internet should be continuously available to make pain management publications and electronic materials accessible to the nursing team (see Table 6.9; method 2.4).

6.4.4 Action statement 3: Develop a practice-oriented content-specific short pain management training program (N = 12).

A hundred per cent consensus (f = 100%; n = 12; N = 12) was reached that developing a practice-oriented content-specific short pain management program must be included in the action plan (see Table 6.10).

Table 6.10: Action statement 3: Develop a practice-oriented content-specific short pain management training program.

Action state-ment 3		RESPONSES	CONSEN-SUS REACHED

(n = 12; N = 12)	Develop a practice-oriented, content-specific short pain management training program.				(≥ 75%)
			= n	f = %	Yes/No
		Agree	12	100	YES
		Disa-gree	0	0	
Method 3.1 (n = 12; N = 12)	Include practice-oriented pain management training content for all nursing care areas in the pain management program.	Agree	12	100	YES
		Disa-gree	0	0	
The following specific practice-oriented pain management training content should be included in all nursing care areas.		RESPONSES			Agreement by (≥60%)
		= n		f = %	Yes/No
Methods to promptly assess a patient's pain in all nursing areas.		11		91.7	yes
Assessment of patients' pain in all nursing care areas.		9		75	yes
The advantages and disadvantages of all pain management scales.		9		75	yes
Labour pain is a type of pain to be assessed.		6		50	no
The selection of appropriate pain intervention strategies based on the pain levels assessed.		10		83.3	yes
Responsible person(s) to include specific practice-oriented pain management training content for all nursing care areas (n = 12; N = 12).		RESPONSES			CONSEN-SUS REACHED (≥ 75%)
		= n		f = %	Yes/No

Director of Postgraduate Center of Nursing Education for KAMC and KASCH.	4	33.3	
One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH.	8	66.7	
One Clinical facilitator appointed by Clinical Directors of Nursing Operations in every nursing care area.	7	58.3	YES
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.	11	91.7	
Time frame within which the specific practice-oriented pain management training content should be provided for inclusion in the program. (n = 12; N = 12)	RESPONSES		CONSEN-SUS REACHED (≥ 75%)
	= n	f = %	Yes/No
1 week before the due date of the training program.	0	0	
1 month before the due date of the training program.	8	66.7	NO
3 months before the due date of the training program.	4	33.3	

6.4.4.1   Method 3.1: Include practice-oriented pain management training content for all nursing care areas in the pain management program (N = 12)

A hundred per cent consensus (n = 12; N = 12) was reached that practice-oriented pain management training content for nursing care areas should be included in the pain management program (see Table 6.10). 83,3% (n = 10; N = 12) of panellists

indicated that the selection of appropriate pain intervention strategies based on the pain levels assessed, and 75% (n = 9; N = 12) indicated for both the assessment of patients' pain in all nursing care areas and the advantages and disadvantages of all pain management scales to be specific practice-oriented pain management content to be included in all nursing care areas (see Table 6.10).

a) **Responsible person(s) to include specific practice-oriented pain management training content for all nursing care areas (N = 12)**

As illustrated in Table 6.10, 91.7% (n = 11; N = 12) of panellists agreed that one pain nurse specialist appointed by clinical directors of nursing operations in every facility will be the best person to assume responsibility (method 3.1)

b) **Time frame required** to provide for the inclusion of the specific practice-oriented pain management training content in the program (**N = 12**)

Consensus was not reached regarding the time frame within which the specific practice-oriented pain management training content should be provided for inclusion in the program (see Table 6.10; method 3.1).

6.4.5 Action statement 4: Develop a pain management short program that accommodates all learning types (N = 12)

The panellists were in agreement (f = 100%; n = 12; N = 12) that a short pain management program that accommodates all learning types must be included in the action plan and that it must be developed (see Table 6.11).

Table 6.11: Action statement 4: Develop a pain management short program that accommodates all learning types (N = 12)

		RESPONSES	CONSEN-SUS REACHED (≥ 75%)

			= n	f = %	Yes/No
Action state-ment 4 (n = 12; N = 12)	Develop a pain management short program that accommo-dates all learning types.	Agree	12	100	YES
		Disa-gree	0	0	
Method 4.1 (n = 12; N = 12)	Incorporate different learner types during learning/training sessions.	Agree	12	100	YES
		Disa-gree	0	0	
The following different learner types of nurses should be included during learning/training sessions.		RESPONSES			Agreement by (≥60%)
		= n		f = %	Yes/No
Creative Learners.		11		91.7	yes
Enthusiastic thinking learners.		8		66.7	yes
Self-confident thinkers.		3		25	no
Organised thinking learners.		9		75	yes
Truth-seeking learners.		5		41.7	no
Inquisitive thinkers.		4		33.3	no
Diligent inquisitive learners.		6		50	no
Self-directed learners.		5		41.7	no
The following different learning types that should be incorporated during pain manage-ment learning/training sessions are achieved by using the following learning styles:		RESPONSES			Agreement by (≥60%)
		= n		f = %	Yes/No
Creative Learners (generate creative ideas in a group).		12		100	yes
Enthusiastic thinking learners (listen to the in-formation actively, take part in the activity to		8		66.7	yes

practice the skill and participate in the group discussion).			
Self-confident thinkers (take control of their learning).	3	25	no
Organised thinking learners (solve different real-life problems).	8	66.7	yes
Truth-seeking learners (question the information obtained).	4	33.3	no
Inquisitive thinkers (inquire about the information obtained).	6	50	no
Diligent inquisitive learners (take the initiative in their learning).	7	58.3	no
Self-directed learners (take control of their learning).	6	50	no
Responsible person(s): the best person(s) to be responsible to ensure that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions. (n = 12; N = 12)	RESPONSES		CONSEN-SUS REACHED (≥ 75%)
	= n	f = %	Yes/No
Director of Postgraduate Center of Nursing Education for KAMC and KASCH.	8	66.7	
One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH.	7	58.3	
Clinical facilitators in all areas of nursing care for KAMC and KASCH.	7	58.3	YES
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.	9	75	

Time frame within which time the learning types must be shared for inclusion within the training program. (n = 12; N = 12).	RESPONSES		CONSEN-SUS REACHED (≥ 75%)
	= n	f = %	Yes/No
2 weeks before the due date for finalisation of the training program.	2	16.7	NO
1 month before the due date of the training program.	5	41.7	
3 months before the due date of the training program.	5	41.7	

6.4.5.1   Method 4.1: Incorporate different learner types during learning/training sessions (N = 12)

Panellists unanimously (100%; n = 12; N = 12) agreed that different learner types must be incorporated during learning and/or training sessions (see Table 6.11). In light of the result of the options for different learner types of nurses that should be incorporated during learning or training sessions, as illustrated in Table 6.11, 91.7% (n = 11; N = 12) of panellists selected creative learners, and 75% (n = 9; N = 12) selected organised thinking learners type of nurses. 100% consensus (n = 12; n = 12) was accomplished for those creative learners as one of the different learner types achieved by generating creative ideas in a group (see Table 6.11; method 4.1).

1. **Responsible person(s)** to ensure that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions (N = 12)

75% (n = 9; N = 12) of panellists indicated that one pain nurse specialist appointed by the nursing operations director in every facility would best incorporate different learner types during learning/training sessions (see Table 6.11; method 4.1).

2. Time frame required to ensure that the learning types are shared and included within the training program (**N = 12)**

The panellists indicated diverse opinions on the time frame by which the learning types must be included within the training program (see Table 6.11; method 4.1).

6.4.6 Action statement 5: Incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management (N = 12)

All panellists (f = 100%; n = 12; N = 12) agreed that different teaching approaches must be incorporated into the learning of pain management to accommodate diverse learners and facilitators.

Table 6.12: Action statement 5: Incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management (N = 12)

Action statement 5 (n = 12; N = 12)	Develop a pain management short course that motivates nurses to apply knowledge gained in the training program to practice.	RESPONSES			CONSENSUS REACHED (≥ 75%)
			n =	f = %	Yes/No
		Agree	12	100	YES
		Disagree	0	0	
		Agree	12	100	

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Method 5.1 (n = 12; N = 12)	Ensure the inclusion of different teaching approaches in the offering of the training program.	Disagree	0	0	YES
5.1.1 Different teaching approaches that should be utilised during pain management training.		RESPONSES			Agreement of (≥60%)
		= n	f = %		Yes/No
Writing reflective journals.		7	58.3		no
Conducting grand rounds.		7	58.3		no
Engaging in focus groups.		9	75		yes
Using role-play activities.		\8	66.7		yes
Responsible person(s) to ensure that teaching approaches are included during pain management training. **(**n = 12; N = 12)		RESPONSES			CONSENSUS REACHED (≥ 75%)
		= n	f = %		Yes/No
Director of Postgraduate Center of Nursing Education for KAMC and KASCH.		7	58.3		YES
One nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH.		8	66.7		
Clinical facilitators in all areas of nursing care for KAMC and KASCH.		6	50		

One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.	9	75	
Time frame within which time should different teaching approaches should be part of the teaching program before implementation. (n = 12; N = 12)	RESPONSES		CONSEN-SUS REACHED (≥ 75%)
	= n	f = %	Yes/No
2 weeks before the due date for finalisation of the training program.	1	8.3	
1 month before the due date of the training program.	6	50	NO
3 months before the due date of the training program.	5	41.7	

6.4.6.1   **Method 5.1: Ensure the inclusion of different teaching approaches in the offering of the training program (N = 12)**

A 100% consensus (n = 12; N = 12) was reached that different teaching approaches must be included in the training program (see Table 6.12). 75% (n = 9; N = 12) of panellists indicated that focus groups are a teaching approach that should be included in the training program (see Table 6.12).

a) **Responsible person(s)** to ensure that teaching approaches are included during pain management training **(N = 12)**

As illustrated in Table 6.12, 75% (n = 9; N = 12)) a consensus was reached that one pain nurse specialist, appointed by the clinical director of operations in every facility, will be the best responsible person to ensure that the different teaching approaches will be included in the offering of the training program (method 5.1).

b) Time frame within which different teaching approaches should be made part of the teaching program before implementation **(N = 12)**

Panellists did not reach a consensus on the time frame within which the different teaching approaches should be incorporated as part of the teaching program before implementation (see Table 6.12; method 5.1).

6.4.7 Action statement 6: Develop strategies to motivate nurses to participate in the short training program (N = 12)

Panellists were 100% (n = 12; N = 12) in agreement that strategies should be developed to motivate nurses to participate in the short training program to be included in the action plan (see Table 6.13).

Table 6.13: Action statement 6: Develop strategies to motivate nurses to participate in the short training program (N = 12)

Action statement 6 (n = 12; N = 12)	Develop strategies to motivate nurses to participate in the short training program.	RESPONSES			CONSENSUS REACHED (≥ 75%)
			= n	f = %	Yes/No
		Agree	12	100	YES
		Disagree	0	0	
6.1 The following are strategies that will motivate nurses to participate in the pain management training program.		RESPONSES			Agreement by **(≥60%)**
		= n	f = %		YES/NO
Conduct a situation analysis to assess the pain management needs of the nurses.		6	50		no
Involve nurses in the development of the content of the training program.		9	75		yes
Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.		10	83.3		Yes

Communicate the advantages of pain management competencies (on what platform can this be done).	8	66.7	yes
Create a supportive learning environment in nursing care areas.	8	66.7	yes
Responsible person(s) to develop the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas. **(**n = 12; N = 12**).**	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
Director of Postgraduate Center of Nursing Education for KAMC and KASCH.	8	66.7	
One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAMC and KASCH.	8	66.7	NO
Clinical facilitators in all areas of nursing care for KAMC and KASCH.	9	75	
One pain nurse specialist to be appointed by Clinical Directors of Nursing Operations in every facility.	10	83.3	
Time frame required to develop the strategies that will motivate nurses to participate in short pain management training program related to their nursing care areas.**(**n = 12; N = 12**)**	RESPONSES		CONSENSUS REACHED (≥ 75%)
	= n	f = %	YES/NO
2 weeks before the due date for the finalisation of the training program	3	25	YES
1 month before the training program starts	9	75	

As illustrated in Table 6.13, 83.3% (n-10; N = 12) of panellists indicated the importance of involving nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas as a strategy to motivate them, and 75% (n-9; N = 12) indicated that to involve nurses in the

development of the content of the training program (see Table 6.13; method 6.1) will be motivational.

a) **Responsible person(s)** to develop strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas (N = 12)

83.3% (n = 10; N = 12) of panellists indicated that one pain nurse specialist appointed by the clinical director of nursing operations in every facility, and 75% (n = 9; N = 12) preferred clinical facilitators in all areas of nursing care for KAMC and KASCH (see Table 6.13; strategies 6.1).

b) **Time frame required t**o develop the strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas (N = 12)

9 (f = 75%; N = 12) panellists agreed that one month before the training program starts would be the appropriate timeframe for the development of the strategies to motivate nurses to participate in the pain management training program related to their nursing care areas (see Table 6.13; method 6.1).

6.4.8 Action statement 7: Motivate nurses to apply the knowledge gained in the training program in practice (N = 12)

A consensus (f = 100%, n = 12; N = 12) was reached that the action to motivate nurses to apply the knowledge gained in the training program in practice be included in the action plan (see Table 6.14).

Table 6.14: **Action statement 7: Motivate nurses to apply the knowledge gained in the training program in practice (N = 12)**

		RESPONSES	CONSENSUS
Action statement 7			REACHED
(n = 12; N = 12)			(≥ 75%)

	Motivate nurses to apply the knowledge gained in the training program in practice.		= n	f = %	Yes/No
		Agree	12	100	YES
		Disagree	0	0	
7.1 Method: The following methods can be implemented to motivate nurses to apply their knowledge in practice.		RESPONSES			Agreement of (≥60%)
		= n		f = %	Yes/No
Provide nurses with a certificate to recognize their application of pain management knowledge in their respective nursing care areas.		8		66.7	yes
Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.		12		100	yes
Allow the nurses to take part in planning outcomes of a pain management training program.		8		66.7	yes
Support nurses' SMART goals and pain management learning.		9		75	yes
Support aspects that drive individual nurses to apply what they have learned about pain management.		9		75	yes
Assign grades for applying pain management knowledge in practice based on annual performance.		8		66.7	yes
Responsible person(s) to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice (n = 12; N = 12).		RESPONSES			CONSENSUS REACHED (≥ 75%)
		= n		f = %	Yes/No
Associate Executive Directors of Nursing for KAMC and KASCH.		4		33.3	
Clinical Directors of Nursing Operations for KAMC and KASCH.		9		75	
Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and KASCH.		5		41.7	NO

Nurse Managers in all nursing care areas for KAMC and KASCH.		11	91.7	
Director of Postgraduate Center of Nursing Education for KAMC and KASCH.		4	33.3	
One Nurse educator appointed by the Director of the Post-graduate Center of Nursing Education for KAMC and KASCH.		8	66.7	
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.		8	66.7	
Time frame required to provide the aspects for motivation to nurses to apply their knowledge in practice (n = 12; N = 12).		RESPONSES		CONSENSUS REACHED (≥ 75%)
		= n	f = %	Yes/No
Time frame required to provide the aspects for motivating nurses to apply their knowledge in practice (n = 12; N = 12)	1 week after the training program	2	16.7	NO
	1-3 months after the training program	5	41.7	
	4-6 months after the training program	6	50	
	7-9 months after the training program	0	0	

According to Table 6.14, all panellists unanimously agreed (100%; n = 12; N = 12) that nurses should be offered the opportunity to take on the role of pain management experts who are competent in their field. 75% (n = 9; N = 12) of panellists reached a consensus that supporting nurses' SMART goals and pain management learning, as well as supporting what motivates individual nurses to apply what they have learned about pain management, will be implemented to motivate nurses to apply their knowledge in practice.

a) **Responsible person(s)** to facilitate the implementation of methods to motivate nurses to apply their knowledge in practice (N = 12)

91.7% (n = 11; N = 12) of panellists indicated that the nurse managers in all nursing care areas for KAMC and KASCH, and 75% (n = 9; N = 12) of the clinical directors of nursing operations must be responsible for facilitating the aspect to motivate nurses to apply their knowledge in practice (see Table 6.14; method 7.1).

b) **Time frame required** to implement the methods to motivate nurses to apply their knowledge in practice (N = 12)

Panellists did not reach a consensus on the timeframe for implementing the aspects that motivate nurses to apply their knowledge in practice (see Table 6.14; method 7.1).

To develop a second draft of the action plan with an embedded validation tool, all the comments and suggestions received from the panellists were incorporated into the validation tool, along with all the items on which consensus was not reached in the first round. A recruitment letter (see Annexure 16) similar to the procedure described in 6.2.7 was utilised for the second round. All panellists from the first round were invited through the gatekeepers. The second round's findings are discussed considering the Google Forms analysis.

6.5 FINDINGS FROM THE SECOND ROUND

For round 2, the validation instrument has been amended as follows: All items where consensus had been reached were indicated as **"consensus reached"** within the validation instrument, as illustrated in Annexure 15. Panelists were requested to re-spond only to those items on which consensus was *not* reached.

To validate the online survey, the validation instrument was again loaded onto Google Forms, as was the case in Round 1. As outlined in Annexure 16, the recruitment letter to the gatekeepers was shared with 12 panellists with clear instructions on what would be expected in the second round.

In the second round of data collection, a 100% response rate was achieved, which is noteworthy considering that existing research suggests a significant likelihood of

experts withdrawing from the study (Keeney et al. 2011:29). Nevertheless, the absence of any panellists being lost in the second phase of the study ensured that this was not an issue in this study. During the second round, a consensus was reached on certain items, albeit not all, as seen in the tables below (see Annexure 17 for the full findings).

Note: <u>Only</u> the findings for action statements 1 to 7 about those aspects where consensus was <u>not reached</u> in round one are discussed in full in the below Tables 6.15 to 6.28 to prevent repetition of findings (see Annexure 17).

6.5.1 Action statement 1: Motivate nurses to further their studies (N = 12)

6.5.1.1 Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications (for method 1.1) (N = 12)

Table 6.15 (method 1.1) illustrates that consensus was not reached due to divergent perspectives on the person(s) responsible for developing a policy to motivate nurses to improve their nursing qualifications.

Table 6.15: Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications (N = 12)

Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH.	5	41.7	No
Clinical Directors of Nursing Operations for KAMC and KASCH.	4	33.3	
Director of Postgraduate Center of Nursing Education for KAMC and KASCH.	3	25	

6.5.1.2 Time frame required to present the policy and negotiate the implementation to the MNGHA) (N = 12)

As illustrated in Table 6.16 (method 1.1), panellists did not reach a consensus on the time frame within which the policy should presented and the implementation negotiated with the MNGHA.

Table 6.16: Time frame required to present the policy and negotiate the implementation to the MNGHA) (N = 12)

Time frame required to present the policy and negotiate the implementation to the Ministry of National Guard Health Affairs (MNGHA)	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
6 months	8	66.7	
9 months	4	33.3	No

6.5.1.3 Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications (for Method 1.3) (N = 12)

Table 6.17 (method 1.3) illustrates that the panellists did not reach a consensus as they reflected different views on who the responsible person(s) must be that should ensure the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications.

Table 6.17: **Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications (N = 12)**

Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	4	33.3	No
Nurse Managers in all KAMC and KASCH nursing care areas.	8	66.7	

6.5.1.4 **Time frame** required to include the policy in all hospitals' policies after approval of the action plan by MNGHA (for method 1.3) (N = 12)

Panellists reached a consensus (n = 9; f = 75%) that the policy must be included within three months in all the hospitals' policies after approval of the action plan by the Ministry of National Guard Health Affairs (see Table 6.18; method 1.3).

Table 6.18: **Time frame required to include the policy in all hospitals' policies after approval of the action plan by MNGHA (N = 12)**

	Responses	Consensus Reached

Time frame required to include the policy in all hospitals' policies after approval of the action plan by the Ministry of National Guard Health Affairs.			(≥ 75%)
	n =	f = %	Yes/No
1 month	3	25	
3 months	9	75	Yes

6.5.2 Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area (N = 12)

6.5.2.1 **Responsible person(s)** to ensure that an electronic format of pain assessment tools are available for inclusion in the electronic patient record system so that they can be accessible to the nursing team in every nursing care area (for method 2.1) (N = 12).

Seventy-five per cent (n = 9; N = 12) consensus was reached that one pain nurse specialist appointed by clinical directors of nursing operations in every facility for KAMC and KASCH must provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area (see Table 6.19; method 2.1).

Table 6.19: **Responsible person(s) to ensure that an electronic format of the pain assessment tools for inclusion in the electronic patient record system is accessible to the nursing team in every nursing care area (N = 12)**

Responsible person(s) to ensure that an electronic format of the pain assessment tools for inclusion in the electronic patient record system is	Responses	Consensus Reached

accessible to the nursing team in every nursing care area.			(≥ 75%)
	n =	f = %	Yes/No
Five nursing health informatics specialists appointed by Associate Directors of Nursing for KAMC and KASCH.	3	25	Yes
One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	9	75	

6.5.2.2 Time frame required to include the pain assessment tools in the electronic patient record system (Method 2.1) (N = 12)

As illustrated in Table 6.20, consensus was not reached in round 2 on the time frame within which the pain assessment tools should be available in the electronic patient record system.

Table 6.20: Time frame required to include the pain assessment tools in the electronic patient record system (N = 12)

Time frame required to include the pain assessment tools in the electronic patient record system.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No

1- 3 months	7	58.3	No
4- 6 months	5	41.7	

6.5.2.3 Responsible person(s) to involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments (for method 2.2) (N = 12)

Consensus was not reached about who should be responsible for involving the nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments (see Table 2.1).

Table 6.21: Responsible person(s) to involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments (N = 12)

Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Clinical Directors of Nursing Operations for KAMC and KASCH	6	50	No
Clinical facilitators in all KAMC and KASCH nursing care areas	6	50	

6.5.2.4 Time frame required to involve the nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments ((for Method 2.2) (N = 12)

Consensus was not reached on the time frame within which the nurse supervisors should be involved in providing pain management training and supervisory support to the nursing team on how to conduct pain assessment (see Table 6.22; method 2.2).

Table 6.22: Time frame required to involve the nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (N = 12)

Time frame required to involve the nurse supervisors with pain management to provide supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Every shift when the need arises	50	50	No
Every patient round when the need arises	50	50	

6.5.2.5 Responsible person(s) to ensure that internet-based resources are accessible to patient and family to provide support about pain management (for method 2.3) (N = 12)

75 % (n = 9; N = 12) of panellists indicated that nurse managers in all KAMC and KASCH nursing care areas would be the best persons to ensure that internet-based resources are accessible to patients and families to provide support about pain management (see Table 6.23; method 2.3).

Table 6.23: **Responsible person(s) to ensure that internet-based resources are accessible to patient and family to provide support about pain management (N = 12)**

Responsible person(s) to ensure internet-based resources are accessible to patients and family members to provide support about pain management	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Nurse Managers in all KAMC and KASCH nursing care areas	9	75	Yes
Charge nurses in all KAMC and KASCH nursing care areas	0	0	
Registered nurses in all KAMC and KASCH nursing care areas	3	25	

6.5.2.5   Responsible person(s) to ensure that internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management are made accessible to the nursing team in all nursing care areas (for method 2.4) (N = 12)

Consensus was not reached regarding who the responsible person(s) should be to ensure that internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management are made accessible to the nursing team in all nursing care areas (see Table 6.24; method 2.4).

Table 6.24 Responsible person(s) to ensure that internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management are made accessible to the nursing team in all nursing care areas (N = 12)

Responsible person(s) to ensure that internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management are made accessible to the nursing team in all nursing care areas	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH	5	41.7	No
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	7	58.3	

6.5.3. Action statement 3: Develop a practice-oriented content-specific short pain management training program (N = 12)

6.5.3.1 Time frame required to provide for inclusion of the specific oriented pain management training in the program (for Method 3.1) (N = 12)

83.3% (n = 10; N = 12) of panellists reached a consensus that the specific practice-oriented pain management training content should be included in the program three months before the due date of the training program (see Table 6.25; method 3.1).

Table 6.25: Time frame required to provide for inclusion of the specific oriented pain management training in the program (for method 3.1) (N = 12)

Time frame required to provide for the inclusion of the specific oriented pain management training in the program	Responses	Consensus Reached (≥ 75%)

	n =	f = %	Yes/No
1 month before the due date of the training program	2	16.7	
3 months before the due date of the training program	10	83.3	Yes

6.5.4 Action statement 4: Develop a pain management short program that accommodates all learning types (N = 12)

6.5.4.1 Time frame required to ensure that the learning types are shared and included within the training program (for method 4.1) (N = 12)

83.3% (n = 10; N = 12) of panellists reached a consensus that the appropriate time frame to ensure sharing and inclusion of the learning types within the training program must be three months before the due date of the training program (see Table 6.26; method 4.1).

Table 6.26: Time frame required to ensure that the learning types are shared and included within the training program (N = 12)

Time frame required to ensure that the learning types are shared and included within the training program	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No

1 month before the due date of the training program	2	16.7	Yes
3 months before the due date of the training program	10	83.3	

6.5.5 Action statement 5: Incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management (N = 12)

6.5.5.1 Time frame within which time should different teaching approaches be part of the teaching program before implementation (for method 5.1 (N = 12)

As illustrated in Table 6.27 (method 5.1), 75% (n = 9; N = 12) of panellists reached a consensus that different teaching approaches should be included as part of the teaching program three months before the due date of when the training program is to be implemented.

Table 6.27: Time frame within which time should different teaching approaches should be part of the teaching program before implementation (N = 12)

Time frame within which time should different teaching approaches be part of the teaching program before implementation. (n = 12; N = 12)	Responses	Consensus Reached (≥ 75%)

	n =	f = %	Yes/No
1 month before the due date of the training program	3	25	
3 months before the due date of the training program	9	75	Yes

6.5.6 Action statement 6: Develop strategies to motivate nurses to participate in the short training program (N = 12)

6.5.6.2 Responsible person(s) to develop strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas (for strategies 6.1) (N = 12)

A consensus of 75% (n = 9; N = 12) was reached that one pain nurse specialist appointed by the Clinical Directors of Nursing Operations in every facility will be the best person to take responsibility for developing strategies to motivate nurses to participate in the short pain management training program (see Table 6.28; strategies 6.1).

Table 6.28: Responsible person(s) to develop the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas (N = 12)

Responsible person(s) to be responsible for developing the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas.	Responses	Consensus Reached (≥ 75%)	
	n =	f = %	Yes/No

Clinical facilitators in all areas of nursing care for KAMC and KASCH.	3	25	Yes
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.	9	75	

6.5.7 Action statement 7: Motivate nurses to apply the knowledge gained in the training program in practice (N = 12)

6.5.7.1 Responsible person(s) to facilitate the implementation of methods to motivate nurses to apply their knowledge in practice (for method 7.1) (N = 12)

Table 6.29 (method 7.1) illustrates that 75% (n = 9; N = 12) of panellists agreed that directors of nursing operations for KAMC and KASCH must be responsible for facilitating the implementation of methods motivating nurses to apply their knowledge in practice.

Table 6.29: Responsible person(s) to facilitate the implementation of the methods to motivate nurses to apply their knowledge in practice (N = 12)

Responsible person(s) to facilitate the implementation of the methods to motivate nurses to apply their knowledge in practice.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No

Nurse Managers in all nursing care areas for KAMC and KASCH	3	25	Yes
Clinical Directors of Nursing Operations for KAMC and KASCH	9	75	

6.5.7.2   Time frame required to implement the methods to motivate nurses to apply their knowledge in practice (for method 7.1) (N = 12)

Consensus was not reached on the applicable time frame regarding the implementation of the suggested methods that will motivate nurses to apply their knowledge in practice (see Table 6.30; method 7.1).

Table 6.30:   Time frame required to implement the methods to motivate nurses to apply their knowledge in practice (N = 12)

Time frame required to implement the methods to motivate nurses to apply their knowledge in practice	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
1–3 months after the training program	6	50	No
4–6 months after the training program	6	50	

6.6 FINDINGS FROM ROUND THREE

6.6.1 Demographic characteristics

During the third round of data collection in the Delphi process, two out of the twelve panellists did not participate, resulting in a response rate of 83.3% (n = 10; N = 12). This size of 10 panel members was still acceptable, as suggested by Touma (2022: 750) that the size of ample usually varies from ten to eighteen experts. After comparing all the demographic information from the three rounds of data sets, it was clear that the two panellists lost in this round were both registered nurses from the Philipines, having Bachelor's degrees at the highest level of education. This is noteworthy, as Touma (2022:758) indicated that certain experts are likely to withdraw at some stage of the study. As seen by the tables below, a consensus was reached among the ten panel members on all items not reached during Rounds 1 and 2.

Note: <u>Only</u> the findings for action statements 1 to 7 of those aspects where consensus was <u>not reached</u> in Round 2 are discussed below in Tables 6.31 to 6.39 in full to eliminate the repetition of findings (see Annexure 21).

6.6.2 Action statement 1: Motivate nurses to further their studies (N = 10)

6.6.2.1 *Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications (for method 1.1) (N = 10)*

All agreed (f = 100%; n = 10; N = 10) that nursing policy committee representatives appointed by the associate executive committee directors of nursing for KAMC and KASCH will be suitable persons responsible for developing a policy intended at motivating nurses to improve their nursing qualifications (see Table 6.31, method 1.1).

Table 6.31: Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications (N = 10)

Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH.	10	100	Yes
Clinical Directors of Nursing Operations for KAMC and KASCH.	0	0	

6.6.2.2 *Time frame required to present the policy and negotiate for the implementation to the MNGHA (for method 1.2) (N = 10)*

The panellists reached a consensus (f = 90%; n = 9; N = 10) that the policy should be presented and the implementation negotiated to the Ministry of National Guard Health Affairs within six months (see Table 6.32; method 1.2).

Table 6.32: Time frame required to present the policy and negotiate for the implementation to the MNGHA (for method 1.2) (N = 10)

Time frame required to present the policy and negotiate for the implementation to the MNGHA	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
1. 6 months	9	90	Yes
2. 9 months	1	10	

6.6.2.4 Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications (for method 1.3) (N = 10)

As illustrated in Table 6.33 (method 1.2), the panellists reached a consensus that clinical directors of nursing operations in every facility for KAMC and KASCH must be the best responsible persons to incorporate the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications.

Table 6.33: Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications (N = 10)

Responsible person(s) to include the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications (n = 10; N = 10).	Responses	Consensus Reached (≥ 75%)

	n =	f = %	Yes/No
Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	9	90	Yes
Nurse Managers in all KAMC and KASCH nursing care areas.	1	10	

6.6.3 Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area (N = 10)

6.6.3.1 Time frame required to include the pain assessment tools in the electronic patient record system (for method 2.1) (N = 10)

90% (n = 9; N = 10) of panellists reached a consensus that the pain assessment tools should be incorporated into the electronic patient record system within 1-3 months after implementing the action plan (see Table 6.34; method 2.1).

Table 6.34: Time frame required to include the pain assessment tools in the electronic patient record system (N = 10)

Time frame required to include the pain assessment tools in the electronic patient record system	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No

1–3 months	9	90	Yes
4–6 months	1	10	

6.6.3.1 Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments (for method 2.2) (N = 10)

Consensus was reached (n = 9; N = 10) that clinical directors of nursing operations for KAMC and KASCH are suitable persons for involving the nurse supervisors with pain management training in providing post-pain management training and supervisory support to the nursing team on how to conduct pain assessments (see Table 6.35; method 2.2).

Table 6.35: Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments (N = 10)

Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Clinical Directors of Nursing Operations for KAMC and KASCH.	9	90	Yes

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| Clinical facilitators in all KAMC and KASCH nursing care areas. | 1 | 10 | |

6.6.3.2 Time frame required to involve the nurse supervisors to provide pain management training supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (for method 2.2) (N = 10)

Panellists all agreed (f = 100%; n = 10; N = 10) that the nurse supervisors should be involved in every shift when the need arises to provide pain management training and supervisory support to the nursing team on how to conduct pain assessment (see Table 6.36; method 2.2).

Table 6.36: **Time frame within which the nurse supervisors should be involved in providing pain management training supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (N = 10)**

Time frame required to involve the nurse supervisors to provide pain management training supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
Every shift, when the need arises.	10	100	Yes
Every patient round when the need arises.	0	0	

6.6.3.4 Responsible person(s) to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas (for method 2.4) (N = 10)

90% (n = 9; N = 10) of panellists reached a consensus that nursing health informatics appointed by associated directors of nursing for KAMC and KASCH will be the best responsible persons to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas (see Table 6.37; method 2.4).

Table 6.37: Responsible person(s) to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas (N = 10)

Responsible person(s): The best possible individual/individuals to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialise in pain management should be accessible to the nursing team in all nursing care areas (N = 10).	Responses		Consensus Reached (≥ 75%)
	f = %	Yes/No	f = %
Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH.	9	90	Yes

One pain nurse specialist is appointed by the Clinical Directors of Nursing Operations in every facility for KAMC and KASCH.	1	10	

6.6.4 Action statement 7: Motivate nurses to apply the knowledge gained in the training program in practice (N = 10)

6.6.4.1 Time frame required to implement the methods to motivate nurses to apply their knowledge in practice (N = 10)

As illustrated in Table 6.38 (method 7.1), 90% (n = 9; N = 10) consensus was reached that the methods to motivate nurses to apply their knowledge in practice must be in place within 1-3 months after the acceptance of the action plan.

Table 6.38: Time frame required to implement the methods to motivate nurses to apply their knowledge in practice (N = 10)

Time frame required to implement the methods to motivate nurses to apply their knowledge in practice.	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
1–3 months after the training program.	9	90	Yes
4–6 months after the training program.	1	10	

6.7   THE VALIDATED FINAL ACTION PLAN

In Phase 5 of this study, the panellists validated the draft action plan and, following three rounds of Delphi, reached a consensus on the action plan intended to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. Table 6.39 illustrates the final validated action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

Table 6.39:   The validated action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

Action statement	Methods	Responsible person(s)	Timeframe
1. Motivate nurses to further their studies.	**1.1** Develop a policy to motivate nurses to improve their nursing qualifications by including a certificate issued as an acknowledgement of nurses pursuing distance learning, one day off for attending pain management programs, monetary incentive after completion of a pain management program (degree or diploma) and after completion	Nursing policy committee representatives, appointed by the associate executive directors for KAMC and KASCH.	The policy to motivate nurses to improve their nursing qualifications must be developed and finalised **4-6 months after approval of the action plan** by the MNGHA.

	of distance learning programs, and offer free accommodation for the period of study leave		
	1.2 Present and negotiate for implementing the policy to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board.	Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH	The policy should be presented, and the implementation thereof negotiated with the Ministry of National Guard Health Affairs within **six months after approval of the action plan.**
	1.3 Include the policy as part of the policies of all hospitals.	Clinical directors of nursing operations in every facility for KAMC and KASCH	The policy should be included within **three months** after approval of the action plan by the Ministry of National Guard Health Affairs.

2. Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area.	**2.1** Include all pain assessment tools, including PQRST and CRIES, in an electronic patient record system so the nursing team can choose and access the most appropriate tool in all nursing care areas.	One pain nurse specialist appointed by clinical directors of nursing in every facility for KAMC and KASCH	The pain assessment tools should be included within **1–3 months** in the electronic patient record system after implementing the action plan in KAMC and KASCH.
	2.2 Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas.	Clinical Directors of Nursing Operations for KAMC and KASCH	Nurse supervisors must be available on **every shift** to provide pain management training and supervisory support to the nursing team (**when the need arises)** after approval of the action plan.
	2.3 Make all hospitals' internet-based resources, including websites, support groups, hotlines, and	Nurse Managers in all KAMC and KASCH nursing care areas.	The hospitals' internet-based resources must be made accessible to the patients

	peer support groups, accessible to patients and family members to obtain other support about pain management.		and family members to obtain other support about pain management, **24 hours per day and seven days a week, after approval of the action plan.**
	2.4 Make all hospitals' internet-based resources, including publications, electronic materials, and organizations that specialize in pain management, accessible to the nursing team in all nursing care areas that consist of pain toolkits, videos on pain management, and clinical updates.	Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH.	The hospitals' internet-based resources, publications, electronic materials, and organizations that specialize in pain management should be continuously available.
3. Develop a practice-oriented content-specific short pain	a. Include practice-oriented pain management training content, inclusive of *the	One pain nurse specialist appointed by Clinical Directors of Nursing	The practice-oriented content-specific short pain

manage-ment train-ing program.	methods to promptly assess a patient's pain in all nursing ar-eas; * The selection of appropriate pain in-tervention strategies based on the pain levels assessed; *the advantages and disadvantages of all pain management scales and *assess-ment of patients' pain in all nursing care areas.	Operations in every facility.	management training program must be available three **months before the due date for the of-fering of the training pro-gram.**
4. Develop a pain manage-ment short program that accom-modates all learning types.	a. Accommodate differ-ent learning types and learning styles nurses used to achieve them when developing the train-ing program, specifi-cally *creative learners (generate creative ideas in a group), *enthusiastic thinking learners (listen to the information actively,	One pain nurse specialist ap-pointed by Clini-cal Directors of Nursing Opera-tions in every facility	Advertise the in-clusiveness of the different learner types to be accommo-dated in the short program **three months before the due date of the offering of the training pro-gram.**

	take part in the activity to practice the skill and participate in the group discussion), as well as * organised thinking learners (solve different real-life problems). .		
5. Incorporate different teaching approaches to accommodate diverse learners and facilitators in pain management training.	a. Ensure the inclusion of different teaching approaches, including focus groups and role play, in the offering of the training program.	One pain nurse specialist appointed by Clinical Directors of Nursing operations in every facility.	Different teaching approaches must be offered in the teaching program and must be available to learners and facilitators three months before the due date of when the training program is to be implemented.
6. Develop strategies to motivate nurses to participate in the short	a. Involve nurses in the *development of the content, goals, and outcomes of the training program, *communicate the	One pain nurse specialist appointed by Clinical Directors of nursing	Nurses must be invited to participate in the development of the content, goals,

training program.	advantages of pain management competencies (the platform that can be utilized), and b. *create a supportive learning environment.	operations in every facility.	and outcomes of the training **one month before the training program is to be offered.**
7. Motivate nurses to apply the knowledge gained in the training program in practice.	a. *Offer nurses the opportunity to take on the role of a pain management expert who is competent in the field, *support nurses' SMART goals and pain management learning, *support what drives individual nurses to apply what they have learned about pain management * and assign grades for applying pain management knowledge in practice based on annual performance	Nurse Managers in all nursing care areas for KAMC and KASCH are the best persons to be responsible for facilitating the implementation of the aspect to motivate nurses to apply their knowledge in practice.	The implementation of methods to motivate nurses to apply their knowledge in practice must be within **1-3 months after the training program.**

6.8   CONCLUSION

This chapter discussed the research methodology and designs used in Phase 5. The embedded draft action plan was validated by the panel members of clinical facilitators and professional registered nurses in three e-Delphi rounds to reach a consensus on every action statement, the method to be employed to achieve the objectives of the specific actions, the responsible person(s), and the timeframes within which the actions/objectives should be reached. The final action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals was validated.

Chapter 7 describes the study's conclusion, final recommendations, and limitations.

CHAPTER SEVEN: CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

7.1 INTRODUCTION

Chapter 7 presents the conclusions derived from the study findings, as well as the recommendations and limitations of the study.

Table 7.1 Organisation and structure of the study

Organisation and structure of the study		
Chapter number	Chapter outline	Chapter content
Chapter 1	Overview of the study	Contains the introduction, background of the study, the problem statement, research purpose and objectives, research question, theoretical framework, key theoretical and operational concepts, the research design and methodology and ethical considerations.
Chapter 2	Literature review	Consists of the literature review related to: Systemic Model of Transfer of Learning by Donovan and Darcy, Transfer of learning and Pain management and tools.
Chapter 3	Research design and methodology	Illuminates the overarching research design. Phase 1, 2 and 3 (quantitative phases): Methodology and Data gathering
Chapter 4	Data analysis and interpretation	Presents the data analysis and interpretation of the findings from Phases 1 to 3.
Chapter 5	Phase 4	Included a description of Phase 4 of the study: Literature review on action plan development

		Development of the draft action plan.
Chapter 6	Phase 5	Outlines and describes Phase 5 of the study (qualitative phase): Methodology Validation of the action plan: The action plan.
Chapter 7	Conclusion, recommendations, and limitations	Conclusions, recommendations and limitations of the study.

7.2 CONCLUSIONS

This explanatory sequential mixed-method study aimed to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. The action plan (see Table 6.39) was validated by a panel of registered nurses and clinical facilitators identified as knowledgeable about pain management. The study was conducted over five phases:

1. Phase 1 aimed to identify and describe the resources available to conduct pain assessments.
2. Phase 2 aimed to identify and describe the nurses' characteristics and learning styles that enhance the transfer of pain management competencies.
3. Phase 3 explored the teaching approaches employed by the clinical facilitators during nurses' pain management education, describing the learning content regarding pain assessment and management and the climate of transfer of learning within the hospitals' nursing care areas.

4. Phase 4 combined the data from Phases 1, 2, and 3 and utilised a literature review to develop an action plan to enhance the transfer of learning of pain management competencies.

5. Phase 5 involved the validation of the developed action plan to enhance the transfer of learning of pain management competencies of nurses by a purposive selected panel of clinical facilitators and nurses for implementation using the e-Delphi technique by seeking to reach a consensus of 75% on action statements, methods, the responsible person(s) as well as the time frame included in the action plan.

To ensure that the finalisation of the action plan and its implementation achieved the study's objectives, the research supervisor ensured that it was completed under those objectives. Throughout the following sub-sections, the study's objectives are described as follows:

7.2.1 Objective 1: Identify and describe the resources available to conduct pain assessments.

The data from Phases 1 and 3 revealed the resources (pain assessment guides) available to nurses and clinical facilitators to conduct pain assessments in the wards. The available resources were in nine categories, namely:

(1) The WILDA was most accessed by nurses as well as clinical facilitators (see Tables 4.5 and 4.17), as supported by Fink and Gallagher (2019:231), who indicate WILDA as the most commonly used **pain assessment guide tool**.

(2) The Numeric Rating Scale (NRS) emerged as the most accessible **pain rating assessment tool for patients who can self-report their pain i**n alignment with what is indicated in the literature (Kim & Jung 2020:2951).

(3) Nurses reported the FLACC pain scale to be primarily available as the **pain rating assessment tool for patients who cannot self-report their pain.**

(4) Nurse respondents agreed with the nurse facilitator respondents as they furnished similar information that the CNPI (Checklist for Non-verbal Pain Behavior)

was most available to **assess the pain of elderly patients with dementia or cognitive impairment.**

(5) **Nurse respondents** indicated **that** the most **available human resources** for pain assessment were the registered nurses with pain management training in the wards. In contrast, most nurse facilitators indicated that pain nurses working in acute or chronic pain services were the most available human resource.

(6) **Other types of support** assisting with pain assessments were indicated by both groups of respondents as "other patients" or "other people with pain" (see Tables 4.10 and 4.22).

(7) Both the clinical nurse facilitators and nurses indicated that e-learning modules and organisations specialising in pain management were commonly available as pain management resources listed in the **publications and electronic resources** to conduct pain assessments.

(8) Nurse and clinical nurse facilitators indicated that **organisations that specialise in pain management** were available, including research, treatment, clinical practice, and education to support pain strategies (see Tables 4.12 and 4.24).

(9) Nurses and nurse facilitators confirmed that policies for pain management were available for utilisation (see Tables 4.12 and 4.25).

7.2.2 Objective 2: Identify and describe nurses' characteristics and learning styles that enhance the transfer of pain management competencies.

Phase 2 of the study revealed the nurses' three top-rated characteristics and learning styles that can enhance the transfer of learning of pain management competencies of nurses in the context of two Saudi Arabian teaching hospitals.

- Participants identified the characteristics as being able to apply what was learned before (see Figure 4.4) as the ability to think rationally to assess a patient experiencing pain, concentrate well during pain management learning /training, and reassess pain after interventions.

- As to describing what type of learners they were (see Figure 4.5), they indicated themselves as curious thinking, self-directed, and hardworking inquiring learners.
- Participants indicated that what motivated them to participate in the pain management training program (see Figure 4.6) was to learn pain management skills relevant to their working areas, attend pain management training programs, and gain new knowledge about pain management.
- What primarily motivated them to apply knowledge in practice (see Figure 4.7) was the desire to perform a pain management skill successfully, increase their work performance in pain management, and receive positive feedback about their performance.

In Section 4.3.3, Figure 4.8, the preferred learning styles of nurses were identified to enhance the transfer of learning of pain management competencies. The data analysis, as portrayed in Figure 4.8, uncovered nurses' five top-rated preferred learning styles that would enhance their transfer of learning as (1) watching an activity such as a demonstration, (2) reading through the information, (3) listening to information such as during a lecture, (4) solving different pain management real-life problems and (5) participating in group discussions (see Tables 5.2 and 5.3). The learning styles identified were (1) creative learners who can generate creative ideas in a group, (2) enthusiastic thinkers who listen to the information actively, take part in the activity, practice a skill and participate in the group discussions as well as (3) organised thinkers who solve different real-life problems (see Table 6.37)

7.2.3   Objective 3: Explore the teaching approaches employed by the clinical facilitators during pain management education of nurses.

The study explored the teaching approaches employed by the clinical facilitators during the pain management education of nurses. The most commonly suggested teaching strategies were pain management e-learning modules followed by an assessment of prior knowledge of pain (see Table 4.26). The last choice of teaching approach (see Table 4.26) mentioned was writing reflective journals for sharing pain management experiences. Nursing grand rounds to provide pain management training, focus

groups to help nurses manage pain, and role-play activities to teach pain management were to be addressed in the action plan to facilitate implementation.

7.2.4 Objective 4: Describe the learning content regarding pain assessment and management.

Participants agreed that a short pain management training program must be content-specific and practical. The most relevant content-specific practice-oriented information that should be included must be (1) methods to assess a patient's pain in all nursing areas promptly, (2) the selection of appropriate pain intervention strategies based on the pain levels assessed, (3) the advantages and disadvantages of all pain management scales.

7.2.5 Objective 5: Describe the transfer of learning climate within the hospitals' nursing care areas.

The elements of the transfer of learning climate for nursing care in two Saudi Arabian hospitals identified by clinical facilitators are presented in Table 4.40. They include: (1) nursing leadership values the learning needs, (2) a pain management orientation program was available, (3) clinical facilitators offer constructive feedback to registered nurses, (4) there is continuous education by the nurse managers, (5) trained nurse preceptors orientate newly employed registered nurses, (6) there is support by nurse managers, (7) there are dedicated clinical facilities for pain management available, (8) registered nurses are allowed to apply pain management freely, (9) there is peer support of registered nurses, and (10) there is support from nursing supervisors.

7.2.6 Objective 6: Develop and validat an action plan that can be implemented to enhance the transfer of learning of pain management competencies of nurses.

The validated and approved action plan to enhance the transfer of learning of pain management competencies of nurses is illustrated in Table 6.37. The specific action statements addressed are: (1) motivate nurses to further their studies, (2) make appropriate and relevant pain management tools accessible to the nursing team in all clinical areas, (3) develop a practice-oriented content-specific short pain management

training program, (4) develop a pain management short program that accommodates all learning types, (5) incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management, (6) develop strategies to motivate nurses to participate in the short training program, (7) and motivate nurses to apply the knowledge gained in the training program in practice.

7.3   RECOMMENDATIONS

The improvement of pain management skills relies highly on the implementation of the developed action plan. The plan is suitable to be implemented in the two teaching hospitals that participated in the study due to the buy-in of the stakeholders who participated in its development. In other similar contexts, the action plan can be adopted or adapted depending on the similarity of context. The action plan must be systematically shared and fully implemented by adopting the realisation process recommended by Schaeffer, Gille and Hurrelmann (2020:12), which consists of the three steps of diffusion, dissemination, and implementation.

7.3.1   First step: Diffusion

Diverse channels must be utilized to make this action plan known and available to others (Schaeffer et al. 2020:12). The final examined thesis will be electronically published in the Unisa repository for other scholars to access. The complete research report will be electronically shared with the KAIMRC IRB for archiving and information sharing.

7.3.2   Second step: Dissemination

The action plan must be shared and thus disseminated to specific target groups who will be important for facilitating the implementation, as indicated by Schaeffer et al. (2020:12). Due to the active participation of the stakeholders within the two teaching hospitals, already taking ownership, the validated plan will be electronically shared with the nursing education centres of the two hospitals as well as pain management nursing teams within the two hospitals. An appointment will be secured with the associate nursing directors of the two hospitals and the director of nursing education in

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KAMC and KASCH nursing administration conference rooms to share the action plan, explain the development thereof, and motivate implementation.

The following are recommended to motivate the implementation of the action plan. The action plan and how to facilitate implementation will be presented at the monthly leadership forums of both hospitals, as all nurses in leadership roles attend the forums. The action plan will be shared in the form of an abstract with the members of the editorial board of the two hospitals responsible for promoting awareness of hospital-wide nurses' abstracts on quality key performance indicators, as well as research projects conducted by the two hospitals to motivate and promote nurses' studies. An abstract will be submitted to national pain management conferences, such as the Saudi Pain Society, and to international pain management conferences, such as IASP, for possible inclusion in the conference program where the study findings will be presented.

The process followed to develop the action plan and the action plan itself will be published in national and international peer-reviewed journals such as the *Journal of Pain Management Nursing*.

7.3.3   The third step: collaborative Implementation

Collaborative implementation implies working with other stakeholders who can distribute the action plan and recommend implementation as suggested by Schaeffer et al. (2020:12). An appointment will be secured with the two study hospitals' nursing clinical governance and policy committees. They will be requested via e-mail to secure a meeting to share the action plan and motivate for its implementation. A presentation outlining the action plan will be delivered to the director of nursing education centres at both hospitals to facilitate its implementation.

7.3.4   Recommendations for further research

A follow-up study can be conducted to describe and assess the challenges and opportunities for implementing the action plan in all teaching hospitals. In another study, the action plan can be tested for applicability and adaptability in other contexts.

Furthermore, further research is recommended to assess the effect of the implementation of the action plan on the pain management skills of nurses in specific settings.

7.4   LIMITATIONS

The study was conducted in two teaching hospitals in Riyadh, Kingdom of Saudi Arabia. It is possible that the study would have revealed different findings if other teaching hospitals were included. However, a proportionate stratum was used to ensure representativeness. However, It is possible for any hospital or entity that wants to enhance the transfer of learning of pain management skills to implement (test) the action plan and adopt or adapt it according to their unique context.

7.5   SUMMARY

The transfer of learning pain management skills remains relevant to all nurses taking care of patients in healthcare facilities. Effective pain management influences patient satisfaction and patient outcomes. Therefore, this study aimed to develop an action plan to improve the transfer of learning of pain management competencies among nurses to improve patient satisfaction and outcomes. Table 6.37 illustrates the action plan developed and validated in the context of two Saudi Arabian teaching hospitals, which was presented and recommended for implementation.

"Knowing Is not enough; we must apply. Wishing is not enough; we must do."

(Quote from Johann Wolfgang von Goethe).

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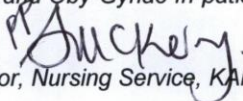
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ANNEXURES

ANNEXURE 1: Recruitment letter: Request of names list of registered nurses and clinical resource nurses from Nurse Managers (gatekeepers) KAMC

Ministry of National Guard Health Affairs
King Abdulaziz Medical City in Riyadh
Nursing Services

RYD-18-6020-67517

Date: <u>G</u>   08   April 2018
     <u>H</u>   22   Rajab 1439

Annexure 1

		Memorandum: Assistance with recruitment of participants

TO : **Nurse Managers**
(Medical, Surgical, Cardiac and Oby-Gynae In-patients Wards at KAMC-R)

Thru : **Ms. Nabeeha Tashkandi**
Associate Executive Director, Nursing Service, KAMC-R   11 APR 2018

           Ms. Andrea Doherty
           Director of Nursing Oncology

FROM : **Litaba Efraim Kolobe**
CRN, Pain Management Team, Badge Number 47295

SUBJECT : **Request for a list of Registered Nurses and Clinical Resource Nurses working in the wards at King Abdulaziz Medical City, Riyadh**

Study Title : **An action Plan to enhance Transfer of Learning of Pain Management Competencies of nurses of Saudi Arabian teaching hospitals**

My name is Litaba Efraim Kolobe and I am a registered Doctoral student at the University of South Africa. The aim of my study is to develop an action plan to enhance transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

I already received approval from Research Ethics Committee of the Department of Health Studies, University of South Africa as well as an ethics approval certificate from King Abdullah International Medical Research Center (KAIMRC), Institutional Review Board (IRB) and Nursing Service Research Committee.

In order for me to collect data, your assistance to inform volunteer nurses to partake in the study will be appreciated. Will you please send the attached recruitment letter and a list to provide names of all Registered Nurses and Clinical Resource Nurses interested in research and who meet the following inclusion/eligibility criteria:-

1. Nurses who attended at least one pain management workshop within the past 3 years.
2. Nurses who attended ward in-service trainings about pain management the past 12 months.
3. Participants willing and comfortable to be interviewed in English.
4. Clinical facilitators (clinical resource nurses) who educates nurses about pain management in those nursing care divisions mentioned above.

I will appreciate the list of names and contact details from those who volunteer to participate to enable me to meet them, do a selection and then I will provide the selected ones with the questionnaire that they need to be complete. They will be asked to post the completed questionnaires in an envelope that will be provided for this purpose.

I appreciate your time and willingness to assist.
Yours Sincerely
Litaba Efraim Kolobe

ANNEXURE 2: Recruitment letter: Request of names list of registered nurses and clinical resource nurses from Nurse Managers (gatekeepers) KASCH

Ministry of National Guard Health Affairs
King Abdulaziz Medical City in Riyadh
Nursing Services

Date: <u>G</u> 08 April 2018   **Annexure 2**
        <u>H</u>   22 Rajab 1439

Memorandum: Assistance with recruitment of participants

TO   :   **Nurse Managers**
                          (Pediatrics and Adult In-patients Wards at KASCH)

Thru   :   **Ms. Angela Caswell**
                          Associate Executive Director, Nursing Service, KASCH-R

                          Ms. Andrea Doherty
                          Director of Nursing Oncology

FROM   :   **Litaba Efraim Kolobe**
                          CRN, Pain Management Team, Badge Number 47295

SUBJECT   :   **Request for a list of Registered Nurses and Clinical Resource Nurses working in the wards at King Abdullah Specialist Children Hospital, Riyadh**

Study Title   :   **An action Plan to enhance Transfer of Learning of Pain Management Competencies of Nurses in Saudi Arabian Teaching Hospitals**

My name is Litaba Efraim Kolobe and I am a registered Doctoral student at the University of South Africa. The aim of my study is to develop an action plan to enhance transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

I already received approval from Research Ethics Committee of the Department of Health Studies, University of South Africa as well as an ethics approval certificate from King Abdullah International Medical Research Center (KAIMRC), Institutional Review Board (IRB) and Nursing Service Research Committee.

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I will appreciate the list of names and contact details from those who volunteer to participate to enable me to meet them, do a selection and then I will provide the selected ones with the questionnaire that they need to be complete. They will be asked to post the completed questionnaires in a envelope that will be provided for this purpose.

I appreciate your time and willingness to assist.

Yours Sincerely
Litaba Efraim Kolobe

ANNEXURE 3: Information letter and consent form

Annexure 3

P.O.BOX 22490
Riyadh
11426
03 December 2019

Dear Colleague

My name is Litaba Efraim Kolobe and I am a registered doctoral student at the University of South Africa, The title of my intended study is **'An action to enhance transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals'**. The aim of my study is to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

I hereby request you to volunteer to participate in the study. I intend to share the action plan with the nursing administrations, Center of nursing education and the pain management team to enhance the implementation thereof and to contribute to positive patient outcomes.

If you agree to participate it will be expected from you to complete a questionnaire anonymously. This questionnaire will only take 10 to 20 minutes of your time. Your name will not be on the questionnaire and the information that you provide will be kept confidential and no data will be linked to any individual. You can complete the questionnaire in your private time and put it back in the sealed box within one week after receiving it.

You will not be remunerated as participation is voluntary. The action plan however will benefit other students and patients in future. The results might be published, but your personal information and inputs will not be able to be tracked back to you.

You may withdraw from the study at any time, without fear of being victimised. If you agree to participate please communicate your willingness to your nurse manager so that your contact details can be shared with me. I will then provide you with the questionnaire to complete. After completion please place the questionnaire into the specifically marked survey box that will be placed in your ward's main nurses' station.

Please feel free to contact me at (Mobile +966503920421 or Tel. Ext 12864) if you have any questions regarding this research study.

Yours Sincerely

Litaba Efraim Kolobe

Primary Investigator	**Litaba Efraim Kolobe**		Supervisor	**Prof. Lizeth Roets**
Tel :2520088 Ext 12864 Pager : 3613			Tel: 012 429 2226	
E-mail : kolobel@ngha.med.sa			Email: roestl@unisa.ac.za	

P.O.BOX 22490

Riyadh

11426

03 December 2019

Dear Colleague

My name is Litaba Efraim Kolobe and I am a registered doctoral student at the University of South Africa, The title of my intended study is **'An action to enhance transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals'**. The aim of my study is to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals.

I hereby request you to volunteer to participate in the study. I intend to share the action plan with the nursing administrations, Center of nursing education and the pain management team to enhance the implementation thereof and to contribute to positive patient outcomes.

If you agree to participate it will be expected from you to complete a questionnaire anonymously. This questionnaire will only take 10 to 20 minutes of your time. Your name will not be on the questionnaire and the information that you provide will be kept confidential and no data will be linked to any individual. You can complete the questionnaire in your private time and put it back in the sealed box within one week after receiving it.

You will not be remunerated as participation is voluntary. The action plan however will benefit other students and patients in future. The results might be published, but your personal information and inputs will not be able to be tracked back to you.

You may withdraw from the study at any time, without fear of being victimised. If you agree to participate please communicate your willingness to your nurse manager so that your contact details can be shared with me. I will then provide you with the

questionnaire to complete. After completion please place the questionnaire into the specifically marked survey box that will be placed in your ward's main nurses' station.

Please feel free to contact me at (Mobile +966503920421 or Tel. Ext 12864) if you have any questions regarding this research study.

Yours Sincerely

Litaba Efraim Kolobe

Primary Investi-gator	**Litaba Efraim Kolobe**
Tel :2520088 Ext 12864 Pager : 3613 E-mail : kolobel@ngha.med.sa	

Supervisor	**Prof. Lizeth Roets**
Tel: 012 429 2226 Email: roestl@unisa.ac.za	

CONSENT FORM

Title: AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN TEACHING HOSPITALS

Principal investigator: **Litaba Efraim Kolobe**

I,...the undersigned, agree to participate in the above-mentioned research study. I confirm that I received a letter that confirms that I can withdraw at any stage without penalty. I am aware that

- I will not be paid for my participation, and if I feel uncomfortable in any way during the completion of a questionnaire, I have the right to decline to answer any further questions.
- Participation involves completing the questionnaire.
- The researcher will not identify me by name in any of the reports and that my confidentiality as a participant in the study will remain secured.
- All materials containing identifying information will be destroyed once the completed study is accepted.

I have read and understood the information provided to me and had all my questions answered to my satisfaction, and I voluntarily agree to participate in the study.

If I have any questions about the research, I will contact the person mentioned below:

_____   _____   _____
Participant's Name Participant's Signature   Date

_____   _____   _____
Witness Name Witness Signature   Date

ANNEXURE 4 : Questionnaire 1: Phase 1 (professional nurses) Questionnaire: Resources available to conduct a pain assessment

Dear Registered Nurse

Thank you for your willingness to voluntary participate in the research.

It is essential to complete the questionnaire as honest as possible. Please indicate your answer with a tick (✓) in the appropriate box OR by answering the questions in the spaces provided:

Example

I like apples

Yes	No✓

SECTION A: Biographical information

Please answer the following questions by placing a tick (✓) in the appropriate box or by answering the questions in the spaces provided.

1. What is your gender?

Male...................... **1**

Female................. **2**

2. What is your age?

[In complete years (e.g. 24)].............................. **1**

3. To which nationality do you belong? ....

4. What is your highest education qualification?

Master degree.......................... **1**

Bachelor degree....................... | 2 |

Diploma.................................. | 3 |

Other.. Please specify................ | 4 | | 5 |

5. In which of the following nursing care areas do you work? | 5 |

    Cardiac ward.................................. | 1 |

    Oby-gynae ward.............................. | 2 |

    Medical ward.................................. | 3 |

    Paediatric ward............................... | 4 |

    Surgical ward.................................. | 5 | | 6 |

SECTION B: RESOURCES AVAILABLE TO DO PAIN ASSESSMENT

Please answer all the questions. Please choose "Yes" **or "No"** as your response to ALL statements below that describes your choice with a tick **(✓)**.

Item No	Item content	Yes	No	For office use

1	The systematic pain assessment guide tools for pain history taking included below are available in your context to conduct pain assessments:			
1.1	**QUEST** (**q**uestion the child, uses pain rating tools, **e**valuates behaviour, **s**ensitise parents, and take ac-tion) approach is available to assess pain.	Yes	No	
1.2	**WILDA** (**w**ords to describe pain, **i**ntensity, **l**ocation, **d**uration, and **a**ggravating or **a**lleviating factors) ap-proach is available to assess pain.	Yes	No	
1.3	**PQRST** (**p**rovoking/**p**alliation factors, **q**uality of pain, **r**egion of pain, **s**everity and timing) approach is available to assess pain.	Yes	No	
1.4	**OPQRSTUV** (**o**nset of pain, **p**rovoking/**p**alliating, **q**uality, **r**egion/**r**adiation of pain, **s**everity of pain, **t**iming/**t**reatment, **u**nderstanding/impact on you and **v**alues) approach is available to assess pain.	Yes	No	
1.5	**COLDSPA** (**c**haracter, **o**nset, **l**ocation, **d**uration, **se**-verity, **p**attern and **a**ssociated factors) approach is available to assess pain	Yes	No	
2	Pain rating assessment tools of patients who can self-report their pain included below are available in your context to rate pain during pain assessments:			7-11

2.1	The **Wong-Baker FACES** pain scale is available to rate pain in children who can report their pain.	Yes	No	
2.2	The **Numeric Rating Scale** (NRS) is available to rate pain in children and adults who can report their pain.	Yes	No	
2.3	The **Verbal Analogue Scale** (VAS) is available to rate pain in adults who can report their pain.	Yes	No	
2.4	The **Verbal Descriptor Scale** (VDS) is available to rate pain in adults who can report their pain.	Yes	No	
2.5	The **Brief Pain Inventory** (BPI) is a questionnaire available to assess pain in cancer patients.	Yes	No	
3	**Pain rating assessment tools of patients who cannot self-report their pain included below are available in your context to rate pain during pain assessments:**			12-16
3.1	A **CRIES** (Crying, Required oxygen, Increased vital signs, Expressions, Sleeplessness) pain scale is available to rate pain in premature and neonates during pain assessments.	Yes	No	
3.2	The **Neonatal Pain, Agitation and Sedation Scale** (N-PASS), is available to rate pain in premature and neonates during pain assessments.	Yes	No	

3.3	The **Neonatal Infant Pain Scale** (NIPS) pain scale is available to rate pain in premature and neonates during pain assessments.	Yes	No	
3.4	A **FLACC** (Faces, Legs, Activity, Crying, and Consolability) pain scale is available to rate pain for patients who cannot verbalise their pain during pain assessments.	Yes	No	
3.5	The **COMFORT-Behaviour pain scale** (COMFORT-B) is available to rate pain for patients unable to verbalise their pain during pain assessments.	Yes	No	
3.6	The **Critical Care Pain Observational Tool** (CPOT) is available to asses and manage pain in adult non-conscious, critically-ill ventilated or non-ventilated patients in intensive care unit	Yes	No	
3.7	The Behavioural Pain Scale (BPS) is available for assessing pain in uncommunicative, critically-ill, sedated and intubated patients in intensive care units.	Yes	No	
4	**Pain rating assessment tools for elderly patients with dementia or cognitive impairment included below are available in your context to rate pain during pain assessment:**			17-23
4.1	The **Abbey Pain Scale** (ABBEY) is available to measure acute, chronic and acute-on chronic pain intensity in patients with late-stage dementia.	Yes	No	

			Yes	No	
4.2	The **Checklist on Nonverbal Pain Indicators** (CNPI) is available to measure pain behaviours in cognitively impaired older adults.		Yes	No	
4.3	The **Pain Assessment in Advanced Dementia Scale** (PAINAD) is available to assess pain in patients with advanced moderate to severe dementia.		Yes	No	
4.4	The **Non-communicative Patient's Assessment Instrument** (NOPPAN) pain scale is available to assess pain in demented and cognitively impaired patients.		Yes	No	
5	**Human resources included below are available in your context to conduct pain assessments:**				24-27
5.1	Competent registered nurse who previously received pain management training.		Yes	No	
5.2	Clinical facilitators.		Yes	No	
5.3	Pain nurses working in acute or chronic pain services		Yes	No	
5.4	Pain nurse specialists.		Yes	No	

5.5	Nurse educators.	Yes	No	
5.6	Pain management physicians (such as acute pain physician, chronic pain physician)	Yes	No	
5.7	Ward nurse managers who received pain management training used to conduct pain assessment.	Yes	No	
5.8	Nurse supervisors who received pain management training.	Yes	No	
6	**Patient support as a resource included below are available in your context to conduct pain assessments:**			28-35
6.1	Patients or (other people or patients with pain).	Yes	No	
6.2	Pain management support groups.	Yes	No	
6.3	Patient pain management websites.	Yes	No	
6.4	Patient pain management hotlines.	Yes	No	

7	**Publications and electronic resources available in your context to conduct pain assessments:**			36-39
7.1	Clinical updates or journals maybe resources used to conduct pain assessment.	Yes	No	
7.2	Videos on pain management.	Yes	No	
7.3	E-newsletters.	Yes	No	
7.4	Fact sheets.	Yes	No	
7.5	E-learning modules.	Yes	No	
7.6	Pain toolkit.	Yes	No	
7.7	Printed reference books.	Yes	No	

7.8	Electronic flow sheets.	Yes	No	
7.9	Best clinical practice guidelines about pain assessment.	Yes	No	
8	**Organisations** that specialise with pain research, treatment, clinical practice and education (such as Saudi Pain Society, World Health Organisation, and International Association Study for Pain).	Yes	No	
9	Policies.	Yes	No	
				40-50

Would you like to add any comments?

....
....
....
....
....
....
....

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

ANNEXURE 5 : Questionnaire 2: Phase 2 (professional nurses)

Questionnaire : Nurses' characteristics and learning styles seen to enhance transfer of pain management compétencies.

Dear **Registered Nurse.**

Thank you for your willingness to voluntary participate in the research.

It is essential to complete the questionnaire as honest as possible. Please indicate your answer with a tick (✓) in the appropriate box, circle or in the spaces provided:

SECTION A : Biographical information

Please answer the following questions by placing a tick (✓) in appropriate box or by answering the questions in the spaces provided.

1. What is your gender?	<u>For office use</u>

Male...................... | 1 |

Female................... | 2 |

2. What is your age?

[In complete years (e.g. 24)].............................. | 1 |

For office use boxes: 1, 2, 3, 4

3. To which nationality do you belong? ....

4. What is your highest education qualification?

Master degree.......................... | 1 |

Bachelor degree....................... | 2 |

Diploma.................................. | **3** |

Other... Please specify.................. | **4** | | **5** |

5. In which of the following nursing care areas do you work? | **5** |

Cardiac ward.................................... | **1** |

Oby-gynae ward................................... | **2** |

Medical ward.................................... | **3** |

Paediatric ward............................... | **4** |

Surgical ward.................................... | **5** | | 6 |

SECTION B: CHARACTERISTICS SEENTO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES

Item	Item Content	For Office Use
Q1	**How do you apply what you have learned?** Rate yourself on a scale from **1 (**this does not describe me at all) to **10** (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

1.1	I remember the pain management information from past experience.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.2	I learn during pain management learning/training sessions.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.3	I concentrate well during pain management learning/training sessions.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.4	I understand the content of information taught during pain management learning/training sessions.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.5	I choose an appropriate pain intervention strategy for every individual patient's pain level.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.6	I think rationally to assess a patient experiencing pain.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.7	I perform an accurate pain assessment.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.8	I assess pain on time.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.9	I reassess pain after interventions.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1.10	I apply knowledge by orientating new colleagues on how to assess and manage pain.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

	Please choose from **High to Low** <u>**ONLY 3 (three**</u>) statements from <u>**above questions 1.1 to 1.10**</u> that **best describe you:** Please write only the statement **question number** in the **box below**: 	1st		
		2nd		
		3rd		
				7-13
Q 2	**How does the following describe you as a learner?** Rate yourself on a scale from **1 (**this does not describe me at all) to **10**(this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩		
2.1	Self-directed learner.(Learner taking charge of his/her learning)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.2	Inquisitive thinking learner.(Learner who is inclined to ask questions or eager for knowledge)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

530

2.3	Curious thinking learner.(Learner having desire to learn or know more about something)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.4	Enthusiastic thinking learner.(Learner showing interest or excitement about learning and doing something)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.5	Truth seeking learner.(Learner who ask challenging questions or ask truth, reasons and evidence about something he/she is learning)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.6	Organised thinking learner.(Learner who is able to think carefully to plan about something to learn or do)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.7	Hard-working in enquiring learner.(Leaner putting efforts in doing a lot of work to know about something)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.8	Self-confidence thinking learner. (Leaner who belief in oneself and know about own ability to learn and do something)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2.9	Creative learner. (Learner having courage to try to learn new things, feeling to produce ideas, like to be the first do something and open to share his/her experience to others)	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

	Please choose from **High to Low ONLY 3 (three)** statements from **above questions 2.1 to 2.9** that **best describe you:** Please write only the statement **question number** in the in the **box below**: 	
		14-25
Q3	**How does the following describe how you are motivated to learn?** Rate yourself on a scale from **1 (**this does not describe me at all) to **10** (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3.1	Attending pain management training programs motivates me to learn.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3.2	The ability to take initiative without assistance of others motivates me to learn	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3.3	Learning of pain management skills relevant to my working area motivates me to learn	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3.4	Gaining new knowledge about pain management motivates me to learn	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

Box below:

1st	
2nd	
3rd	

3.5	Knowing the desired goals for learning pain management motivates me to learn	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3.6	My own goals about knowing pain management motivates me to learn	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
	Please choose from **High to Low ONLY 3 (three)** statements from **above questions 3.1 to 3.6** that **best describe you:** Please write only the statement **question number** in the **box below**: 	1st	
2nd	
3rd			
		26-34
Q4	**How does the following describe how you are motivated to apply in practise what you have learned?** Rate yourself on a scale from **1 (**this does not describe me at all) to **10** (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

4.1	The desire to successfully perform a pain management skill.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
4.2	The aim to increase my work performance about pain management.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
4.3	Receiving positive feedback about my performance.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
4.4	Taking part in planning outcomes of a pain management training program.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
4.5	The intention to function as a competent expert nurse in pain management skills.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

Please choose from **High to Low ONLY 3 (three)** statements from **above questions 4.1 to 4.5** that **best describe you:** Please write only the statement **question number** in the **box below**:

1st	
2nd	
3rd	

35-43

534

SECTION C: LEARING STYLES SEEN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES

Item No	Item Content	For office use
	How does the following describe your learning styles? Rate yourself on a scale from **1 (**this does not describe me at all) to **10** (this describes me perfectly). ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
1	By reading through the information. ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
2	By watching the activity such as a demonstration. ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
3	By listening to the information such as during a lecture. ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
4	By participating in the group discussion. ①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	

5	By generating creative ideas in a group.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
6	By recording the lectures.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
7	By connecting the information I already know to new information.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
8	By taking control of my own learning.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
9	By writing down the information.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
10	By questioning the information that I have obtained.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
11	By personally taking part in the activity to practice the skill.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
12	By learning from the internet.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
13	In a silent environment.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
14	By solving different pain management real life problems.	①--②--③--④--⑤--⑥--⑦--⑧--⑨--⑩	
	Please choose from **High to Low ONLY 3 (three)** statements from **above items 1 to 14** that **best describe you:** Please write only the statement **question number** in the **box below**: 1st		

		2nd			
		3rd			
					44-60

Would you like to add any comments?

....

....

....

....

....

....

....

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

ANNEXURE 6a: UINISA Ethical approval

UNISA | university of south africa

RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

6 December 2017

Dear Kolobe Litaba Efraim

| **Decision: Ethics Approval** |

HSHDC/798/2017

Kolobe Litaba Efraim

Student No.: 3664-008-5
Supervisor: Prof L Roets
Qualification: PhD
Joint Supervisor:

Name: Kolobe Litaba Efraim

Proposal: An action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted from 6 December 2017 to 6 December 2022

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on, 6 December 2017

The proposed research may now commence with the proviso that:

1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

30 June 2023

Dear Mr Kolobe Litaba Efraim

NHREC Registration # :
Rec-240816-052
CREC Reference # :
36640085_CREC_CHS_2023

Decision:
Ethics Approval from 30 June 2023
to 30 June 2024

Researcher(s): Name: Mr. K. L. Efraim
Contact details: 36640085@mylife.unisa.ac.za
Supervisor(s): Name: Prof L. Roets
Contact details: roetsl@unisa.ac.za

Title: AN ACTION PLAN TO ENHANCE THE TRANSFER OF LEARNING OF PAIN
MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN TEACHING
HOSPITALS
Degree Purpose: PhD

Thank you for the application for research ethics clearance by the Unisa College of
Human Science Ethics Committee. Ethics approval is granted for one year.

The *negligible risk application was reviewed by* College of Human Sciences Research Ethics
Committee, in compliance with the Unisa Policy on Research Ethics and the Standard
Operating Procedure on Research Ethics Risk Assessment.
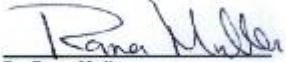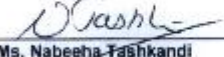
The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles
   expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant
   to the ethicality of the study should be communicated in writing to the College Ethics Review
   Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out
   in the approved application.

ANNEXURE 7a: Nursing Services Permission to conduct research

Kingdom of Saudi Arabia

Ministry of National Guard - Health Affairs

المملكة العربية السعودية

وزارة الحرس الوطني - الشؤون الصحية

Registered Date : 20-Feb-2018
NURSING-ADMINISTRATION

RYD-18-6020-34307

NURSING SERVICES
Center of Nursing Education and Clinical Practice
Ref. No. RM/2018/02/18

Date: 18 February 2018 (G)
05 Jumada al-Alkhirah 1439(H)

Permission to conduct nursing research at KAMC-R, Nursing Services

Applicant Details:	Mr. Efraim Kolobe Litaba, CRN Pain Management, Nursing Services KASCH, MNGHA
Title of proposed research study:	An action plan to enhance transfer of learning of Pain Management competencies of nurses of Saudi Arabian teaching hospitals.

Subsequent to screening review by the Nursing Services Research Committee (NSRC), permission in principle is granted for you to conduct your nursing research study at KAMC-R Nursing Services **pending scientific and ethical approval from KAIMRC Research office that is required <u>before</u> you commence data collection.** Kindly submit the research project yourself directly to the KAIMRC Research office with this permission letter.

Best wishes for successful completion.

Permission recommended by:

Dr. Rana Mulla
Chairman, Nursing Services Research Committee
Director, Nursing Education & Clinical Practice

Date: 20 Feb 18

Permission granted by:

Ms. Nabeeha Tashkandi
Associate Executive Director
Nursing Services. KAMC-R

Date: 2 1 FEB 2018

cc. Dr. Majed A Jeraisy, Chairman, Research Office KAIMRC (Memo only)

RM/SL/Jan 2018 /Permission to conduct nursing research at KAMC-R, Nursing Services – Template 9 (without feedback)

P.O. Box 22490, Riyadh 11426
Tel. 8011111
Telex : 403450 NGRMED SJ
KFH - MATERIALS 14574 (05/96) (ORACLE 29795)
HA Printing Press 17 / 197

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تلكس ، ٤-٣٤٥٠

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ANNEXURE 7b:IRB approval SP 18/036/R

Kingdom of Saudi Arabia

Ministry of National Guard - Health Affairs

المملكة العربية السعودية

وزارة الحرس الوطني - الشؤون الصحية

King Abdullah International Medical Research Center
(KAIMRC)

☎ (84) 94458 ✉ 1515 📠 94466 📠 irb@ngha.med.sg

IRB NCBE Registration No.:
H-01-R-005

IRB Office Memo Ref.No. IRBC/0801/18 E-CTS Ref. No. RYD-18-419812-49484

Study Number: **SP18/036/R**
Study Title: **An Action Plan to Enhance Transfer of Learning of Pain Management Competencies of Nurses of Saudi Arabian Teaching Hospitals**
Study Sponsor: **Non Grant**
IRB Approval Date: **20 March 2018**
IRB Review Type: ■ **Expedited Review** □ **Full Board**
Study site(s): **Central Region**

Dear **Dr. Nasser Tawfeeq**
Consultant, Department of Anesthesia
Ministry of National Guard - Health Affairs

Sub-investigator: Kolobe Lilaba Efraim.

After reviewing your submitted research proposal/protocol and related documents, the IRB has APPROVED the submission.

The approval includes the following related documents:

Document/Title	Version	Date
Research Proposal	01	20 Mar 2018
Questionnaires – Annexure 5 and 8	01	20 Mar 2018
Cross-Sectional Informed Consent Form	01	20 Mar 2018

The approval of the research study is valid for **one year** from the above approval to expiration date.

Terms of Approval:

· **Annual Reports:** An Annual report must be submitted for approval to avoid termination/suspension of your research.

· **Financial report:** If your study is funded project, details financial report should be submitted with the scientific report.

· **Final Report:** After completion of the study, a final report must be forwarded to the IRB.

· **Retention of original data:** The PI is responsible for the storage and retention of original data pertaining to the project for a minimum of five years.

· **Reporting of adverse events or unanticipated problems:** The PI is responsible to report any serious or unexpected adverse events or unanticipated problems, which could involve a risk to participants or others.

· **Biological samples:** No biological samples to be shipped out of the Kingdom of Saudi Arabia without prior IRB approval.

· **Participant incentives:** No financial compensation or gifts to be given to participants without prior IRB approval.

· **Storage of biological samples:** All biological samples collected for the purpose of this research must be stored in the KAIMRC related repository.

2 5 MAR 2018

Dr. Abdallah Adlan
Chairman, Institutional Review Board (IRB)
Ministry of National Guard - Health Affairs

AA/GA/cod

Kingdom of Saudi Arabia
Ministry of National Guard - Health Affairs

المملكة العربية السعودية
وزارة الحرس الوطني - الشئون الصحية

King Abdullah International Medical Research Center
(KAIMRC)

☎ (64) 94466   ✉ 1515   🖨 84466   🖳 irb@ngha.med.sa

IRB Office   Memo Ref.no. IRB/1552/23

E-CTS Ref. No.   RYD-23-7810-94444

Date: (G) 27 JUNE 2023
(H) 07 Thu Alhijjah 1444

To: **DR. NASSER TAWFEEQ**
Principal Investigator – **SP18/036/R**
Consultant, Department of Anesthesia
Ministry of National Guard Health Affairs

From: **PROF. HAMDAN AL JAHDALI**
Chairman, Institutional Review Board (IRB)
Ministry of National Guard Health Affairs

2 7 JUN 2023

Subject: **RESEARCH PROTOCOL: SP18/036/R- AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES OF SAUDI ARABIAN TEACHING HOSPITALS**

This is to acknowledge receipt of your memorandum on **June 15, 2023** via E-CTS# RYD-23-7810-94444, regarding the **request for extension** of the above-mentioned research project.

Kindly be informed that your request for **IRB extension has been approved** for **six (6) months** and it will expire on **DECEMBER 27, 2023**.

IRB office expects a final report when the project concludes.

Thank you.

Best regards,

H /82

P.O. Box 22490, Riyadh 11426
Tel. 801 1111
Telex :403450 NGHMED SJ
(ORACLE 29789)
IA. Printing Press 17 / 197

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تلكس : ٤٠٣٤٥٠

ANNEXURE 7d:IRB 6 Months SP 18/036/R

King Abdullah International Medical Research Center (KAIMRC)

☎ (041 94456   📠 1515   94488   🌐 irb@ngha.med.sa

IRB Office   Memo Ref.no. IRB/2967/23   E-CTS Ref. no. [QR] RYD-23-7810-94444

Date: (G) 30 NOVEMBER 2023
(H) 16 Jumada I 1445

To: **DR. NASSER TAWFEEQ**
Principal Investigator, SP18/036/R
Section Head Obstetrics & Gynecology Anesthesia
Department of Anesthesia, KAMC
Ministry of National Guard Health Affairs

From: **PROF. HAMDAN AL JAHDALI**
Chairman, Institutional Review Board (IRB)
Ministry of National Guard Health Affairs

3 0 NOV 2023

Subject: **RESEARCH PROTOCOL: SP18/036/R - An Action Plan to Enhance Transfer of Learning of Pain Management Competencies of Nurses of Saudi Arabian Teaching Hospitals**

This is to acknowledge receipt of your memorandum on **05 NOVEMBER 2023** via ECTSA, **RYD-23-7810-94444**, regarding the **request for extension** of the above-mentioned study.

Kindly be informed that your request for **IRB extension** has been **approved** for **six (6) months only** and it will expire on **May 30, 2024.**

IRB office expects a final report when the project concludes.

Best regards,

P.O. Box 22490, Riyadh 11426
Tel: 8011111
Telex - 403403 NGHMED SJ
(ORACLE 23 chu)
US Printing Press 72 107

من - بريد 22490 الرياض 11426
تلفون - 8011111
تلكس - 403403

ANNEXURE 8: Questionnaire 3: Phase 3 (clinical facilitators)

Questionnaire: Resources available to conduct a pain assessment

Dear **Clinical Facilitator ('Clinical Resource Nurse)**

Thank you for your willingness to voluntary participate in the research.

It is essential to complete the questionnaire as honest as possible. Please indicate your answer with a tick (✓) in the appropriate box OR by answering the questions in the spaces provided:

Example

I like apples

| Yes | No✓ |

SECTION A: Biographical information

Please answer the following questions by placing a tick (✓) in appropriate box or by answering the questions in the spaces provided.

1. What is your gender?

For office use

Male...................... | 1 |

| 1 |

Female.................. | 2 |

| 3 |

2. What is your age?

[In complete years (e.g. 24)]............................ | 1 |

| 2 |

3. To which nationality do you belong? ....

| 4 |

4. What is your highest education qualification?

Master degree.......................... | 1 |

Bachelor degree...................... | 2 |

Diploma.................................. | 3 |

Other.. Please specify................ | 4 | | 5 |

5. In which of the following nursing care areas do you work? | 5 |

Cardiac ward.................................... | 1 |

Oby-gynae ward.................................. | 2 |

Medical ward.................................... | 3 |

Paediatric ward.............................. | 4 |

Surgical ward.................................... | 5 | | 6 |

SECTION B: RESOURCES AVAILABLE TO DO PAIN ASSESSMENT

Please answer all the questions. Please choose "Yes" **or "No"** as your response to ALL statements below that describes your choice with a tick **(✓)**.

Item No	Item content	Yes	No	For office use
1	**The systematic pain assessment guide tools for pain history taking included below are available in your context to conduct pain assessments:**			
1.1	**QUEST** (**q**uestion the child, uses pain rating tools, **e**valuates behaviour, **s**ensitise parents, and take ac-tion) approach is available to assess pain.	Yes	No	
1.2	**WILDA** (**w**ords to describe pain, **i**ntensity, **l**ocation, **d**uration, and **a**ggravating or **a**lleviating factors) ap-proach is available to assess pain.	Yes	No	
1.3	**PQRST** (**p**rovoking/**p**alliation factors, **q**uality of pain, **r**egion of pain, **s**everity and timing) approach is available to assess pain.	Yes	No	
1.4	**OPQRSTUV** (**o**nset of pain, **p**rovoking/**p**alliating, **q**uality, **r**egion/**r**adiation of pain, **s**everity of pain, **t**iming/**t**reatment, **u**nderstanding/impact on you and **v**alues) approach is available to assess pain.	Yes	No	

1.5	**COLDSPA** (**c**haracter, **o**nset, **l**ocation, **d**uration, **se**verity, **p**attern and **a**ssociated factors) approach is available to assess pain	Yes	No	
2	**Pain rating assessment tools of patients who can self-report their pain included below are available in your context to rate pain during pain assessments:**			7-11
2.1	The **Wong-Baker FACES** pain scale is used to rate pain children who can report their pain.	Yes	No	
2.2	The **Numeric Rating Scale** (NRS) is available to rate pain in children and adults who can report their pain.	Yes	No	
2.3	The **Verbal Analogue Scale** (VAS) is available to rate pain in adults who can report their pain.	Yes	No	
2.4	The **Verbal Descriptor Scale** (VDS) is available to rate pain in adults who can report their pain.	Yes	No	
2.5	The **Brief Pain Inventory** (BPI) is a questionnaire used to assess pain in cancer patients.	Yes	No	
3	**Pain rating assessment tools of patients who cannot self-report their pain included below are available in your context to rate pain during pain assessments:**			12-16

3.1	A **CRIES** (Crying, Required oxygen, Increased vital signs, Expressions, Sleeplessness) pain scale is available to rate pain in premature and neonates during pain assessments.	Yes	No	
3.2	The **Neonatal Pain, Agitation and Sedation Scale** (N-PASS), is available to rate pain in premature and neonates during pain assessments.	Yes	No	
3.3	The **Neonatal Infant Pain Scale** (NIPS) pain scale is available to rate pain in premature and neonates during pain assessments.	Yes	No	
3.4	A**FLACC** (Faces, Legs, Activity, Crying, and Con-solability) pain scale is available to rate pain for pa-tients who cannot verbalise their pain during pain assessments.	Yes	No	
3.5	The **COMFORT-Behaviour pain scale** (COM-FORT-B) is available to rate pain for patients unable to verbalise their pain during pain assessments.	Yes	No	
3.6	The **Critical Care Pain Observational Tool** (CPOT) is available to asses and manage pain in adult non-conscious, critically-ill ventilated or non-ventilated patients in intensive care unit	Yes	No	
3.7	The Behavioural Pain Scale (BPS) is available for assessing pain in uncommunicative, critically-ill, se-dated and intubated patients in intensive care units.	Yes	No	

4	**Pain rating assessment tools for elderly patients with dementia or cognitive impairment included below are available in your context to rate pain during pain assessment:**			17-23
4.1	The **Abbey Pain Scal**e (ABBEY) is available to measure acute, chronic and acute-on chronic pain intensity in patients with late-stage dementia.	Yes	No	
4.2	The **Checklist on Nonverbal Pain Indicators** (CNPI) is available to measure pain behaviours in cognitively impaired older adults.	Yes	No	
4.3	The **Pain Assessment in Advanced Dementia Scale** (PAINAD) is available to assess pain in patients with advanced moderate to severe dementia.	Yes	No	
4.4	The **Non-communicative Patient's Assessment Instrument** (NOPPAN) pain scale is available to assess pain in demented and cognitively impaired patients.	Yes	No	
5	**Human resources included below are available in your context to conduct pain assessments:**			24-27
5.1	Competent registered nurse who previously received pain management training.	Yes	No	
5.2	Clinical facilitators.	Yes	No	

5.3	Pain nurses working in acute or chronic pain services	Yes	No	
5.4	Pain nurse specialists.	Yes	No	
5.5	Nurse educators.	Yes	No	
5.6	Pain management physicians (such as acute pain physician, chronic pain physician)	Yes	No	
5.7	Ward nurse managers who received pain management training used to conduct pain assessment.	Yes	No	
5.8	Nurse supervisors who received pain management training.	Yes	No	
6	**Patient support as a resource included below are available in your context to conduct pain assessments:**			28-35
6.1	Patients or (other people or patients with pain).	Yes	No	
6.2	Pain management support groups.	Yes	No	

6.3	Patient pain management websites.	Yes	No	
6.4	Patient pain management hotlines.	Yes	No	
7	**Publications and electronic resources available in your context to conduct pain assessments:**			36-39
7.1	Clinical updates or journals maybe resources used to conduct pain assessment.	Yes	No	
7.2	Videos on pain management.	Yes	No	
7.3	E-newsletters.	Yes	No	
7.4	Fact sheets.	Yes	No	
7.5	E-learning modules.	Yes	No	

7.6	Pain toolkit.	Yes	No	
7.7	Printed reference books.	Yes	No	
7.8	Electronic flow sheets.	Yes	No	
7.9	Best clinical practice guidelines about pain assessment.	Yes	No	
8	**Organisations** that specialise with pain research, treatment, clinical practice and education (such as Saudi Pain Society, World Health Organisation, and International Association Study for Pain).	Yes	No	
9	Policies.	Yes	No	
				40-50

SECTION C: TEACHING APPROACHES EMPLOYED DURING PAIN MANAGEMENT EDUCATION OF NURSES

Please answer all the questions. Please choose "Yes" **or "No"** as your response to ALL statements below that describes your choice with a tick **(✓)**.

Item No	Item content	Yes	No	For office use
	Teaching approaches included below are employed in your context during pain education of nurses:			
1	Assessing prior knowledge about pain management as a base to each individual teaching lesson.	Yes	No	
2	Asking nurses to write a reflective journal about pain management.	Yes	No	
3	Allowing debriefing sessions about pain management after assessing individual nurse's learning need.	Yes	No	
4	Using role modelling to learn about pain assessment.	Yes	No	
5	Using case studies to learn how to manage pain.	Yes	No	

6	Using available pain management e-learning modules.	Yes	No	
7	Engaging nurses in focus groups to learn about pain management.	Yes	No	
8	Forming a discussion group to learn about pain management.	Yes	No	
9	Engaging hands-on activities to learn about pain assessment.	Yes	No	
10	Using role play activities to learn about pain assessment.	Yes	No	
11	Using practice simulations to assess registered nurses' skills about pain assessment.	Yes	No	
12	Using nursing grand rounds to learn directly at patient bedside how to assess and manage individual patient's pain.	Yes	No	
13	Preventing interruptions during teaching sessions.	Yes	No	

Item No	Item content	Yes	No	For office use
14	Providing assignment about pain management to apply it at work.	Yes	No	
				51-64

SECTION D: LEARNING CONTENT REGARDING PAIN ASSESSMENT AND MANAGEMENT

Please answer all the questions. Please choose "Yes" **or "No"** as your response to ALL statements below that describes your choice with a tick **(✓)**.

Item No	Item content	Yes	No	For office use
	ASSESSMENT			
1	**The physiologic pain indicators stated below are included as learning content in your context regarding pain assessment:**			
1.1	An increase in blood pressure.	Yes	No	
1.2	An increase in heart rate.	Yes	No	

1.3	Increased respiratory rate.	Yes	No	
2	**The behavioural indicators of pain stated below are included as learning content in your context regarding pain assessment:**			65-67
2.1	Facial expressions (such as frowning or grimacing).	Yes	No	
2.2	Verbal responses (such as crying).	Yes	No	
2.3	Body movements (such as kicking).	Yes	No	
3	Pain screening is included for registered nurses' knowledge of pain assessment.	Yes	No	
4	Obtaining the patient's self report of pain is included for registered nurses' knowledge of pain assessment.	Yes	No	
5	Obtaining a pain reported by parents or family members of the patient (proxy-reported) is included for registered nurses' knowledge of pain assessment.	Yes	No	

6	**The systematic pain guide tool for pain history taking (namely WILDA) described below is included as learning content in your context regarding pain assessment:**			68-73
6.1	Asking the patient to describe type of pain in his/her own words.	Yes	No	
6.2	Asking about **i**ntensity of pain using pain scale	Yes	No	
6.3	Asking about **l**ocation of pain.	Yes	No	
6.4	Asking about **d**uration of pain.	Yes	No	
6.5	Asking about **a**ggravating or alleviating factors.	Yes	No	
7	**The valid and reliable pain rating scales listed below are included as learning content in your context regarding pain assessment:**			74-78
7.1	Using of Numeric Rating scale.	Yes	No	
7.2	Using of Wong-Baker Faces scale.	Yes	No	

7.3	Using of CRIES (crying, required oxygen, increased vital signs, expressions and sleeplessness) scale.	Yes	No	
7.4	Using of FLACC (Face, Legs, Activity, Crying and Consolability) pain scale.	Yes	No	
				79-82
	NURSING DIAGNOSES			
8	**Acute types of pain stated below are included as learning content in your context regarding pain assessment and management:**			
8.1	Labour pain (related to uterine muscles contractions)	Yes	No	
8.2	Procedural pain (related to insertion of intravenous cannula).	Yes	No	
8.3	Post-procedural pain (related to post peg tube insertion).	Yes	No	
8.4	Acute post-operative pain (related to tissue injury secondary to surgical intervention).	Yes	No	

8.5	Acute disease process (related to Sickle Cell anaemia disease, abdominal pain due to intestinal cramps)	Yes	No	
8.6	Traumatic pain (related to tissue injuries, shifting bone fragments)	Yes	No	
9	**Chronic types of pain stated below are included as learning content in your context regarding pain assessment and management:**			83-88
9.1	Cancer pain (related to tumour pressing on bones, nerves or organs).	Yes	No	
9.2	Neuropathic pain (related to nerve damage or nerve degeneration).	Yes	No	
9.3	Headache (related to migraine)	Yes	No	
9.4	Low back pain (related to sciatic nerve compression).	Yes	No	
10	**Factors related to impact of pain on activities of daily livings (ADLs) and quality of life (QOL) stated below are included as learning content in your context regarding pain assessment and management:**			89-93

10.1	The **physical impact of pain** (indicated by muscle stiffness, difficulty in walking, fatigue, difficulty to sit or stand)	Yes	No	
10.2	The **psychological impact of pain**(indicated by depression, emotional stress, anxiety, agitation, frustration)	Yes	No	
10.3	The **social impact of pain** (indicated by strained social relationships, frequent absenteeism)	Yes	No	
				94-96
	PLANNING			
11	**Strategies to plan for pain management stated below are included as learning content in your context regarding pain management:**			
11.1	Developing the nursing care plan that addresses patient's pain management needs.	Yes	No	
11.2	Identifying patient's pain management goals.	Yes	No	
11.3	Setting measurable goals to achieve a satisfactory level of pain along with the patient.	Yes	No	

11.4	Setting expected outcomes to enhance patient's comfort.	Yes	No	
				97-100
IMPLEMENTATION				
12	**Pain intervention strategies implemented below are included as learning content in your context regarding pain assessment and management:**			
12.1	Non-pharmacological pain interventions.	Yes	No	
12.2	Pharmacological pain interventions.	Yes	No	
12.3	Patient and family education about pain management.	Yes	No	
				101-103
EVALUATION				
13	**Nursing actions for pain management evaluation stated below are included as learning content in your context regarding pain assessment and management:**			

13.1	Assessing the effectiveness of pain nursing care interventions implemented	Yes	No	
13.2	Monitoring of adverse effects related to pain medications administered to the patient	Yes	No	
13.3	Constant pain reassessment after interventions of pain (toward achieving desired pain management goals and outcomes).	Yes	No	
				104-106

SECTION E: TRANSFER OF LEARNING CLIMATE WITHIN THE HOSPITAL NURSING CARE

Please answer all the questions, choose "Yes" or "No" by marking the statement that describe your choice with a tick (✓).

Item No	Item content	Yes	No	For office use
1	The nursing leadership value the learning needs of the professional nurses by considering pain management training program.	Yes	No	

2	The ward nurse managers value continuous education to the registered nurses about pain management by allowing unit in-service trainings.	Yes	No	
3	Pain management orientation program is available to support newly employed registered nurses to acquaint them to pain management practice of the hospital.	Yes	No	
4	The dedicated clinical facilities for pain assessment and management are available in the working areas for registered nurses to learn about pain management.	Yes	No	
5	Nurse preceptors who did not attend preceptor training program also effectively orientate newly employed registered nurses regarding pain management.	Yes	No	
6	Nurse preceptors who attended preceptor training program effectively orientate newly employed registered nurses regarding pain management.	Yes	No	
7	Registered nurses support each other to apply what they learnt about pain management.	Yes	No	
8	Nursing supervisors support registered nurses when they need it bout pain management.	Yes	No	

9	Ward nurse managers support registered nurses to apply what they learnt about pain management.	Yes	No	
10	Clinical facilitators offer constructive feedback to registered nurses regarding their performance about pain management.	Yes	No	
11	Registered nurses are given freedom to apply their pain management skills in their working areas.	Yes	No	
				107-117

Would you like to add any comments?

....
....
....
....
....
....
....

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.

ANNEXURE 9: INVITATION FOR PARTICIPATION IN THE PRE-TEST FOR THE VALIDATION OF THE ACTION PLAN

Dear Panellist,

My name is Litaba Efraim Kolobe, and I am currently a doctoral student at the University of South Africa. Currently, I am conducting a study entitled **'AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN HOSPITALS'.** The purpose of my study is to develop an action plan for enhancing the transfer of pain management competencies among nurses in Saudi Arabian teaching hospitals. Ethics approval to conduct this study was obtained from the Research Ethics Committee, College of Human Sciences, UNISA with reference number REC-012714-039.

You are cordially invited to participate in the pre-testing of the developed action plan with the embedded validation tool Kindly assist **me in cross-checking that the questions asked, the items included, and the instructions are properly understood and will be correctly interpreted. Please provide me with comments regarding any issues you may encounter while completing the instrument.** Your participation will remain anonymous and confidential. It will not be possible to share your individual contributions with other panellists as all information will be received via the software program in bulk.

To determine whether the action plan is appropriate for implementation, you should evaluate each statement contained in the plan, but also assess the appropriateness of the validation instrument. If you agree to take part in the pre-test, kindly click on the link via the **Google Forms software** provided at the end of the recruitment letter. Instructions are provided as you go along completing the pre-test.

Your participation is voluntary, and you may choose not to take part, but just ignoring the invitation and not clicking on the link to access the action plan and validation tool. You still have a chance to withdraw even after completing the validation tool, by not submitting your answers. If you agree to participate, you will be required to complete and comment on this anonymous online action plan

and validation instrument. By clicking the link provided below, you will be able to access the instrument. It will only take 30 to 45 minutes for you to complete this questionnaire. I would greatly appreciate it if you would complete the questionnaire at your convenience by opening the link below.

https://docs.google.com/forms/d/1OJManLl1eKrqfL8v4Jp34Ojj4fHKtHiizGAe_hBOZ8c/edit

Because participation in this pre-test is voluntary, you will not be remunerated. Your inputs will however be beneficial to allow me to adapt the action plan and instruments before sharing them with the stakeholders for final inputs. The results of the study may be published, but your personal information and inputs will not be able to be traced back to you.

Remember to click the submit button after you have completed the instrument.

Please feel free to contact me by at Mobile +966503920421 or by email at kolobe66@yahoo.com if you have any questions regarding this research study. You may also contact my research supervisor Prof Lizeth Roets at +27 12 429 2226 or roetsl@unisa.ac.za. If you have any other concerns, you may also contact the College research ethics committee at Khankb@unisa.ac.za, the chairperson of the committee.

Your contribution and time is appreciated.

Kind regards.

Litaba Efraim Kolobe

ANNEXURE 10: RECRUITMENT LETTER: ROUND 1 (e-Delphi)

Dear Panellist,

My name is Litaba Efraim Kolobe, and I am currently a doctoral student at the University of South Africa. I am conducting a study entitled **'AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN HOSPITALS'.** The purpose of my study is to develop an action plan for enhancing the transfer of pain management competencies among nurses in Saudi Arabian teaching hospitals. Ethics approval to conduct this study was obtained from the Research Ethics Committee, College of Human Sciences, UNISA with reference number REC-012714-039.

You are cordially invited to participate in the first round of the validation of the developed action plan by using the embedded validation tool. Kindly assist **me in cross-checking whether you agree or disagree with the action statements, the methods used to achieve the actions, the persons who need to take responsibility as well as the appropriate time frames. Please also provide me with any comments or suggestions to improve the action plan.** Your participation will remain anonymous and confidential, and your specific contributions will not be shared with other panellists as all information will be received via the software program in bulk.

If you agree to take part in the first round of the validation of the action plan, kindly click on the link via the **Google Forms software** provided at the end of this letter. Instructions are provided as you go along completing the first round.

Your participation is voluntary, and you may choose not to take part, by just ignoring the invitation and not clicking on the link to access the action plan and validation tool. You still have a chance to withdraw even after completing the validation tool, by not submitting your answers. All comments and suggestions for improvement will be incorporated and forwarded to a second round until there is a 75% consensus among all panellists**.** By clicking the link provided below, you will be able to access the instrument. It will only take 30 to 45 minutes for you to complete

this questionnaire. I would greatly appreciate it if you would complete the questionnaire at your convenience by opening the link below.

https://docs.google.com/forms/d/15wodxUyvL8Lgz3LYZuTAfR85xiceSbqSdSv-zObMWIAc/edit

Please submit your answers within 10 days after receiving this invitation.

Because participation in this study is voluntary, you will not be remunerated. Your input will, however, be beneficial to allow me to revise the action plan by implementing all suggested changes by all panellists and share the revised action plan with you again and again until consensus amongst all panellists is achieved. The results of the study may be published, but your personal information and input will not be able to be traced back to you.

After completion, please click the submit button.

Please feel free to contact me by at Mobile +966503920421 or by email at kolobe66@yahoo.com if you have any questions regarding this research study. You may also contact my research supervisor Prof Lizeth Roets at +27 12 429 2226 or roetsl@unisa.ac.za. If you have any other concerns, you may also contact the College research ethics committee at Khankb@unisa.ac.za, the chairperson of the committee.

Your contribution and time will be appreciated.

Kind regards.

Litaba Efraim Kolobe

ANNEXURE 11: Storage and management of data collected

Study Title: An Action Plan to enhance Transfer of Learning of Pain Management competencies of nurses in Saudi Arabian Teaching Hospitals.

1. To protect identity by giving each subject a code number to anonymise the data.

2. Master list of the subjects' names and personal information will be kept under lock and key.

3. Only the researcher for the study will be the person with access to the data/information generated by the study.

4. The copies of the research methods, coded data and the reports will be kept locked in safe place for a period of 3 years.

Primary Investigator	**Litaba Efraim Kolobe**	Supervisor	**Prof Lizeth Roets**
Contact details:		Contact details:	
King Abdulaziz Medical City Hospital, Riyadh Tel :2520088 ext. 12864 Mail code:1242 Pager :3613 E-mail : 36640085@mylife.unisa.ac.za kolobel@ngha.med.sa		Tel: 012 429 2226 roetsl@unisa.ac.za	

ANNEXURE 12: Draft 1: Action plan with embedded validation tool

AN ACTION PLAN TO ENHANCE THE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN TEACHING HOSPITALS

Thank you for reading the recruitment letter and for volunteering to participate in the ROUND 1. Remember you can still decide not to take part, by not submitting your answers once you have completed the pre-test.

Your valuable inputs will however be greatly appreciated.

Please follow the instructions carefully

Kind regards
Efraim Kolobe

SECTION A: BIOGRAPHICAL DATA OF PANELLISTS

Description (optional)

1. What is your gender? *

○ Male

○ Female

○ Other...

2. How old are you? *

Short answer text

3.   **3. To which nationality do you belong?** *

Check all that apply.

☐ British

☐ Czech

☐ Filipino

☐ Indian

☐ Jordanian

☐ Malaysian

☐ Portuguese

☐ Saudi

☐ South African

☐ Slovak

☐ Spanish

☐ Other: _____

4.   **4. What is your highest education qualifications?**

Check all that apply.

☐ Master's degree

☐ Bachelor's degree

☐ Diploma in Nursing

☐ Other: _____

5. In which of the following nursing care areas do you work? *

☐ Cardiac Ward

☐ Obs-Gynae Ward

☐ Medical Ward

☐ Paediatric Ward

☐ Surgical Ward

☐ Other…

571

6. Please indicate your specific position in the nursing care areas do you work *

☐ Clinical Facilitator (Clinical Resource Nurse)

☐ Charge Nurse

☐ Registered Nurse

7. How long have been in this current position? *

Short answer text

Section 3 of 3

SECTION B: ACTION PLAN

Instructions to Panellists

Please indicate your answers by selecting either **'Agree'** or **'Disagree'** next to the options provided to indicate your agreement or disagreement with the inclusion of the (1) **action statement** as well as the (2) **methods suggested.**

1. **Inclusion of each action statement in the action plan**
2. **The methods suggested to assist in achieving the action goal and expected outcome**

Please choose from the list provided the **best possible responsible person(s)** that you recommend must take responsibility for every method.

Please choose from the list provided the **best possible timeframe** within which every method must be completed once the action plan is accepted.

Please provide detailed suggestions and comments in all the **suggestion /comment** boxes for improvement of any of the items/aspects in the draft action plan.

Action statement 1: Motivate nurses to further their studies *

○ Agree

○ Disagree

Please add any **comment** pertaining to this action statement

Short answer text

Method 1.1 Develop a policy to motivate nurses to improve their nursing qualifications *

○ Agree

○ Disagree

Please add any **comment** pertaining to this method

Short answer text

If you agree that a policy should be developed, please tick all that should be included in the policy to motivate the nurses *

☐ Paid full-time study leave for 1 year

☐ 20 hours paid study leave and 20 hours full-time work for 1 year

☐ Free accommodation for the period of study leave

☐ A monetary incentive after completion of a new formal qualification (degree or diploma)

☐ One day off for attending a one-day pain management program

☐ A monetary incentive after completion of a pain management program

☐ A certificate issued as an acknowledgment of nurses pursuing distance learning

☐ A monetary incentive after completion of distance learning programs

Please add any other **suggestion** on what can be   included in such a policy

Short answer text

Responsible person(s)

Please select (check the box(es)) next to the best person/s to be responsible for the development of a policy that motivates further studies.

☐ Five Members of the Central Region Nursing Governance and Accountability Board appointed by the Chie...

☐ Ad hoc committee appointed by the heads of the Human Resource Department Central Region, Riyadh

☐ Associate Executive Directors of Nursing for King Abdulaziz Medical City (KAMC) and King Abdullah Spe...

☐ Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for ...

☐ Clinical Directors of Nursing Operations for KAMC and KASCH

☐ Director of Postgraduate Center of Nursing Education for KAMC and KASCH

Please add any other **suggestion** on who would be the best person(s) to be responsible for development of such a policy

Short answer text

Time frame *

Select the most appropriate timeframe, after approval of the action plan, within which time the policy should be developed and finalised.

☐ 1- 3 months

☐ 4- 6 months

☐ 7-9 months

Please add any other **suggestion** regarding the most appropriate timeframe for development and finalisation of such a policy

Short answer text
....

Method 1.2   Present and negotiate for the implementation of the policy to motivate nurses *
to improve their nursing qualifications to the Ministry of National Guard Health Affairs
(MNGHA) through the Central Region Nursing Governance and Accountability Board

☐ Agree

☐ Disagree

Please add any other **suggestion** on who would be the best person(s) to be responsible to present
and negotiate for the implementation of such a policy

Short answer text
....

Time frame: Select the most appropriate timeframe within which time the policy should be *
presented, and the implementation negotiated to the Ministry of National Guard Health Affairs
(MNGHA)

☐ 3 months

☐ 6 months

☐ 9 months

Please add any **comment** pertaining to this method

Short answer text

---

*

Responsible person(s): Please select (check the box(es)) next to the best person/s to be responsible for the inclusion of the policy in the hospitals policies to motivate nurses to improve their nursing qualifications.

☐ Associate Executive Directors of Nursing for KAMC and KASCH

☐ Clinical Directors of Nursing Operations in every facility for KAMC and KASCH

☐ Nurse Managers in all KAMC and KASCH nursing care areas

Please add any other **suggestion** regarding the most appropriate timeframe for presentation of such a policy

Short answer text

Method 1.3   Include the policy in all hospitals` policies after approval by the Ministry of *
National Guard Health Affairs (MNGHA)

☐ Agree

☐ Disagree

Please add any **comment** pertaining to this method

Short answer text

---

*

Responsible person(s): Please select (check the box(es)) next to the best person/s to be responsible for the inclusion of the policy in the hospitals policies to motivate nurses to improve their nursing qualifications.

☐ Associate Executive Directors of Nursing for KAMC and KASCH

☐ Clinical Directors of Nursing Operations in every facility for KAMC and KASCH

☐ Nurse Managers in all KAMC and KASCH nursing care areas

Please add any other **suggestion** on who would be the best person(s) to be responsible for the inclusion of such a policy

Short answer text

Time frame: Select the most appropriate timeframe within which time the policy should be included in the hospital policies after approval by the Ministry of National Guard Health Affairs

☐ 1 month

☐ Six weeks

☐ 2 months

☐ 3 months

578

Please add any other **suggestion** regarding the most appropriate timeframe to include such a policy in the hospital policies

Short answer text

___

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area

☐ Agree

☐ Disagree

___

Please add any **comment** pertaining to this action statement

Short answer text

___

Method 2.1 Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate tool in all nursing care areas. *

☐ QUEST

☐ COLDSPA

☐ OPQSTUV

☐ PQRST

☐ BPI

☐ VDS

☐ VAS

579

☐ NPASS

☐ CPOT

☐ BPS

☐ COMFORT B

☐ CRIES

☐ ABBEY

☐ PAINAD

☐ NOPPAIN

☐ CNPI

Please add any **comment** pertaining to this method

Short answer text

*

Responsible person(s): Please select (check the box(es)) next to the best person/s to be responsible to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area.

☐ Two computer engineers appointed by the HR manager each assigned for KAMC and KASCH

☐ Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH

☐ Clinical Director of Nursing Operations appointed by Associate Executive Directors in every facility for KA…

☐ One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC…

Please add any other **suggestion** on who would be the best person(s) to be responsible to provide such an electronic format

Short answer text

Time frame: Select the most appropriate timeframe within which time the pain assessment tools should be included in the electronic patient record system *

☐ 1- 3 months

☐ 4- 6 months

☐ 7-9 months

Please add any **suggestion** regarding the most appropriate timeframe to include such a pain assessment tools

Short answer text

Method 2.2 Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas. *

☐ Agree

☐ Disagree

581

Please add any **comment** pertaining to this method

Short answer text

Responsible person(s): Please select (check the box(es)) the best person/s responsible to *
involve nurse supervisors with pain management training to provide post-pain management
training and supervisory support to the nursing team on how to conduct pain assessments in
all nursing care areas

☐ Clinical Directors of Nursing Operations for KAMC and KASCH

☐ Nurse Managers in all KAMC and KASCH nursing care areas

☐ Clinical facilitators in all KAMC and KASCH nursing care areas

☐ Charge nurses in all KAMC and KASCH nursing care areas

Please add any other **suggestion** on who may be the best person(s) to be responsible for providing
such an electronic format

Short answer text

Time frame: Select the most appropriate timeframe within which time the nurse supervisors *
should be involved to provide pain management training supervisory support to the nursing
team on how to conduct pain assessment in all nursing care areas.

☐ Every shift when the need arises

☐ Every patient round when the need arises

582

Please add any **suggestion** regarding the most appropriate time frame the nurse supervisors should be involved in such a supervisory support

Short answer text

Method 2.3 Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management *

☐ Agree

☐ Disagree

Please add any other comment pertaining to this method

Short answer text

If you agree that hospitals' internet-based resources should be accessible to provide support to patients and family members, please tick all that should be available. *

☐ Patient pain management websites

☐ Patient pain management hotlines

☐ Pain management support groups

Please add any **suggestion** on accessibility of such an internet-based resources

Short answer text

Responsible person(s): Please select (check the box(es)) the best person/s responsible to ensure internet-based resources should be accessible to patients and family members to provide support about pain management. *

☐ Chief Executive Director for KAMC and KASCH

☐ Two health information technologists appointed by the HR manager each assigned for KAMC and KASCH

☐ Two communication and information administrators appointed by the HR manager for KAMC and KASCH

☐ Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH

☐ Associate Executive Directors of Nursing for KAMC and KASCH

☐ Clinical Directors of Nursing Operations for KAMC and KASCH

☐ Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and …

☐ Nurse Managers in all KAMC and KASCH nursing care areas

☐ Charge nurses in all KAMC and KASCH nursing care areas

☐ Registered nurses in all KAMC and KASCH nursing care areas

Please add any **suggestion** on who may be the best person(s) to be responsible for ensuring accessibility of such internet-based resources

Short answer text

Time frame: Select the most appropriate timeframe within which time the hospitals' internet-based resources should be accessible to provide support to patients and family members. *

☐ Every day at a convenient time

☐ 24-hour access 7 days a week

Please add any **suggestion** regrading the most appropriate time frame for accessibility of such internet-based resources

Short answer text

Method 2.4 Make hospitals' internet-based resources on pain management publications and * **electronic materials accessible to the nursing team in all nursing care areas**

☐ Agree

☐ Disagree

Please add any other **comment** pertaining to this method

Long answer text

::::

*

If you agree that hospitals' internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas, please tick all that should be available.

☐ E-newsletters

☐ Videos on pain management

☐ Facts sheets

☐ Pain toolkits

☐ Clinical updates

☐ The World Health Organization

585

American Pain Society

International Association for Study of Pain

Please add any **suggestion** on what internet-based resources should be available to nursing teams about such pain management organisations

Long answer text

Responsible person(s): Please select (check the box(es)) the best person/s responsible to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas

Two computer engineers appointed by the HR manager each assigned for KAMC and KASCH

Two librarians appointed by the HR manager each assigned for KAMC and KASCH

Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH

Nurse Managers in all KAMC and KASCH nursing care areas

Nurse supervisors appointed by Executive Associate Directors of Nursing for KAMC and KASCH

One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC...

One Nurse educator appointed by the Director of the Postgraduate Nursing Education Center for KAMC a...

Please add any **suggestion** on who may be the best person(s) to be responsible for ensuring accessibility of internet-based resources to such pain management organisations

Short answer text

---

*

Time frame: Select the most appropriate timeframe within which time the hospitals' internet-based resources on organisations that specialises in pain management, pain management publications, and electronic materials should be accessible to the nursing team in all nursing care areas.

☐ Every nursing shift

☐ 24-hour access 7 days a week

Please add any **suggestion** regarding the most appropriate time frame for accessing internet-based resources to such pain management organisations

Short answer text

:::

*

Action statement 3: Develop a practice-oriented content specific short pain management training program

☐ Agree

☐ Disagree

Please add any **comment** pertaining to this action statement

Short answer text

Method 3.1 Include practice-oriented pain management training content for all nursing care *
areas in the pain management program

☐ Agree

☐ Disagree

Please add any **comment** pertaining to this method

Short answer text

If you agree that specific practice-oriented pain management content should be included in *
all nursing care areas, please tick all that should be included

☐ Methods to promptly assess a patients' pain in all nursing areas

☐ Assessment of patients' pain in all nursing care areas

☐ The advantages and disadvantages off all pain management scales

☐ Labour pain as a type of pain to be assessed

☐ The selection of appropriate pain intervention strategies based on the pain levels assessed

Please add any **suggestion** on what can be included in such a pain management training content

Short answer text

Responsible person(s): Please select (check the box(es)) the best person/s to be responsible to include specific practice-oriented pain management training content for all nursing care areas. *

☐ Director of Postgraduate Center of Nursing Education for KAMC and KASCH

☐ One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAM...

☐ One Clinical facilitator appointed by Clinical Directors of Nursing Operations in every nursing care area

☐ One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility

---

Please add any **suggestion** on who may be the best person(s) to be responsible for including such a pain management training content

Short answer text

Time frame: Select the appropriate timeframe within which time the specific practice-oriented *
pain management training content should be provided for inclusion in the program

☐ 1 week before the due date of the training program

☐ 1 month before the due date of the training program

☐ 3 months before the due date of the training program

Please add any **suggestion** regarding the most appropriate time frame to provide for inclusion such a pain management training content in the program

Short answer text

Action statement 4:   Develop a pain management short program that accommodate all learning types   *

☐ Agree

☐ Disagree

::::

Please add any **comment** pertaining to this action statement

Short answer text

Method 4.1   Incorporate different learner types during learning/training sessions *

☐ Agree

☐ Disagree

Please add any **comment** pertaining to this method

Short answer text

590

If you agree that different learner types of nurses should be included during pain management learning/training sessions, please tick all types that should be included during learning/training sessions.

☐ Creative Learners

☐ Enthusiastic thinking learners

☐ Self-confident thinkers

☐ Organised thinking learners

☐ Truth-seeking learners

☐ Inquisitive thinkers

☐ Diligent inquisitive learners

☐ Self-directed learners

Please add any **suggestion** on what can be included in such learning/training sessions

Short answer text

Responsible person(s): Please select (check the box(es)) the best person/s to be responsible to ensure that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions.

☐ Director of Postgraduate Center of Nursing Education for KAMC and KASCH

☐ One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAM...

☐ Clinical facilitators in all areas of nursing care for KAMC and KASCH

☐ One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility

:::

Please add any **suggestion** on who may be the best person(s) to be responsible for ensuring that the learning objectives accommodate these learner types

Short answer text

Time frame: Select the appropriate timeframe within which time the learning types must be shared for inclusion within the training program. *

☐ 2 weeks before the due date for finalisation of the training program

☐ 1 month before the due date of the training program

☐ 3 months before the due date of the training program

Please add any **suggestion** regarding the most appropriate time frame to share for inclusion of these learning types into the training program

Short answer text

Action statement 5: Incorporate different teaching approaches to accommodate diverse learners and facilitators in the training of pain management *

☐ Agree

☐ Disagree

Please add any **comment** regarding to this action statement

Short answer text

Method 5.1 Ensure the inclusion of different teaching approaches in the offering of the training program *

☐ Agree

☐ Disagree

:::

Please add any **comment** pertaining to this method

Short answer text

:::

If you agree that different teaching approaches should be utilised during pain management training that accommodates diverse learners and facilitators, please tick all that should be utilized during training. *

☐ Writing reflective journals

☐ Conducting grand rounds

☐ Engaging in focus groups

☐ Using role-playing activities

Please add any other **suggestion** for teaching approaches that can be utilized in such training

Short answer text

Responsible person(s): Please select (check the box(es)) next to the best person/s to be responsible to ensure that teaching approaches are included during pain management training.

☐ Director of Postgraduate Center of Nursing Education for KAMC and KASCH

☐ One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAM...

☐ Clinical facilitators in all areas of nursing care for KAMC and KASCH

☐ One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility

Please add any **suggestion** on who may be the best person(s) to be responsible to ensure inclusion of these learning approaches

Short answer text

Time frame: Select the appropriate timeframe within which time different teaching approaches be part of the teaching program before implementation.

☐ 2 weeks before the due date for finalisation of the training program

☐ 1 month before the due date of the training program

☐ 3 months before the due date of the training program

594

Please add any **suggestion** regarding the most appropriate time frame to be part of such a teaching program

Short answer text

Action statement 6:   Develop strategies to motivate nurses to participate in the short training program   *

☐ Agree

☐ Disagree

Please add any **comment** pertaining to this action statement

Short answer text

Method 6.1 If you agree that strategies that motivate the nurses to participate in the pain management training program should be developed, please tick all strategies that you think will motivate nurses.

☐ Conduct a situation analysis to assess the pain management needs of the nurses

☐ Involve nurses in the development of the content of the training program

☐ Involve nurses in the development of learning goals and learning outcomes for the pain management trai…

☐ Communicate the advantages of pain management competencies on (on what platform can this be done.

☐ Create a supportive learning environment in nursing care areas

Please add any **comment** regarding to this method

Short answer text

Responsible person(s): Please select (check the box(es)) the best person/s to be responsible *
to the develop the mentioned strategies that will motivate nurses to participate in the short
pain management training program related to their nursing care areas

☐ Director of Postgraduate Center of Nursing Education for KAMC and KASCH

☐ One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAM...

☐ Clinical facilitators in all areas of nursing care for KAMC and KASCH

☐ One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility

---

Please add any **suggestion** on who may be the best person(s) to be responsible to develop such
strategies that would motivate nurses' participation

Short answer text

Time frame: Select the appropriate timeframe within which time the strategies should be *
developed that motivate nurses to participate in the short pain management training program
related to their nursing care areas.

☐ 2 weeks before the due date for the finalisation of the training program

☐ 1 month before the training program starts

Please add any **suggestion** regarding the most appropriate time frame to develop such strategies
motivating nurses' participation

Short answer text

596

Action statement 7: Motivate nurses to apply the knowledge gained in the training program into practice

*

- [ ] Agree

- [ ] Disagree

Please add any **comment** pertaining to this action statement

Short answer text

Method 7.1 If you agree that nurses should be motivated kindly tick all you think that can be done to motivate them to apply their knowledge in practise.

*

- [ ] Provide nurses with a certificate to recognize their application of pain management knowledge in their re…

- [ ] Offer nurses the opportunity to take on the role of pain management experts who are competent in their …

- [ ] Allow the nurses to take part in planning outcomes of a pain management training program

- [ ] Support nurses' SMART goals and pain management learning

- [ ] Support what drives individual nurses to apply what they have learned about pain management

- [ ] Assign grades for applying pain management knowledge in practice based on annual performance

Please add any **suggestion** regarding to this method

Short answer text

597

Responsible person(s): Please select (check the box(es)) next to the best person/s to be responsible to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice. *

- [ ] Associate Executive Directors of Nursing for KAMC and KASCH
- [ ] Clinical Directors of Nursing Operations for KAMC and KASCH
- [ ] Nurse supervisors appointed by Executive Associate Directors of Nursing in every facility for KAMC and …
- [ ] Nurse Managers in all nursing care areas for KAMC and KASCH
- [ ] Director of Postgraduate Center of Nursing Education for KAMC and KASCH
- [ ] One Nurse educator appointed by the Director of the Postgraduate Center of Nursing Education for KAM…
- [ ] One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility

Please add any **suggestion** on who may be the best person(s) to be responsible to facilitate the implementation of such motivation to nurses

Short answer text

Time frame: Select the appropriate timeframe within which time the motivation should be provided to nurses to apply their knowledge in practice *

- [ ] 1 week after the training program
- [ ] 1-3 months after the training program
- [ ] 4-6 months after the training program
- [ ] 7-9 months after the training program

Please add any **suggestion** regarding the most appropriate time frame to provide such a motivation to nurses

Short answer text

Thank you for taking the time to share your feedback!

Description (optional)

ANNEXURE 13: Recruitment letter: Round 2 e- Delphi RECRUITMENT LETTER ROUND 2

Dear Panellist,

I am Litaba Efraim Kolobe, a doctorate student at the University of South Africa. **'AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN HOSPITALS'** is my study. The purpose of my study is to develop an action plan for enhancing the transfer of pain management competencies among nurses in Saudi Arabian teaching hospitals. This study was approved by the UNISA College of Human Sciences Research Ethics Committee under reference number REC-012714-039.

You are cordially invited to participate in the **second round** of validation of the developed action plan by using the embedded validation tool. In this second round, all the information received from panellists in the first round was analysed, and their suggestions were incorporated. The items for which consensus has already been reached are included in the action plan. You are therefore requested to respond ONLY to items where no consensus was reached. For example, if all statements indicate **'CONSENSUS REACHED,'** you should **disregard these sections** and **ONLY** respond to those that do not contain this statement. Please provide your honest opinion once more regarding whether you agree or disagree with the action statements, the methods used to accomplish the actions, the individuals who need to take responsibility, and the appropriate time frames. Please include any additional comments or suggestions for enhancing the action plan. Your participation will be kept anonymous and confidential, and your specific contributions will not be shared with other panellists, as all information will be gathered via software programs in bulk.

If you agree to take part in the **second round** of the validation of the action plan, kindly click on the link via the **Google Forms software** provided at the end of this letter. Instructions are provided as you go along completing the first round.

Your participation is voluntary, and you may choose not to take part, by just ignoring the invitation and not clicking on the link to access the action plan and

validation tool. You still have a chance to withdraw even after completing the validation tool, by not submitting your answers. All comments and suggestions for improvement will be incorporated and forwarded to a second round until there is a 75% consensus among all panellists**.** By clicking the link provided below, you will be able to access the instrument. It will only take 30 to 45 minutes for you to complete this questionnaire. I would greatly appreciate it if you would complete the questionnaire at your convenience by opening the link below.

https://docs.google.com/forms/d/1Fb20jtww9i9w36qo2rjpka4xehMbENj9jTZ-Yju_ZU8/edit

Please submit your answers within 10 days after receiving this invitation.

Because participation in this study is voluntary, you will not be remunerated. Your input will, however, be beneficial to allow me to revise the action plan by implementing all suggested changes by all panellists and share the revised action plan with you again and again until consensus amongst all panellists is achieved. The results of the study may be published, but your personal information and input will not be able to be traced back to you.

After completion, please click the submit button.

Please feel free to contact me by at Mobile +966503920421 or by email at kolobe66@yahoo.com if you have any questions regarding this research study. You may also contact my research supervisor Prof Lizeth Roets at +27 12 429 2226 or roetsl@unisa.ac.za.If you have any other concerns, you may also contact the College research ethics committee at Khankb@unisa.ac.za, the chairperson of the committee.

Your contribution and time will be appreciated.

Kind regards.

Litaba Efraim Kolobe

ANNEXURE 14: Gatekeeper letter: Request to recruit Delphi panellists for round 1

Assistance with recruitment of Delphi participants Round 1

TO : Nurse Managers

FROM: Litaba Efraim Kolobe

Pain Management Nurse Specialist *Number 47295*

SUBJECT : Request to recruit Nurses and CRNS to participate as Delphi panellists

from your ward/unit

My name is Litaba Efraim Kolobe and I am a registered doctoral student at the University of South Africa. The title of my study is '**An Action Plan to Enhance Transfer of Learning of Pain Management Competencies of Nurses in Saudi Arabian Teaching Hospitals'**. My study aims to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. I already received approval from the Research Ethics Committee of the Department of Health Studies, University of South Africa (**Ref # 36640085_CREC_CHS_2023)** as well as an ethics approval certificate from King Abdullah International Medical Research Center (KAIMRC) and Institutional Review Board (IRB) **(SP18/036/R)** attached.

My study is at the final phase of validating the action plan drafted, few rounds will be conducted with the nurses who volunteered to participate in your unit as Delphi panellists. Delphi panel will be a few numbers of nurses and clinical resources who will validate the action plan drafted in this study until a consensus of 75% is reached. Your

ward /unit has been selected, therefore for me to collect data, your role will be to assist in selecting volunteer nurses or clinical resource nurses to partake in the study will be appreciated. May you please forward the attached recruitment letter to all registered nurses or clinical resource nurses interested in research and who meet the following inclusion/eligibility criteria:

1. Must have an interest in pain management.

2. Nurses who attended at least one pain management workshop within the past 3 years.

3. Nurses who attended ward in-service training about pain management in the past 12 months.

4. Clinical facilitators (clinical resource nurses) responsible for pain management training of nurses in those nursing care divisions mentioned above.

5. Be committed to at least 3 rounds of Delphi.

I would appreciate it if you shared the recruitment letter containing the link and IRB approval with the nurses who will voluntarily participate. Participants will complete their opinions on the link provided in the attached recruitment letter. I will also inform you when we go for the next round.

I appreciate your time and willingness to assist.

Yours Sincerely

Litaba Efraim Kolobe

ANNEXURE 15: Draft 2: Action plan with embedded validation tool

Instructions:

Dear Panellist

Thank you for your willingness to participate in the second round of the Delphi. Thank you for your inputs, your time and experience are appreciated. Where consensus was researched between the opinions of all panellists it is indicated as such in this second draft. Where consensus was not reached, you will have the opportunity to provide your inputs again.

Action statement 1: Motivate nurses to further their studies (CONSENSUS REACHED)

Method 1.1: Develop a policy to motivate nurses to improve their nursing qualifications **(CONSENSUS REACHED)**

1.1.1 The following items must be included in the policy nurses to improve their qualifications

- A certificate issued as an acknowledgment of nurses pursuing distance learning
- One day off for attending a one-day pain management program
- A monetary incentive after completion of a new formal qualification (degree or diploma
- A monetary incentive after completion of distance learning programs
- Free accommodation for the period of study leave

(Agreement by ≥60% of panellists)

Responsible person(s): Please select the BEST possible individual/individuals to take responsibility to develop a policy to motivate nurses to improve their nursing qualifications: **PLEASE ONLY CHOOSE ONE OPTION.**	
1. Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH	
2. Clinical Directors of Nursing Operations for KAMC and KASCH	
3. Director of Postgraduate Center of Nursing Education for KAMC and KASCH	

The policy to motivate nurses to improve their nursing qualifications must be developed within 4-6 months after approval of the action plan (CONSENSUS REACHED)

Method 1.2: Present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Responsible person(s): Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH are the BEST possible individual/individuals to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to MNGHA through Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Time frame: Please select the most appropriate timeframe within which time the policy should be presented, and the implementation negotiated to the Ministry of National Guard Health Affairs (MNGHA): **PLEASE ONLY CHOOSE ONE OPTION.**

1. 6 months	
2. 9 months	

Method 1.3: Include the policy in all hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA) **(CONSENSUS REACHED)**

Responsible person(s): Please select the best person(s) to be responsible for the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications: **PLEASE ONLY CHOOSE ONE OPTION.**

1. Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	
2. Nurse Managers in all KAMC and KASCH nursing care areas	

Time frame: Please select the most appropriate timeframe within which time the policy should be included in all hospitals' policies after approval by the Ministry of National Guard Health Affairs: **PLEASE ONLY CHOOSE ONE OPTION.**

a) 1 month	•
b) 3 months	•

Suggestions/comments:

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical areas (CONSENSUS REACHED)

•	**607**

<table>
<tr><td rowspan="2">**Method 2.1**: Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate. tool in all nursing care areas.</td><td>Agree</td><td></td></tr>
<tr><td>Disagree</td><td></td></tr>
</table>

2.1.1 The following pain assessment tools that must be included and accessible on the electronic patient record system:

- PQRST
- CRIES

(Agreement by ≥60% of panellists)

Responsible person(s): Please select the best person(s) to be responsible to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area: **PLEASE ONLY CHOOSE ONE OPTION.**

1. Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	

Time frame: Please select the most appropriate timeframe within which time the pain assessment tools should be included in the electronic patient record system: **PLEASE ONLY CHOOSE ONE OPTION**

1. 1- 3 months	

2. 4- 6 months	

Method 2.2: Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas**. (CONSENSUS REACHED)**	

Responsible person(s): Please select the best person(s) responsible to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas: **PLEASE ONLY CHOOSE ONE OPTION**	
1) Clinical Directors of Nursing Operations for KAMC and KASCH	
2) Clinical facilitators in all KAMC and KASCH nursing care areas	

Time frame: Please select the most appropriate timeframe within which time the nurse supervisors should be involved to provide pain management training supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas: **PLEASE ONLY CHOOSE ONE OPTION**	
• Every shift when the need arises	
• Every patient round when the need arises	

Method 2.3: Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management **(CONSENSUS REACHED)**	

2.3.1 The following Internet-based resources that must be accessible to the patients and family members to obtain other support about pain management:

- Patient pain management websites
- Patient pain management hotlines
- Pain management support groups
- Peer support groups

(Agreement by ≥60% of panellists)

Responsible person(s): Please select the best person(s) to be responsible to ensure internet-based resources should be accessible to patients and family members to provide support about pain management. **PLEASE ONLY CHOOSE ONE OPTION**

1. Nurse Managers in all KAMC and KASCH nursing care areas	
2. Charge nurses in all KAMC and KASCH nursing care areas	
3. Registered nurses in all KAMC and KASCH nursing care areas	

Time frame: The hospitals' internet-based resources to the patients and family members to obtain other support about pain management must be made accessible within 24-hour access 7 days a week. (CONSENSUS REACHED)

Method 2.4: Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas. (**CONSENSUS REACHED**)

2.4.1 The following Internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management that must be accessible:

- Pain toolkits
- Videos on pain management
- Clinical updates

(Agreement by ≥60% of panellists)

Responsible person(s): Please select the BEST possible individual/individuals to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas: **PLEASE ONLY CHOOSE ONE OPTION**.

Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH	
One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	

Time frame: The hospitals' internet-based resources on pain management publications and electronic materials to the nursing team in all nursing care areas must be made accessible within 24-hour access 7 days a week (CONSENSUS REACHED)

Suggestions/comments:

Action statement 3: Develop a practice-oriented content specific short pain management training program. (CONSENSUS REACHED)

Method 3.1: Include practice-oriented pain management training content for all nursing care areas in the pain management program. **(CONSENSUS REACHED)**

3.1.1 The following specific practice-oriented pain management training content that must be included in all nursing care areas:

- Methods to promptly assess a patient's pain in all nursing areas
- The selection of appropriate pain intervention strategies based on the pain levels assessed
- Assessment of patients' pain in all nursing care areas
- The advantages and disadvantages of all pain management scales

(Agreement by ≥60% of panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible individual/individuals to be responsible to include specific practice-oriented pain management training content for all nursing care areas. **(CONSENSUS REACHED)**

Time frame: Please select the appropriate timeframe within which time the specific practice-oriented pain management training content should be provided for inclusion in the program. **PLEASE ONLY CHOOSE ONE OPTION**

a) 1 month before the due date of the training program	
b) 3 months before the due date of the training program	

Suggestions/comments:

Action statement 4: Develop a pain management short program that accommodate all learning types. (CONSENSUS REACHED)

Method 4.1: Incorporate different learner types during learning/training sessions. **(CONSENSUS REACHED)**

4.1.1 The following different learner types of nurses that must be included during

pain management learning/training sessions:

- Creative Learners
- Organised thinking learners
- Enthusiastic thinking learners

(Agreement by ≥60% of panellists)

4.1.2 The following different learning types that must be incorporated during pain

management learning/training sessions are achieved by using the following

learning styles:

- Creative learners by generating creative ideas in a group.

- Enthusiastic thinking learners by listening to the information actively, take part in the activity to practice the skill and participate in group discussion
- Organised thinking learners by solving different real-life problems

(Agreement by ≥60% of panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible person(s) to be

responsible for ensuring that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions. **(CONSENSUS REACHED)**

Time frame: Please select the appropriate timeframe within which time the learning types must be shared for inclusion within the training program. **PLEASE ONLY CHOOSE ONE OPTION**

a) 1 month before the due date of the training program	
b) 3 months before the due date of the training program	

Suggestions/comments:

Action statement 5: Develop a pain management short course that motivates nurses to apply knowledge gained in the training program to practice. (CONSENSUS REACHED)

Method 5.1: Ensure the inclusion of different teaching approaches in the offering of the training program. **(CONSENSUS REACHED)**

5.1 The following teaching approaches that must be utilised during pain management training that accommodates diverse learners and facilitators:

- Engaging in focus groups
- Using role-playing activities

(Agreement by ≥60% of panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible person(s) to be

responsible to ensure that teaching approaches are included during pain management training. **(CONSENSUS REACHED).**

Time frame: Please select the appropriate timeframe within which time different teaching approaches should be part of the teaching program before implementation. **PLEASE ONLY CHOOSE ONE OPTION**

1. 1 month before the due date of the training program	
2. 3 months before the due date of the training program	

Suggestions/comments

Action statement 6: Develop strategies to motivate nurses to participate in the short training program. (CONSENSUS REACHED).

6.1 The following are strategies that will motivate nurses to participate in the pain

management training program:

1. Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.
2. Involve nurses in the development of the content of the training program
3. Communicate the advantages of pain management competencies
4. Create a supportive learning environment in nursing care areas

(Agreement by ≥60% of panellists)

Responsible person(s): Please select the best person(s) to be responsible to de-velop the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas. **PLEASE ONLY CHOOSE ONE OPTION**	
1. Clinical facilitators in all areas of nursing care for KAMC and KASCH	
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	

Time frame: The strategies that motivate nurses to participate in the short pain management training program related to their nursing care areas should be developed within 1 month before the training program starts. (CONSENSUS REACHED).

Suggestions/comments:

Action statement 7: Motivate nurses to apply the knowledge gained in the training program into practice. (CONSENSUS REACHED)

7.1: The following methods that can be implemented to motivate nurses to apply

their knowledge in practice:

- Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.
- Support nurses' SMART goals and pain management learning
- Support drives individual nurses to apply what they have learned about pain management.
- Allow the nurses to take part in planning outcomes of a pain management training program

• Assign grades for applying pain management knowledge in practice based on annual performance **(Agreement by ≥60% of panellists)**

Responsible person(s): Please select the best person(s) to be responsible to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice. **PLEASE ONLY CHOOSE ONE OPTION**

1. Nurse Managers in all nursing care areas for KAMC and KASCH	
2. Clinical Directors of Nursing Operations for KAMC and KASCH	

Time frame: Please select the appropriate timeframe within which time the aspects for motivation should be provided to nurses to apply their knowledge in practice.

1. 1-3 months after the training program	
2. 4-6 months after the training program	

Suggestions/comments:

ANNEXURE 16:

Gatekeeper letter: to recruit panellists for round 2

Assistance with recruitment of Delphi participants Round 2

TO   : Nurse Managers

FROM: Litaba Efraim Kolobe

           Pain Management Nurse Specialist *Number 47295*

SUBJECT   : **Request to recruit Nurses and CRNS to participate as Delphi panellists**

           from your ward/unit

My name is Litaba Efraim Kolobe and I am a registered doctoral student at the University of South Africa. The title of my study is '**An Action Plan to Enhance Transfer of Learning of Pain Management Competencies of Nurses in Saudi Arabian Teaching Hospitals'**. My study aims to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. I already received approval from the Research Ethics Committee of the Department of Health Studies, University of South Africa (**Ref # 36640085_CREC_CHS_2023)** as well as an ethics approval certificate from King Abdullah International Medical Research Center (KAIMRC) and Institutional Review Board (IRB) **(SP18/036/R)** attached.

My study is at the **second round** of validating the action plan drafted, therefore may you assist in recruiting the same nurses and clinical resource nurses who volunteered

initially in the first-round round to participate in your unit as Delphi panellists for continuity. May you please forward the attached recruitment letter to all registered nurses clinical and clinical resource nurses who participated during the first round as stated in the first round to meet the following inclusion criteria:

1. Must have an interest in pain management.

2. Nurses who attended at least one pain management workshop within the past 3 years.

3. Nurses who attended ward in-service training about pain management in the past 12 months.

4. Clinical facilitators (clinical resource nurses) responsible for pain management training of nurses in those nursing care divisions mentioned above.

5. Be committed to at least 3 rounds of Delphi.

I would appreciate it if you would once more share the recruitment letter containing the link and IRB approval with the nurses who will voluntarily participate. Participants will complete their opinions on the link provided in the attached recruitment letter. I will also inform you when we go for the **next round**.

I appreciate your time and willingness to assist.

Yours Sincerely

Litaba Efraim Kolobe

FINDINGS DURING ROUND 2 FOR ACTION STATEMENTS 1 TO 7

Action statement 1: Motivate nurses to further their studies (CONSENSUS REACHED)			
Method 1.1: Develop a policy to motivate nurses to improve their nursing qualifications **(CONSENSUS REACHED)**			
1.1.1 The following Items that must be included in the policy nurses to improve their qualifications • A certificate issued as an acknowledgment of nurses pursuing distance learning • One day off for attending a one-day pain management program • A monetary incentive after completion of a new formal qualification (degree or diploma • A monetary incentive after completion of distance learning programs • Free accommodation for the period of study leave **(Agreement by ≥60% of panellists)**			
Responsible person(s) to develop a policy to motivate nurses to improve their nursing qualifications (n = 12; N = 12)	**Responses**		**Consensus Reached (≥ 75%)**
	n =	f = %	Yes/No

1. Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH	5	41.7	**No**
2. Clinical Directors of Nursing Operations for KAMC and KASCH	4	33.3	
3. Director of Postgraduate Center of Nursing Education for KAMC and KASCH	3	25	

The policy to motivate nurses to improve their nursing qualifications must be developed and finalised 4-6 months after approval of the action plan (CONSENSUS REACHED)

Method 1.2: Present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Responsible person(s): Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH are the BEST possible individual/individuals to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to MNGHA through Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Time frame required to present the policy and of negotiate the implementation to the Ministry of National Guard Health Affairs (MNGHA) (n = 12; N = 12)	Responses	Consensus Reached

		n =	f = %	(≥ 75%) Yes/No
1. 6 months		8	66.7	**No**
2. 9 months		4	33.3	

<table>
<tr><td colspan="5" style="background:yellow">Method 1.3: Include the policy in all hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA) (CONSENSUS REACHED)</td></tr>
</table>

Responsible person(s) to be responsible for the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications **(n = 12; N = 12)**		**Responses**		**Consensus Reached (≥ 75%)**
		n =	f = %	Yes/No
a) Clinical Directors of Nursing Operations in every facility for KAMC and KASCH		4	33.3	**No**
b) Nurse Managers in all KAMC and KASCH nursing care areas		8	66.7	

Time frame required to include the policy in all hospitals' policies after approval of the action plan by the Ministry of National Guard Health Affairs (n = 12; N = 12)	Responses		Consensus Reached (≥ 75%)
	n =	f = %	Yes/No
a) 1 month	3	25	
b) 3 months	9	75	Yes

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area. (CONSENSUS REACHED)

Method 2.1: Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate. tool in all nursing care areas. (n = 12; N = 12)	Responses			Consensus Reached (≥ 75%)
		n =	f = %	Yes/No
	Agree	12	100	Yes

	Disa-gree	0	0	

Responsible person(s) to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area	**Responses**		**Consensus Reached (≥ 75%)**
	n =	**f = %**	**Yes/No**
1. Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	3	25	**Yes**
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	9	75	
Time frame required to include the pain assessment tools in the electronic patient record system (n = 12; N = 12).			
1. **1- 3 months**	7	58.3	

	n =	f = %	Yes/No
2. 4- 6 months	5	41.7	**No**

Method 2.2: Involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas**. (CONSENSUS REACHED)**

Responsible person(s) to involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas (n = 12; N = 12).	**Responses**		**Consensus Reached (≥ 75%)**
	n =	**f = %**	**Yes/No**
1. Clinical Directors of Nursing Operations for KAMC and KASCH	6	50	No
2. Clinical facilitators in all KAMC and KASCH nursing care areas	6	50	

Time frame required to involve the nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas (n = 12; N = 12).

• **Every shift when the need arises**	50	50	
• **Every patient round when the need arises**	50	50	No

<table>
<tr><td colspan="4">

Method 2.3: Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management **(CONSENSUS REACHED)**

</td></tr>
<tr><td colspan="4">

2.3.1 The following Internet-based resources that must be accessible to the patients and family members to obtain other support about pain management:

- Patient pain management websites
- Patient pain management hotlines
- Pain management support groups
- Peer support groups

(Agreement by ≥60% of panellists)

</td></tr>
<tr><td colspan="4">

Responsible person(s) to **ensure internet-based resources should be accessible to patients and family members to provide support about pain management (n = 12; N = 12).**

</td></tr>
<tr><td>1. Nurse Managers in all KAMC and KASCH nursing care areas</td><td>9</td><td>75</td><td>**Yes**</td></tr>
<tr><td>2. Charge nurses in all KAMC and KASCH nursing care areas</td><td>0</td><td>0</td><td></td></tr>
<tr><td>3. Registered nurses in all KAMC and KASCH nursing care areas</td><td>3</td><td>25</td><td></td></tr>
<tr><td colspan="4">

Time frame: The hospitals' internet-based resources that should be accessible to the patients and family members to obtain other support about pain management must be made **24-hour access 7 days a week. (CONSENSUS REACHED)**

</td></tr>
</table>

Method 2.4: Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas. (**CONSENSUS REACHED**)

2.4.1 The following internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management that must be accessible

- Pain toolkits
- Videos on pain management
- Clinical updates

(Agreement by ≥60% of panellists)

Responsible person(s): The best possible individual/individuals to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas (n12 = ; N = 12).

1. Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH	5	41.7	**No**
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	7	58.3	

Time frame required to make pain management publications and electronic materials available via the hospitals internet to the nursing team in all nursing care areas must be **24-hour access 7 days a week (CONSENSUS REACHED)**

Action statement 3: Develop a practice-oriented content specific short pain management training program. (CONSENSUS REACHED)

Method 3.1: Include practice-oriented pain management training content for all nursing care areas in the pain management program. **(CONSENSUS REACHED)**

3.1.1 The following specific practice-oriented pain management training content that must be included in all nursing care areas

- Methods to promptly assess a patient's pain in all nursing areas
- The selection of appropriate pain intervention strategies based on the pain levels assessed
- Assessment of patients' pain in all nursing care areas
- The advantages and disadvantages of all pain management scales

(Agreement by ≥60% of panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible individual/individuals to be responsible to include specific practice-oriented pain management training content for all nursing care areas. **(CONSENSUS REACHED)**

Time frame within which time the specific practice-oriented pain management training content should be provided for inclusion in the program **(n = 12; N = 12).**	**Responses**		**Consensus Reached (≥ 75%)**
	n =	**f = %**	**Yes/No**

a) 1 month before the due date of the training program	2	16.7	Yes
b) 3 months before the due date of the training program	10	83.3	

<p style="background-color:green">**Action statement 4: Develop a pain management short program that accommodate all learning types. (CONSENSUS REACHED)**</p>

<p style="background-color:yellow">**Method 4.1:** Incorporate different learner types during learning/training sessions**. (CONSENSUS REACHED)**</p>

<p style="background-color:yellow">**4.1.1 The following different learner types of nurses that must be included during pain management**

learning/training sessions:

- Creative Learners
- Organised thinking learners
- Enthusiastic thinking learners

(Agreement by ≥60% of panellists)</p>

<p style="background-color:yellow">**4.1.2 The following different learning types that must be incorporated during pain management learning/training sessions are achieved by using the following learning styles:**

- Creative learners by generating creative ideas in a group.
- Enthusiastic thinking learners by listening to the information actively, take part in the activity to practice the skill and participate in group discussion
- Organised thinking learners by solving different real-life problems

(Agreement by ≥60% of panellists)</p>

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best responsible for ensuring that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions. (CONSENSUS REACHED)			
Time frame within which time the learning types must be shared for inclusion within the training program. (n = 12; N = 12).	**Responses**		**Consensus Reached (≥ 75%)**
	n =	**f = %**	**Yes/No**
1. 1 month before the due date of the training program	2	16.7	**Yes**
2. 3 months before the due date of the training program	10	83.3	

Action statement 5: Develop a pain management short course that motivates nurses to apply knowledge gained in the training program to practice. (CONSENSUS REACHED)

Method 5.1: Ensure the inclusion of different teaching approaches in the offering of the training program. **(CONSENSUS REACHED)**

5.1.1 The following teaching approaches that must be included during pain management training that accommodates diverse learners and facilitators.

- Engaging in focus groups
- Using role-playing activities

(Agreement by ≥60% of panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible person(s) to be responsible to ensure that teaching approaches are included during pain management training. **(CONSENSUS REACHED).**

Time frame within which time should different teaching approaches be part of the teaching program before implementation. (n = 12; N = 12)	**Responses**		**Consensus reached**
	n =	**f = %**	**Yes/No**
1. 1 month before the due date of the training program	3	25	**Yes**
2. 3 months before the due date of the training program	9	75	

Action statement 6: Develop strategies to motivate nurses to participate in the short training program. (CONSENSUS REACHED).

6.1 The following are strategies that will motivate nurses to participate in the pain management training program:

1. Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.

2. Involve nurses in the development of the content of the training program
3. Communicate the advantages of pain management competencies
4. Create a supportive learning environment in nursing care areas

(Agreement by ≥60% of panellists)

Responsible person(s) to be responsible to develop the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas. **(n = 12; N = 12)**

1. Clinical facilitators in all areas of nursing care for KAMC and KASCH	3	25	**Yes**
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	9	75	

Time frame: The strategies that motivate nurses to participate in the short pain management training program related to their nursing care areas should be developed **1 month before the training program starts. (CONSENSUS REACHED).**

Action statement 7: Motivate nurses to apply the knowledge gained in the training program into practice. (CONSENSUS REACHED)

Method 7.1: The following methods that can be implemented to motivate nurses to apply their knowledge in practice:

1. Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.
2. Support nurses' SMART goals and pain management learning
3. Support drives individual nurses to apply what they have learned about pain management.

Responsible person(s) to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice	**Responses**		**Consensus Reached (≥ 75%)**
	n =	**f = %**	**Yes/No**
8. Nurse Managers in all nursing care areas for KAMC and KASCH	3	25	**Yes**
9. Clinical Directors of Nursing Operations for KAMC and KASCH	9	75	
Time frame required to implement the methods to motivate nurses to apply their knowledge in practice	**Responses**		**Consensus reached**
	n =	**f = %**	**Yes/No**
10. 1-3 months after the training program	6	50	

632

			No
11. 4-6 months after the training program	6	50	

ANNEXURE 18: DRAFT 3 ACTION PLAN WITH EMBEDDED VALIDATION TOOL

Instructions:

Dear Panellist

Thank you for your willingness to participate in the third round of the Delphi. Thank you for your inputs, your time and experience are appreciated. Where consensus was researched between the opinions of all panellists it is indicated as such in this second draft. Where consensus was not reached, you will have the opportunity to provide your inputs again.

Action statement 1: Motivate nurses to further their studies (CONSENSUS REACHED)
Method 1.1: Develop a policy to motivate nurses to improve their nursing qualifications **(CONSENSUS REACHED)**
1.1.1 The following items to be included in the policy nurses to improve their qualifications   • A certificate issued as an acknowledgment of nurses pursuing distance learning   • One day off for attending a one-day pain management program   • A monetary incentive after completion of a new formal qualification (degree or diploma   • A monetary incentive after completion of distance learning programs   • Free accommodation for the period of study leave   **(Agreement of ≥60% by panellists)**
Please select the BEST possible person(s) to take responsibility to develop a policy that motivates nurses to improve their nursing qualifications. PLEASE ONLY CHOOSE ONE OPTION

1. Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH	
2. Clinical Directors of Nursing Operations for KAMC and KASCH	

Time frame: Policy to motivate nurses to improve their nursing qualifications must be developed and finalised **4-6 months after approval of the action plan (CONSENSUS REACHED)**

Method 1.2: Present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Responsible person(s): Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH are the BEST possible individual/individuals to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to MNGHA through Central Region Nursing Governance and Accountability Board **(CONSENSUS REACHED)**

Time frame within which time the policy should be presented, and the implementation negotiated to the Ministry of National Guard Health Affairs (MNGHA) PLEASE ONLY CHOOSE ONE OPTION

1. 6 months	
2. 9 months	

Method 1.3: Include the policy in all hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA) **(CONSENSUS REACHED)**

Responsible person(s): Please select the BEST person(s) to be responsible for the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications. **PLEASE ONLY CHOOSE ONE OPTION**

1. Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	
2. Nurse Managers in all KAMC and KASCH nursing care areas	

Time frame: The policy should be included in all hospitals' policies 3 months after approval by the Ministry of National Guard Health Affairs (**CONSENSUS REACHED)**

Please kindly add any suggestions/comments:

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical areas. (CONSENSUS REACHED)

Method 2.1: Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate. tool in all nursing care areas. (CONSENSUS REACHED)

2.1.1 The following pain assessment tools that must be included and accessible on the electronic patient record system.

- PQRST
- CRIES

(Agreement of ≥60% by panellists)

Responsible person(s): Please select the BEST person(s) to be responsible to provide the electronic format of the pain assessment tools for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area. **PLEASE ONLY CHOOSE ONE OPTION**

1. Five Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH	
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	

Time frame: Please select the most appropriate timeframe within which time the pain assessment tools should be included in the electronic patient record system:

1. 1- 3 months	
2. 4- 6 months	

Method 2.2: Involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas. **(CONSENSUS REACHED)**

Responsible person(s): Please select the best person(s) responsible to involve nurse supervisors with pain management training to provide supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas. **PLEASE ONLY CHOOSE ONE OPTION**

1. Clinical Directors of Nursing Operations for KAMC and KASCH	
2. Clinical facilitators in all KAMC and KASCH nursing care areas	

Time frame: Please select the most appropriate timeframe within which time the nurse supervisors with pain management training should be involved to provide supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas. PLEASE ONLY CHOOSE ONE OPTION

Every shift when the need arises	
Every patient round when the need arises	

Method 2.3: Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management **(CONSENSUS REACHED)**

2.3.1 The following internet-based resources that must be accessible to the patients and family members to obtain other support about pain management

- Patient pain management websites
- Patient pain management hotlines
- Pain management support groups
- Peer support groups

(Agreement of ≥60% by panellists)

Responsible person(s): Nurse Managers in all KAMC and KASCH nursing care areas are the best persons to ensure internet-based resources are accessible to patients and family members to provide support about pain management **(CONSENSUS REACHED)**

Time frame: The hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management must be **24-hour access 7 days a week. (CONSENSUS REACHED**

Method 2.4: Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas. (**CONSENSUS REACHED)**

2.4.1 The following Internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management that must be accessible

- Pain toolkits
- Videos on pain management
- Clinical updates

(Agreement of ≥60% by panellists)

Responsible person(s): The best possible individual/individuals to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas. **PLEASE ONLY CHOOSE ONE OPTION**

1. Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH	
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	

Time frame: The hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas must be made **24-hour access 7 days a week (CONSENSUS REACHED)**

Please kindly add any suggestions/comments:

Action statement 3: Develop a practice-oriented content specific short pain management training program. (CONSENSUS REACHED)

Method 3.1: Include practice-oriented pain management training content for all nursing care areas in the pain management program. **(CONSENSUS REACHED)**

3.1.1 The following specific practice-oriented pain management training content that should be included in all nursing care areas

- Methods to promptly assess a patient's pain in all nursing areas
- The selection of appropriate pain intervention strategies based on the pain levels assessed
- Assessment of patients' pain in all nursing care areas
- The advantages and disadvantages of all pain management scales

(Agreement of ≥60% by panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible individual to be responsible to include specific practice-oriented pain management training content for all nursing care areas. **(CONSENSUS REACHED)**

Time frame: The specific practice-oriented pain management training content should be provided for inclusion in the program 3 **months before the due date of the training program** (**CONSENSUS REACHED**)

Please kindly add any suggestions/comments:

Action statement 4: Develop a short pain management program that accommodate all learning types. (CONSENSUS REACHED)

Method 4.1: Incorporate different learner types during learning/training sessions**. (CONSENSUS REACHED)**

4.1.1 The following different learner types of nurses that must be included during pain management

 learning/training sessions:

- Creative Learners
- Organised thinking learners
- Enthusiastic thinking learners

(Agreement of ≥60% by panellists)

4.1.2 The following different learning types that should be incorporated during pain management

learning/training sessions are achieved by using the following learning styles:

- Creative learners by generating creative ideas in a group.

- Enthusiastic thinking learners by listening to the information actively, take part in the activity to practice the skill and participate in group discussion
- Organised thinking learners by solving different real-life problems

(Agreement of ≥60% by panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best responsible person for ensuring that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions. **(CONSENSUS REACHED)**

Time frame: The learning types must be shared for inclusion within the training program **3 months before the due date of the training program. (CONSENSUS REACHED)**

Please kindly add any suggestions/comments:

Action statement 5: Develop a pain management short course that motivates nurses to apply knowledge gained in the training program to practice. (CONSENSUS REACHED)

Method 5.1: Ensure the inclusion of different teaching approaches in the offering of the training program. **(CONSENSUS REACHED)**

Teaching approaches that should be utilised during pain management training that accommodates diverse learners and facilitators.

- Engaging in focus groups
- Using role-playing activities

(Agreement of ≥60% by panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible person to be responsible to ensure that teaching approaches are included during pain management training. **(CONSENSUS REACHED).**

Time frame: Different teaching approaches must be part of the teaching program before implementation **3 months before the due date of the training program (CONSENSUS REACHED)**

Please kindly add any suggestions/comments:

Action statement 6: Develop strategies to motivate nurses to participate in the short training program. (CONSENSUS REACHED).

6.1 The following are strategies that will motivate nurses to participate in the pain management training program:

- Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.
- Involve nurses in the development of the content of the training program
- Communicate the advantages of pain management competencies

- Create a supportive learning environment in nursing care areas

(Agreement of ≥60% by panellists)

Responsible person(s): One pain nurse specialist appointed by Clinical Directors of nursing operations in every facility is the best person to be responsible for developing the mentioned strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas. **(CONSENSUS REACHED)**

Time frame: The strategies that motivate nurses to participate in the short pain management training program related to their nursing care areas should be developed **1 month before the training program starts. (CONSENSUS REACHED).**

Please kindly add any suggestions/comments:

Action statement 7: Motivate nurses to apply the knowledge gained in the training program into practice. (CONSENSUS REACHED)

7.1: The following are methods that can be implemented to motivate nurses to apply their

 knowledge in practice:

- Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.
- Support nurses' SMART goals and pain management learning
- Support drives individual nurses to apply what they have learned about pain management.
- Allow the nurses to take part in planning outcomes of a pain management training program
- Assign grades for applying pain management knowledge in practice based on annual performance

(Agreement of ≥60% by panellists)
Responsible person(s): Nurse Managers in all nursing care areas for KAMC and KASCH are the best persons to be responsible to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice. **(CONSENSUS REACHED)**
Time frame: **Please select the appropriate timeframe within which time the aspects for motivation should be provided to nurses to apply their knowledge in pr Nurse Managers in all KAMC and KASCH nursing care areas are the best persons responsible to ensure internet-based resources are accessible to patients and family members to provide support about pain management practice PLEASE ONLY CHOOSE ONE OPTION**

1. 1-3 months after the training program	
2. 4-6 months after the training program	

Dear Panellist,

I am Litaba Efraim Kolobe, a doctorate student at the University of South Africa. **'AN ACTION PLAN TO ENHANCE TRANSFER OF LEARNING OF PAIN MANAGE- MENT COMPETENCIES OF NURSES IN SAUDI ARABIAN HOSPITALS'** is my study. The purpose of my study is to develop an action plan for enhancing the transfer of pain management competencies among nurses in Saudi Arabian teaching hospi- tals. This study was approved by the UNISA College of Human Sciences Research Ethics Committee under reference number REC-012714-039.

Thank you for the time by providing your valuable inputs in the second round. You are now cordially invited to participate in the **third round** of validation of the developed action plan by using the embedded validation tool. In this second round, all the infor- mation received from panellists in the first round was analysed, and their suggestions were incorporated. The items for which consensus has already been reached are in- cluded in the action plan. You are therefore requested to respond **ONLY** to items where no consensus was reached. For example, if all statements indicate **'CONSEN- SUS REACHED**,' you should **disregard these sections** and **ONLY** respond to those that do not contain this statement.

 Please provide your honest opinion once more regarding whether you agree or disa- gree with the action statements, the methods used to accomplish the actions, the in- dividuals who need to take responsibility, and the appropriate time frames. Please include any additional comments or suggestions for enhancing the action plan. Your participation will be kept anonymous and confidential, and your specific contributions will not be shared with other panellists, as all information will be gathered via software programs in bulk.

If you agree to participate in the **third round** of the validation of the action plan, kindly click on the link via the **Google Forms software** provided at the end of this letter. Instructions are provided as you go along completing the first round.

Your participation is voluntary, and you may choose not to take part, by just ignoring the invitation and not clicking on the link to access the action plan and validation tool. You still have a chance to withdraw even after completing the validation tool, by not submitting your answers. All comments and suggestions for improvement will be incorporated and forwarded to a fourth round until there is a 75% consensus among all panellists**.** By clicking the link provided below, you will be able to access the instrument. It will only take 30 to 45 minutes for you to complete this questionnaire. I would greatly appreciate it if you would complete the questionnaire at your convenience by opening the link below.

https://docs.google.com/forms/d/13qf4iJtIpSkn1tEqIuwiU1ciZrhGUWNh8hT-Xhj5XOo/edit

Please submit your answers within 10 days after receiving this invitation.

Because participation in this study is voluntary, you will not be remunerated. Your input will, however, be beneficial to allow me to revise the action plan by implementing all suggested changes by all panellists and share the revised action plan with you again and again until consensus amongst all panellists is achieved. The results of the study may be published, but your personal information and input will not be able to be traced back to you.

After completion, please click the submit button.

Please feel free to contact me by at Mobile +966503920421 or by email at kolobe66@yahoo.com if you have any questions regarding this research study. You may also contact my research supervisor Prof Lizeth Roets at +27 12 429 2226 or roetsl@unisa.ac.za. If you have any other concerns, you may also contact the College research ethics committee at Khankb@unisa.ac.za, the chairperson of the committee.

Your contribution and time will be appreciated.

Kind regards.

Litaba Efraim Kolobe

ANNEXURE 20: GATEKEEPER LETTER: ROUND 3

Assistance with recruitment of Delphi participants Round 3

TO   : Nurse Managers

FROM: Litaba Efraim Kolobe

           Pain Management Nurse Specialist *Number 47295*

SUBJECT   **: Request to recruit Nurses and CRNS to participate as Delphi panellists**

           from your ward/unit

My name is Litaba Efraim Kolobe and I am a registered doctoral student at the University of South Africa. The title of my study is '**An Action Plan to Enhance Transfer of Learning of Pain Management Competencies of Nurses in Saudi Arabian Teaching Hospitals'**. My study aims to develop an action plan to enhance the transfer of learning of pain management competencies of nurses in Saudi Arabian teaching hospitals. I already received approval from the Research Ethics Committee of the Department of Health Studies, University of South Africa (**Ref # 36640085_CREC_CHS_2023)** as well as an ethics approval certificate from King Abdullah International Medical Research Center (KAIMRC) and Institutional Review Board (IRB) **(SP18/036/R)** attached.

My study is at the **third round** of validating the action plan drafted, therefore may you assist in recruiting the same nurses and clinical resource nurses who volunteered in

the second-round round to participate in your unit as Delphi panellists for continuity. May you please forward the attached recruitment letter to them for voluntary participation in this **third round.**

I would appreciate it if you would once more share the recruitment letter containing the link and IRB approval with the nurses who will voluntarily participate. Participants will complete their opinions on the link provided in the attached recruitment letter. I will also inform you when we go for the **next round**.

I appreciate your time and willingness to assist.

Yours Sincerely

Litaba Efraim Kolobe

ANNEXURE 21 Findings: during Round 3 from Action Statements 1 to 7

<table>
<tr><td colspan="4" style="background:green">Action statement 1: Motivate nurses to further their studies (CONSENSUS REACHED)</td></tr>
<tr><td colspan="4" style="background:yellow">Method 1.1: Develop a policy to motivate nurses to improve their nursing qualifications (CONSENSUS REACHED)</td></tr>
<tr><td colspan="4" style="background:yellow">1.1.1 The following Items that must be included in the policy nurses to improve their qualifications

• A certificate issued as an acknowledgment of nurses pursuing distance learning
• One day off for attending a one-day pain management program
• A monetary incentive after completion of a new formal qualification (degree or diploma
• A monetary incentive after completion of distance learning programs
• Free accommodation for the period of study leave
(Agreement of ≥60% by panellists)</td></tr>
</table>

Responsible person/s to develop a policy to motivate nurses to improve their nursing qualifications. (n=10; N=10)	**Responses**		**Consensus Reached (≥ 75%)**
	n=	**f=%**	**Yes/No**
1. Nursing policy committee representatives appointed by the Associate Executive Directors of Nursing for KAMC and KASCH	10	100	**Yes**
2. Clinical Directors of Nursing Operations for KAMC and KASCH	0	0	

<table>
<tr><td colspan="4" style="background:#29abe2">The policy to motivate nurses to improve their nursing qualifications must be developed within 4-6 months after approval of the action plan (CONSENSUS REACHED)</td></tr>
<tr><td colspan="4" style="background:yellow">Method 1.2: Present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board (CONSENSUS REACHED)</td></tr>
<tr><td colspan="4" style="background:#d9d9d9">Responsible person/s: Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH are the best possible individual/individuals to present and negotiate for the implementation of the policy to motivate nurses to improve their nursing qualifications to MNGHA through Central Region Nursing Governance and Accountability Board (CONSENSUS REACHED)</td></tr>
</table>

Time frame required to present the policy and of negotiate the implementation to the Ministry of National Guard Health Affairs (MNGHA) **(n=10; N=10)**	**Responses**	**Consensus Reached (≥ 75%)**

		n=	f=%	Yes/No
3.	6 months	9	90	**Yes**
4.	9 months	1	10	

Method 1.3: Include the policy in all hospitals` policies after approval by the Ministry of National Guard Health Affairs (MNGHA) **(CONSENSUS REACHED)**

Responsible person/s to be responsible for the inclusion of the policy in all hospitals' policies to motivate nurses to improve their nursing qualifications **(n=10; N=10)**	**Responses**		**Consensus Reached (≥ 75%)**
	n=	**f=%**	**Yes/No**
1. Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	9	90	**Yes**
2. Nurse Managers in all KAMC and KASCH nursing care areas	1	10	

Time frame: The policy should be included in all hospitals' policies 3 months after approval of the action plan by the Ministry of National Guard Health Affairs (**CONSENSUS REACHED**)

Action statement 2: Make appropriate and relevant pain management tools accessible to the nursing team in every clinical areas (CONSENSUS REACHED)

Method 2.1: Include pain assessment tools in an electronic patient record system so that the nursing team can choose and access the most appropriate. tool in all nursing care areas**. (CONSENSUS REACHED)**

2.1.1 The following are pain assessment tools that must be included and accessible on the electronic patient record system.

- **PQRST**
- **CRIES**

(Agreement of ≥60% by panellists)

Responsible person(s): One pain nurse specialist appointed by clinical directors of nursing in every facility for KAMC and KASCH will be responsible to provide the electronic format of the pain assessment tool for inclusion in the electronic patient record system to be accessible to the nursing team in every nursing care area **(CONSENSUS REACHED)**

Time frame within which time the pain assessment tools should be included in the electronic patient record system (n=10; N=10)	**Responses**		**Consensus Reached (≥ 75%)**
	n=	**f=%**	**Yes/No**

1. **1- 3 months**	9	90	**Yes**
2. **4- 6 months**	1	10	

<table>
<tr><td colspan="4" style="background:yellow">Method 2.2: Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas. (CONSENSUS REACHED)</td></tr>
</table>

Responsible person(s) to involve nurse supervisors with pain management training to provide post-pain management training and supervisory support to the nursing team on how to conduct pain assessments in all nursing care areas (**n=10; N=10**)	**Responses**		**Consensus Reached (≥ 75%)**
	n=	**f=%**	**Yes/No**
1. Clinical Directors of Nursing Operations for KAMC and KASCH	9	90	**Yes**
2. Clinical facilitators in all KAMC and KASCH nursing care areas	1	10	
Time frame within which time the nurse supervisors should be involved to provide pain management training supervisory support to the nursing team on how to conduct pain assessment in all nursing care areas. (n=10; N=10)	**Responses**		**Consensus Reached (≥ 75%)**
	n=	**f=%**	**Yes/No**
1. **Every shift when the need arises**	10	100	**Yes**
2. **Every patient round when the need arises**	0	0	

<table>
<tr><td style="background:yellow">Method 2.3: Make hospitals' internet-based resources accessible to the patients and family members to obtain other support about pain management (CONSENSUS REACHED)</td></tr>
<tr><td style="background:yellow">2.3.1 The following Internet-based resources that must be accessible to the patients and family members to obtain other support about pain management

• Patient pain management websites
• Patient pain management hotlines
• Pain management support groups
• Peer support groups
(Agreement of ≥60% by panellists)</td></tr>
<tr><td style="background:#d3d3d3">Nurse Managers in all KAMC and KASCH nursing care areas are responsible person(s) to ensure internet-based resources should be accessible to patients and family members to provide support about pain management (CONSENSUS REACHED)</td></tr>
<tr><td style="background:yellow">Method 2.4: Make hospitals' internet-based resources on pain management publications and electronic materials accessible to the nursing team in all nursing care areas. (CONSENSUS REACHED)</td></tr>
</table>

2.4.1 The following Internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management that must be accessible • Pain toolkits • Videos on pain management • Clinical updates **(Agreement of ≥60% by panellists)**			
Responsible person/s: The best possible individual/individuals to ensure internet-based resources on pain management publications, electronic materials, and organisations that specialises in pain management should be accessible to the nursing team in all nursing care areas. (n=; N=)			
1. Nursing health informatics appointed by Associated Directors of Nursing for KAMC and KASCH	9	90	**Yes**
2. One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility for KAMC and KASCH	1	10	

Action statement 3: Develop a practice-oriented content specific short pain management training program. (CONSENSUS REACHED)

Method 3.1: Include practice-oriented pain management training content for all nursing care areas in the pain management program. **(CONSENSUS REACHED)**

3.1.1 The following specific practice-oriented pain management training content that must be included in all nursing care areas:

• Methods to promptly assess a patient's pain in all nursing areas
• The selection of appropriate pain intervention strategies based on the pain levels assessed
• Assessment of patients' pain in all nursing care areas
• The advantages and disadvantages of all pain management scales
(Agreement of ≥60% by panellists)

Responsible person/s: One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best person to include specific practice-oriented pain management training content for all nursing care areas. **(CONSENSUS REACHED)**

Time frame: The specific practice-oriented pain management training content should be provided for inclusion in the program 3 months before the due date of the training program (**CONSENSUS REACHED)**

Action statement 4: Develop a pain management short program that accommodate all learning types. (CONSENSUS REACHED)

Method 4.1: Incorporate different learner types during learning/training sessions**. (CONSENSUS REACHED)**

4.1.1 The following different learner types of nurses that must be included during pain management learning/training sessions:

- Creative Learners
- Organised thinking learners
- Enthusiastic thinking learners

(Agreement of ≥60% by panellists)

4.1.2 The following different learning types that must be incorporated during pain management learning/training sessions are achieved by using the following learning styles:

- Creative learners by generating creative ideas in a group.
- Enthusiastic thinking learners by listening to the information actively, take part in the activity to practice the skill and participate in group discussion
- Organised thinking learners by solving different real-life problems

(Agreement of ≥60% by panellists)

Responsible person(s): One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best possible person/s for ensuring that the learning objectives accommodate the different learner types of nurses during pain management learning/training sessions. **(CONSENSUS REACHED)**

Time frame: The learning types must be shared for inclusion within the training program **3 months before the due date of the training program (CONSENSUS REACHED)**

Action statement 5: Develop a pain management short course that motivates nurses to apply knowledge gained in the training program to practice. (CONSENSUS REACHED)

Method 5.1: Ensure the inclusion of different teaching approaches in the offering of the training program. **(CONSENSUS REACHED)**

5.1 The following teaching approaches that mudtbe utilised during pain management training that accommodates diverse learners and facilitators.

- Engaging in focus groups
- Using role-playing activities

(Agreement of ≥60% by panellists)

Responsible person/s: One Pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility is the best person for ensuring that teaching approaches are included during pain management training. **(CONSENSUS REACHED).**

Time frame: Different teaching approaches must be part of the teaching program before implementation **3 months before due date of the training program. (CONSENSUS REACHED)**

Action statement 6: Develop strategies to motivate nurses to participate in the short training program. (CONSENSUS REACHED).

Involving nurses in the development of the content of the training is the strategy that will motivate nurses to participate in the pain management training program**. (CONSENSUS REACHED)**

6.1 The following strategies that will motivate nurses to participate in the pain

   management training program:

- Involve nurses in the development of learning goals and learning outcomes for the pain management training program relevant to their nursing care areas.
- Involve nurses in the development of the content of the training program
- Communicate the advantages of pain management competencies
- Create a supportive learning environment in nursing care areas

(Agreement of ≥60% by panellists)

Responsible person(s): One pain nurse specialist appointed by clinical directors of nursing operations in every facility is the best person for developing the strategies that will motivate nurses to participate in the short pain management training program related to their nursing care areas. **(CONSENSUS REACHED)**

Time frame: The strategies that motivate nurses to participate in the short pain management training program related to their nursing care areas should be developed **1 month before the training program starts. (CONSENSUS REACHED).**

Action statement 7:   Motivate nurses to apply the knowledge gained in the training program into practice. (CONSENSUS REACHED)

Method 7.1: The following ,methods that can be implemented to motivate nurses to apply their knowledge in practice:

- Offer nurses the opportunity to take on the role of pain management experts who are competent in their field.
- Support nurses' SMART goals and pain management learning
- Support drives individual nurses to apply what they have learned about pain management.
- Allow the nurses to take part in planning outcomes of a pain management training program
- Assign grades for applying pain management knowledge in practice based on annual performance

(Agreement of ≥60% by panellists)

Responsible person(s): **Nurse Managers in all nursing care areas for KAMC and KASCH** are the best persons to be responsible to facilitate the implementation of the aspect to motivate nurses to apply their knowledge in practice. **(CONSENSUS REACHED)**

Time frame required to implement the methods to motivate nurses to apply their knowledge in practice **(n=10; N=10)**

1. 1-3 months after the training program	9	90	**Yes**

2. 4-6 months after the training program	1	10	

ANNEXURE 22 Validated Action Plan

Action statement	Methods	Responsible person(s)	Timeframe
1. Motivate nurses to further their studies.	**1.1** Develop a policy to motivate nurses to improve their nursing qualifications by including a certificate issued as an acknowledgement of nurses pursuing distance learning, one day off for attending pain management programs, monetary incentive after completion of a pain management program (degree or diploma) and after completion of distance learning programs, and offer free accommodation for the period of study leave	Nursing policy committee representatives, appointed by the associate executive directors for KAMC and KASCH.	The policy to motivate nurses to improve their nursing qualifications must be developed and finalised **4-6 months after approval of the action plan** by the MNGHA.
	1.2 Present and negotiate for implementing the policy to the Ministry of National Guard Health Affairs (MNGHA) through the Central Region Nursing Governance and Accountability Board.	Nursing policy committee representatives appointed by the Associate Executive Director of Nursing for KAMC and KASCH	The policy should be presented, and the implementation thereof negotiated with the Ministry of National Guard Health Affairs within

			six months after approval of the action plan.
	1.3 Include the policy as part of the policies of all hospitals.	Clinical directors of nursing operations in every facility for KAMC and KASCH	The policy should be included within **three months** after approval of the action plan by the Ministry of National Guard Health Affairs.
2. Make appropriate and relevant pain management tools accessible to the nursing team in every clinical area.	**2.1** Include all pain assessment tools, including PQRST and CRIES, in an electronic patient record system so the nursing team can choose and access the most appropriate tool in all nursing care areas.	One pain nurse specialist appointed by clinical directors of nursing in every facility for KAMC and KASCH	The pain assessment tools should be included within **1–3 months** in the electronic patient record system after implementing the action plan in KAMC and KASCH.
	2.2 Involve nurse supervisors with pain management training to provide post-pain management training supervisory support to the nursing team on how to	Clinical Directors of Nursing Operations for KAMC and KASCH	Nurse supervisors must be available on **every shift** to provide pain management training and supervisory support

	conduct pain assessments in all nursing care areas.		to the nursing team (**when the need arises**) after approval of the action plan.
	2.3 Make all hospitals' internet-based resources, including websites, support groups, hotlines, and peer support groups, accessible to patients and family members to obtain other support about pain management.	Nurse Managers in all KAMC and KASCH nursing care areas.	The hospitals' internet-based resources must be made accessible to the patients and family members to obtain other support about pain management**, 24 hours per day and seven days a week, after approval of the action plan.**
	2.4 Make all hospitals' internet-based resources, including publications, electronic materials, and organizations that specialize in pain management, accessible to the nursing team in all nursing care areas that consist of pain toolkits, videos on pain management, and clinical updates.	Nursing health informatics appointed by Associate Directors of Nursing for KAMC and KASCH.	The hospitals' internet-based resources, publications, electronic materials, and organizations that specialize in pain management should be continuously available.

3. Develop a practice-oriented content-specific short pain management training program.	a. Include practice-oriented pain management training content, inclusive of *the methods to promptly assess a patient's pain in all nursing areas; * The selection of appropriate pain intervention strategies based on the pain levels assessed; *the advantages and disadvantages of all pain management scales and *assessment of patients' pain in all nursing care areas.	One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility.	The practice-oriented content-specific short pain management training program must be available three **months before the due date for the offering of the training program.**
4. Develop a pain management short program that accommodates all learning types.	a. Accommodate different learning types and learning styles nurses used to achieve them when developing the training program, specifically *creative learners (generate creative ideas in a group), *enthusiastic thinking learners (listen to the information actively, take part in the activity to practice the skill and participate in the group discussion), as well as	One pain nurse specialist appointed by Clinical Directors of Nursing Operations in every facility	Advertise the inclusiveness of the different learner types to be accommodated in the short program **three months before the due date of the offering of the training program.**

	* organised thinking learners (solve different real-life problems). .		
5. Incorporate different teaching approaches to accommodate diverse learners and facilitators in pain management training.	a. Ensure the inclusion of different teaching approaches, including focus groups and role play, in the offering of the training program.	One pain nurse specialist appointed by Clinical Directors of Nursing operations in every facility.	Different teaching approaches must be offered in the teaching program and must be available to learners and facilitators three months before the due date of when the training program is to be implemented.
6. Develop strategies to motivate nurses to participate in the short training program.	a. Involve nurses in the *development of the content, goals, and outcomes of the training program, *communicate the advantages of pain management competencies (the platform that can be utilized), and b. *create a supportive learning environment.	One pain nurse specialist appointed by Clinical Directors of nursing operations in every facility.	Nurses must be invited to participate in the development of the content, goals, and outcomes of the training **one month before the training program is to be offered.**
7. Motivate nurses to apply the knowledge gained in the	a. *Offer nurses the opportunity to take on the role of a pain management expert who is competent	Nurse Managers in all nursing care areas for KAMC and KASCH are the	The implementation of methods to motivate nurses to apply

training program in practice.	in the field, *support nurses' SMART goals and pain management learning, *support what drives individual nurses to apply what they have learned about pain management * and assign grades for applying pain management knowledge in practice based on annual performance	best persons to be responsible for facilitating the implementation of the aspect to motivate nurses to apply their knowledge in practice.	their knowledge in practice must be within **1-3 months after the training program**.

ANNEXURE 23: Certificate of Language Editing

CERTIFICATE OF LANGUAGE EDITING

I, the undersigned, declare that I have edited the Doctor of Philosopy (Nursing) Thesis of Litaba Efraim Kolobe, titled:

AN ACTION PLAN TO ENHANCE THE TRANSFER OF LEARNING OF PAIN MANAGEMENT COMPETENCIES OF NURSES IN SAUDI ARABIAN HOSPITALS.

A small part of the thesis, contained in specific figures, the direct quotations of human participants, and the documents included in the annexures, was not edited because these sections contain transcribed verbal communication, were included as complete images or formed part of completed research records which had to remain intact.

As is usual, the editor is not responsible for the correctness of changes made to the thesis after it was edited and before submission or after possible changes suggested by the examiners have been implemented.

Signed:

Prof (emeritus) P.J. Botha

(A member of the South African Translators' Institute, no. 1000048.)

Date: 16 February 2024