THE DEVELOPMENT OF A FRAMEWORK FOR ASSESSING CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA: A MULTIMETHOD STUDY

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DECLARATION

I, Oboshie Anim-Boamah, declare that this research report (Human Ethics) Clearance Number **M190433** is my work. It is being submitted for the degree of Doctor of Philosophy in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

Signed at Johannesburg

On the 19 day of March 2021

CONFERENCE PRESENTATIONS AND PUBLICATIONS ARISING FROM THIS STUDY

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ABSTRACT

Introduction: Assessment is defined as the process of gathering and evaluating the information on what students know, understand, and can do in order to make an informed decision about the next steps in the educational process. The current clinical competence assessment system in Ghana, although nationalised and centralised, was no longer standardised due to ad hoc changes that have been made over the last decade. As a result, students complained that they were not uniformly evaluated, resulting in an unfair and unreliable system. Competent students may fail while not so competent students may pass due to the discrepancies in the assessment system. The development of an evidence-based framework to guide the assessment of clinical competence in Ghana is expected to assist in standardising and improving clinical competence quality. The study intends to identify how nursing students' clinical competence in Ghana can best be assessed to standardise the assessment system to improve the quality of the clinical competency assessment system that will lead to improved patient safety and quality of care in Ghana.

Aim: The study aimed to develop a framework to assess nursing students' clinical competence in Ghana with the intention to standardise and improve the quality of clinical assessments.

Methodology: a multimethod study in four phases; a scoping review, situational analysis, framework development, and expert review were used in the study. The study was conducted in Nursing Education Institutions in Ghana.

Findings: 1150 articles were obtained in five search engines, and 28 published articles were accepted for the scoping review, with themes such as clinical competencies assessed, other areas assessed, quality of assessment system, strengths and weaknesses of assessment, testing assessment systems, examiner-related factor, supporting students during an assessment, scoring performance and quality improvement of an assessment system.

A situational analysis in three sections; firstly, a qualitative document analysis of four documents on clinical competence assessment were analysed. The analysis showed that most

of the information covered clinical competency teaching but rarely on how the assessment was designed and administered.

Themes that emerged from the key informant interviews were structure, process, outcome and recommendations. Themes from the focus group discussion of nursing students were the examination system, clinical competency assessment process, competency assessment outcome, and proposals for quality improvement.

Results from phases one and two were used to develop the draft framework and guided by The World Bank framework for building an effective assessment system. The draft framework was made up of five constructs: policies guiding the clinical competency examination, proposed content of the examination, system alignment of a competency examination, expectations and standards of nursing students and quality improvement of a clinical competency examination. At the fourth phase, the draft framework was evaluated for clinical utility. Nursing experts evaluated the draft framework as relevant, context-specified, and feasible in assessing nursing students' clinical competence in Ghana.

Conclusions: A framework for assessing nursing students' clinical competence in Ghana is expected to create a uniform assessment system for all students and improve the quality of the assessment system, leading to well-trained nurses who will provide quality service to patients in Ghana beyond.

DEDICATION

I dedicate this work to my family Kwame, Ama, Abena, and Akua Anim-Boamah.

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LIST OF ABBREVIATIONS

ABBREVIATIONS	PHRASE/NOUN
ANSAT	Australian Nursing Standards Assessment Tool
ASAP	Amalgamated Student Assessment in Practice Model
CBT	Computer-Based Tests
CCEI	Creighton Competency Evaluation Instruments
CPD	Continuous Professional Development
CPE	Continuous Professional Education
COPP	Competence Development of Practical Procedures
DA	Document analysis
DOPS	Direct Observation of Procedural Skills
ENS	Erasmus Nursing Students Assessment Tools
FDC	Four-Dimensional Criteria
GHS	Ghana Health Service
GHS-ERC	Ghana Health Service Ethics Review Committee
HCAT	Holistic Clinical Assessment Tool
HEPRA	Health Professions Regulatory Agency
HPEPSS	Health Professional Education in Patient Safety Survey
HTI	Health Training Institutions
ICAS	Interpersonal Communication Assessment Scale Tool
IRB	Institutional Review Board
ISP	Interpersonal skills Profile
KI	Key informants
MOH	Ministry of Health
NEI's	Nursing Educational Institutions
N&MC	Nursing and Midwifery Council
NSCPES	Nursing Students Clinical Performance Evaluation Scale
NTS-NAS	Non-technical Skills-Nursing Assessment Scale
PCC	Population, Concept, Context
PHC	Primary Health Care

QLCCT	Quint levelled Clinical Competency Tool
ScR	Scoping review
SN	Student nurses
UHC	Universal Health Coverage
WHO	World Health Organization
DA	Document analysis
KI	Key informants
N&MC	Nursing and Midwifery Council
SN	Student nurses
NEIs	Nursing Educational Institutions
HTI	Health Training Institutions
WHO	World Health Organization
MOH	Ministry of Health
GHS	Ghana Health Service
GHS-ERC	Ghana Health Service Ethics Review Committee

CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Nurses are a critical component of the health workforce globally as a result of the proportion of the care they provide compared to other health professions. It is global knowledge that nurses are at the core of healthcare delivery and form an indispensable part of national and global strategic plans related to a range of health priorities, including primary health care (PHC) and Universal Health Coverage(UHC) (Englund et al., 2020; World Health Organization, 2020a). In the *State of the world's nursing 2020* report, the World Health Organization (WHO) stated that nurses constitute about 59% of the health workforce globally. This proportion is far higher in Africa (66%) and other developing regions (Western pacific, 68%), where nurses are the primary health workforce (World Health Organization, 2020a). Higher proportions (about 80%) of nurses in the health systems were reported by other authors (Asuquo et al., 2013). Nurses are so essential to the health system that should they withdraw their services; the health systems would collapse (Asuquo et al., 2013; International Council of Nurses, 2015a, 2015b; Kunaviktikul, 2014; Rispel & Bruce, 2015). Nurses can serve as an instrumental lever to achieving UHC when enabled and supported to work to the full scope of their education and training (World Health Organization, 2020).

1.1.1 The nursing workforce in Ghana

Asamani et al. (2019) stated that 58% of Ghana's health workforce are nurses and midwives (48% professional nurses and 42% of nursing assistants) (World Health Organization, 2020b). In 2020, the appendix of the *State of the World's Nursing 2020* report on Ghana reported about 13078 yearly graduations of nurses in Ghana. This figure is, arguably, an underestimation of the number of nurses added to the nursing register yearly in Ghana, a country of about 30 million people (World Health Organization, 2020b). This is because, on page 61 of the *Holistic Assessment of 2017 Health Sector Programme of Work*, the nursing council data shows that 26172 candidates (from all nursing and nursing assistant programmes) sat for the nursing licensing examination, out of which 21592 passed and are eligible to be licensed to practice in Ghana (Ministry of Health-Ghana, 2018). This result

translates into an average pass rate of 83%, with a range of 72% in the category of Registered Mental Health Nurses and 95% in Post NAP (Nurse Assistant Preventive)/NAC(Nurse Assistant Clinical) Midwifery programmes for the year 2017. Looking at this phenomenon, the nursing stock analysis conducted by the World Health Organization (2020b), estimating the number of nurses in Ghana by the year 2030 will be exceeded.

Nursing is a practice-based profession, and, as such, clinical placement, teaching and assessment are essential components of nursing education (Kpodo et al., 2016). Nursing students are expected to acquire certain competencies to meet the minimum standards required for registration to provide safe nursing care to the population. In the *State of the World's Nursing 2020* report, the World Health Organization (WHO) expressed concerns regarding the poor quality of nursing education globally. Therefore, it recommended that more investment be made into nursing education (World Health Organization, 2020a).

1.1.2 Licensing examination and quality in nursing education

Nursing councils, where they exist, are the gatekeepers of the quality of nursing education and practice. In many, if not all countries, nursing councils are mandated to ensure that the nurses being trained and recruited into the healthcare systems are competent in providing quality and safe healthcare to the population they serve. It is against this backdrop that many countries such as the United States of America (USA), Canada, the United Kingdom, Australia, China, South Korea, the Philippines, Japan and Ghana have resorted to conducting national nursing licensing examinations (which may include clinical competency assessment) to ensure that only competent nurses are registered and licensed to provide nursing care for patients in their jurisdictions (Christmals & Gross, 2019; Hou et al., 2019; Kim et al., 2014; McGillis Hall et al., 2018; Park et al., 2016; Shin et al., 2017). Other countries, such as Brazil and South Africa, are introducing such assessment forms (Silva & Cabral, 2018). The licensing examination varies from country to country, especially concerning the inclusion of a clinical competency assessment. For example, in the USA, a clinical competency assessment is not conducted as part of the licensing examination process. In Ghana, clinical competency assessment is a significant component of the examination (Christmals & Gross, 2019; Silva & Cabral, 2018).

Assessment is the process of gathering and evaluating the information on what an individual knows and can do to make an informed decision about the next steps in the educational

process or professional life (Clarke, 2011; Terry et al., 2017). Assessment is said to be of good quality if it is valid, fair, transparent, reliable, feasible, and has an educational impact (Gulikers et al., 2004; Norcini et al., 2011). It goes beyond an exercise that will enable students to acquire a grade to pass or fail a course; instead, the student may be required to use the knowledge, skills, and attitudes acquired throughout their training in their professional life (Gulikers et al., 2004; Kennedy & Chesser-Smyth, 2017; Zasadny & Bull, 2015). Therefore, the nursing quality assessment, especially clinical competency assessment, must be given critical attention.

1.1.3 Clinical Competency Assessment in Nursing

Even though the terms ‘competence’ and ‘competency’ are closely related and are sometimes used interchangeably, they are not the same. Clinical competence refers to the practitioner’s capacity to meet prescribed roles and responsibilities, whereas competency is the actual performance level at a giving point in time. In other words, competence assessment looks at the performance against set standards, whereas competency looks at a practitioner’s actual performance (McConnell, 2001). For this reason, the term ‘competence’ is mostly used in documents that set standards of practice for professionals (International Council of Nurses (ICN), 2009). The International Council of Nurses (2009) defined competence as the effective application of a combination of knowledge, skills and judgement in practice (International Council of Nurses (ICN), 2009). They stated that it is generally accepted that clinical competence covers cognitive, affective and psychomotor domains of learning. Despite the differences, it is common to see both terms used interchangeably (Fukada, 2018; Takase & Teraoka, 2011). The term clinical competence assessment was used in this study.

Assessment goes beyond an exercise that will enable students to acquire a grade to pass a course; instead, the student may be required to use the combination of knowledge, skills, and attitudes learnt in their theory and practice (Gulikers et al., 2004; Kennedy & Chesser-Smyth, 2017; Zasadny & Bull, 2015). The importance of quality clinical assessment in nursing cannot be overemphasised as a valid assessment of clinical competence positively affects patient care (Alquez et al., 2019).

In Nursing Education Institutions (NEI’s), formative and summative assessment is conducted in the three main domains of learning (cognitive, affective and psychomotor) (Hughes & Quinn, 2013). Summative assessment in health professions education programs aims to

ensure that decisions such as progression and licensing and future performance prediction are evidence-based (Terry et al., 2017). Competency assessment is an ongoing process that seeks to evaluate, track, and maintain or improve the competency of health professions students or staff. It is necessary to ensure that clinical competency assessment is rigorous because passing an incompetent candidate, or failing a competent student, has negative consequences on the nursing workforce and the population served. Many models and tools have been developed to assess either a single clinical competency (Alquwez et al., 2019; Lai, 2016) or a collection of competencies (Meier et al., 2014; Murray et al., 2016; Oermann et al., 2016; Ossenberg et al., 2016a; Zasadny & Bull, 2015). Independent of the model, tool or methods used in assessing clinical competency, the underlying principle is that the assessment should adhere to some quality criteria: validity, reliability (consistency or reproducibility), equivalence, feasibility, educational effect, catalytic effect and acceptability Norcini et al., 2011).

According to Lambert and Lines (2000), the purpose of assessment is to provide feedback to students and teachers, provide information on the level of achievements, and provide a means for selection and judgment regarding students' quality and educational establishments.

Validity is the extent to which a test measures what it is designed to measure (Adamson et al., 2012). It is the relevance of a test to its objective (Brown, 2019). In essence, the tool should be able to discriminate between competent and incompetent candidates. Brown (2019) explained that assessment is expected to meet other aspects of validity such as content validity (assessment has an adequate sampling of content from the syllabus), predictive validity (an assessment fulfils the function of predicting the performance of a student as it was designed to do). Also, concurrent validity (the extent to which results of assessment correlates with other assessments administered simultaneously) and construct validity (the extent to which the test results are related to the data gained from observations of an individual’s behaviour concerning the construct in question). In the assessment of clinical competency, validity implies obtaining a detailed and relevant health history from the patient, carrying out a physical examination of the patient, identifying the patient’s problems, identifying appropriate investigations, interpreting results of the investigations, recommending and undertaking appropriate management of the patient (Harden et al., 1975).

Reliability seeks to ensure that the assessment will produce the same results if repeated under the same conditions. It is expected to produce the same or similar results when it is used on

separate occasions. Reliability can be assured by using more than one type of assessment to measure the students' achievement. Test-retest reliability is when a test administered to students and re-administered at another time produces similar scores on both occasions. Parallel-form reliability occurs when students are administered a different test that measures the same thing during a re-test phase. There should be a positive correlation between the two test results. Split-half reliability is done when the test item is divided into two, and each is administered to the students. The two sets of scores are calculated to estimate correlation (Brown, 2019).

Equivalence is the criterion that ensures that the assessment produces the same results if carried out across different institutions. Therefore, different assessment system versions should yield an equivalence score or decision (Norcini et al., 2011). Assessing nursing students' clinical competency requires that an equivalence score or decision is made no matter the institutions being examined.

Feasibility poses the questions, 'is the assessment practical, realistic, sensible within the context it is administered?'. It determines whether the test is practical, realistic and sensible in a given circumstance or context (Norcini et al., 2011). In assessing nursing students' clinical competency, the allocation of a patient to students, the timing of the examination and skills assigned to students must be feasible within the context.

Transparency of an assessment refers to the extent to which students and teachers know what is required of them, and the system by which their work will be assessed, and how the marks will be allocated (Lambert & Lines, 2000). Race (2009) stated that students might experience challenges, despite having been provided with the programme's learning outcomes. Therefore, the assessment must be very clear to students to enhance understanding. Lack of transparency can affect the validity and reliability of the assessments.

Regarding the criterion 'educational effect', the assessment process must motivate the students and the teachers to prepare to produce educational benefits (Norcini et al., 2011). Assessment of clinical competency enables student nurses to acquire the expected competencies to provide quality care to patients in the hospital setting. These benefits propel the students to learn and acquire the expected competencies, and the teachers are also motivated to teach the competencies.

‘Catalytic effect’ is the criterion that stipulates that the assessment must provide feedback that can lead to reforms in education and drive future education (Norcini et al., 2011). In assessing clinical competency, feedback from the examining teams is sent to the licensing body and used to improve the assessment system. However, the feedback is always from the examining team's perspective, made up of the examiners and the coordinators in the respective schools. Therefore, sourcing feedback from the nursing students on the assessment system could make the feedback more holistic and meaningful.

Lastly, ‘acceptability’ is the criterion that indicates that all stakeholders should believe the examination process and results are credible (Norcini et al., 2011). Results emanating from the assessment of nursing students' clinical competency must be accepted by the stakeholders, such as students, teachers, and head of schools, as credible. Therefore, there must not be an iota of uncertainty among these significant stakeholders that the examination process is not credible.

1.1.4 Assessment of Clinical Competency in Nursing Globally

There is variety in the system, process and content of clinical competency assessment and licensing examinations globally. This section gives an overview of such processes in various countries. The processes are subject to change and improvement, mostly due to research and quality improvement processes. The Council on Licensure, Enforcement and Regulation (CLEAR), an organisation dedicated to supporting the regulatory bodies’ function's performance, has a bi-annual journal that publishes studies on licensing examinations (Council on Licensure Enforcement and Regulation, 2020).

1.1.4.1 United States of America

The National Council of State Boards of Nursing (NCSBN) of the USA organises the computer-based National Council Licensure Examination (NCLEX) for all candidates who meet the minimum requirements to write. A candidate can take the NCLEX-RN eight times in one year by making individual appointments with the NCSBN. This allows those who failed the examination multiple opportunities to retake the test and thus enter the profession once they are qualified. Nevertheless, candidates cannot retake their exam sooner than 45 days after taking the previous examination (Hou et al., 2019). A candidate must pass the NCLEX to practise in each of the states in the USA. A significant weakness in the NCLEX was the exclusion of a clinical competency assessment. Therefore, it was recommended that including

clinical competency assessment in licensing examinations will lead to quality clinical performance among licensed nurses (Shin et al., 2017).

The National Council of State Boards of Nursing of the USA regularly calls for institutions to research the National Council Licensure Examination (NCLEX) for quality improvement purposes (Nursing, 2020). Many studies (Gorham et al., 2012; McGibbon et al., 2014; Shin et al., 2017; Woo et al., 2009; Woo & Dragan, 2012) have been conducted and published on the licensing examination in the USA, Canada, United Kingdom, Australia China, North Korea, South Korea, Philippines and Japan. Findings from the studies are essential in building the confidence of the public in the examining bodies.

1.1.4.2 Canada

Before 2015, the Canadian Nurses Association (2021) administered the Canadian Registered Nurse Examination and the Canadian Practical Nurse Registration Examination for registered nurses and registered practical nurses (McGillis Hall et al., 2018; Salfi & Carbol, 2017). A nurse must pass the examination before he or she can register to practice in Canada, except for Quebec (which conducts its licensing examinations) and the Yukon territory (which does not have a nursing education institution) (McGillis Hall et al., 2018. In 2011, the eleven provinces/territories' nursing regulatory body in Canada decided to adopt the NCLEX-RN as their licensing examination. However, there was an occurrence of a very low pass rate (69%) in Canada when the NCLEX was adopted from the United States of America without proper stakeholder consultation (McGillis Hall et al., 2018). Following that, the Canadian Nursing Association and the Canadian Nursing Students' Association collaboratively developed student resources to help graduate students effectively prepare for the NCLEX-RN examinations (Canadian Nurses Association, 2021).

1.1.4.3 United Kingdom

In the United Kingdom (UK), the university where a student nurse training is responsible for assuring that the nurse has met the required standards and so a centralized examination is not required. Nurses are, however, required to undergo a re-evaluation process every three years. The Nursing and Midwifery Council (NMC) of the United Kingdom (UK) conducts a two-part licensing examination for foreign-trained nurses who wish to register and practice in the UK. The first part comprises "a computer-based multiple-choice examination ", which could be taken in almost all countries in the world. Part 2 consists of a clinical competency

assessment in the form of an Objective Structured Clinical Examination (OSCE) taken in the UK. They work to ensure that these professionals have the knowledge and skills to deliver quality and safe care (Nursing & Midwifery Council, 2020; Nursing and Midwifery Council, 2021b).

1.1.4.4 Australia

In Australia, the licensing domestic, trained nurses must complete all units to a standard to be job-ready. It would help if you were deemed competent with each unit to receive your qualification. Each unit contains assessments that may include:

practical demonstrations where you will be observed by one of our assessors in a simulated environment and your work placement, observation conducted at the Professional Experience Placement again administered by NTA (Nurse Training Australia) Assessors, knowledge-based tests were containing written short answer questions. These small projects contain written tasks for you to investigate and complete in your own time (Nurse Training Australia, 2020).

There are separate examinations for internationally qualified nurses and midwives (IQNMs) intending to register in Australia as a registered nurse (RN), an enrolled nurse (EN), or a midwife. The licensing examination includes a multiple-choice questions MCQs examination and an Objective Structured Clinical Examination as part of an outcomes-based assessment (Nursing and Midwifery Board of Australia, 2020).

The examination assesses whether candidates demonstrate the knowledge, skills and competence of a graduate-level nurse or midwife from an Australian study program (Nursing and Midwifery Board of Australia, 2020).

The RN MCQ examination is the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The National Council of State Boards of Nursing (NCSBN) develops and administers the NCLEX-RN through Pearson VUE and their authorised examination centres, the third party in Australia (Nursing and Midwifery Board of Australia, 2020).

1.1.4.5 China

China established the National Nursing Licensure Examination (NNLE) in 1995 as a nursing licensing examination. Regulation of nursing standards was not present before that year, which negatively impacted the quality of nurses that passed out from the nursing schools.

From 1995 to 2010, the examination was divided into five subjects: basic nursing, internal medicine nursing, surgical nursing, obstetrics and gynaecology nursing, and paediatric nursing. Psychology, ethics, and regulations were gradually incorporated as well. The examination time was eventually reduced from two days to a single day of assessment. In 2011, significant changes were made to the test contents, as the test's focus shifted from being science-based to a more clinical examination. This was intended to align the examination more closely with clinical practice to assess examinees' knowledge and ability better. In addition to basic nursing knowledge, communication skills and nursing ethics were included in the assessment. Questions concerning nursing administration, education, and traditional Chinese medicine were also added to the test. During the same year, the number of test subjects decreased from four to two. The former categories of basic knowledge, knowledge of relevant specialities, specialised knowledge, and professional practice skills were reorganised into basic science knowledge and nursing skills. An examinee must pass both sections to obtain a qualification as a registered nurse (Hou et al., 2019).

In May 2016, computer-based tests (CBT) were successfully implemented in three regions, while other regions continue to use the traditional paper-based test. The examination results demonstrate improved quality and security with CBT compared to paper-based tests. At present, the overall management and implementation of the NNLE have been gradually catching up to meet internationally recognised measurement standards. Following CBT's success in 2016, the National Health and Family Planning Commission decided, in 2017, to apply computerised examinations throughout China. Eligibility for the NNLE includes: completing a nursing or midwifery program which of at least three years, graduating from a nursing or midwifery speciality in a secondary school or higher education institution, completing a clinical clerkship in a teaching or comprehensive hospital for at least eight months, and obtaining a diploma, associate degree or bachelor degree. In China, the exam is held simultaneously throughout the country and offered only once per year (Hou et al., 2019). Since 2017, the NNLE has been provided in the CBT format at test centres located across China (Hou et al., 2019).

1.1.4.6 South Africa

Professional nurses' efficient production with the requisite competences is essential in increasing nurses' production to give quality healthcare and healthcare systems for the populace (Bvumbwe & Mtshali, 2018). In South Africa, a summative examination was conducted for final year nursing students to be registered by the South African Nursing Council. However, from 2024, the summative examination will be replaced by a licensure examination conducted in English only (South African Nursing Council, 2020). The summative examinations were conducted for legacy nursing programmes such as general nursing, psychiatric nursing, midwifery, general nurses, a ffirst-year examination for the Bridging Course for Enrolled Nurses leading to registration Nurse (South African Nursing Council, 2020). The licensing examination will be the prerequisite for registration as a nurse by the South African Nursing Council (SANC).

In Sub-Saharan Africa, nursing education continues to experience underinvestment, static and rigid curricula, lack of inter-professional preparation of nurses and a lack of coordinated collaboration and support from stakeholders (Bvumbwe & Mtshali, 2018). An integrative literature review which aim at identifying nursing education challenges and solutions in Sub Saharan Africa to inform development of a model for improving the quality, quantity and relevance of nursing education at local level identified six thematic areas related to requirements to ensure practical nurses and midwives' receive adequate training in Sub-Saharan African Countries. These included curriculum reforms, professional regulation, transformative teaching strategies, collaboration and partnership, capacity building, infrastructure, and resources. The review pointed out that strengthening nursing councils and nursing associations will improve their regulatory functions (Bvumbwe & Mtshali, 2018).

Countries in Sub-Saharan Africa face challenges with nursing education, ranging from increased enrolment, inadequate faculty capacity, lack of infrastructure and resources, and high demand for clinical training sites (Bvumbwe & Mtshali, 2018). Efforts must be made to expand the number of clinical sites, build faculty capacity, and collaborate with clinical institutions for clinical instructors and mentors. There is also the need for reforms in curriculum and technology-based teaching strategies to enhance effective learning (Bvumbwe & Mtshali, 2018).

1.2 NURSING EDUCATION IN GHANA

Basic education spans eleven years in Ghana. Pre-school, which is termed kindergarten, takes two years. The children continue with Primary school for six years and Junior High School for three years. A pupil must pass the Basic Education Certificate Examination (BECE) at the end of the eleventh year of the basic education to qualify for Senior High School for three years. The courses include General Science, General Arts, Business, Home Economics, Agricultural Science, Technical Skills and others. At the end of the third year, students write the West Africa Senior Secondary Certificate (WASSCE) Examination, a joint examination with other West African countries such as Nigeria, Liberia, Sierra Leone, and The Gambia. In Ghana, a High School leaver must pass the WASCE examination to qualify to train as nurses as nursing is placed within the higher education sector. (Christmals, 2018).

Nursing education in Ghana is a higher education qualification that takes a minimum of three years to complete (Christmals & Gross, 2019; Opare & Mill, 2000). Professional nursing education is provided through a three-year diploma programme at a training college level and a four-year bachelor's degree programme at the universities (Salifu et al., 2019). After completing any professional programme, a student must pass a licensing examination and complete a mandatory one-year clinical internship before being allowed to practice. Nurses practice from the highest level of care (quaternary/ specialist and teaching hospitals) to the lowest and most peripheral level where medical and allied health practitioners do not commonly practice and where nurses are the only professional staff available to patients (Asamani et al., 2018; Christmals & Armstrong, 2019).

Graduate education in nursing in Ghana started at the University of Ghana. Two other universities (the University of Cape Coast and Kwame Nkrumah University of Science and Technology) train nursing students at the Master's level. Some private universities have been accredited to train nursing students. Nursing education at the PhD level began in 2020. Professional programmes in specialist nursing in Ghana have been implemented by the Ghana College of Nurses and Midwives (GCNM). Graduates of the college become fellows. Associate programmes are implemented for one year and membership for three years. The specialist courses are paediatric nursing, palliative nursing, neuroscience nursing, oncology nursing, haematology nursing, neonatal nursing and women's health (GCNM, 2019).

1.2.1 Clinical Education in Ghana

Clinical education in Ghana is planned and implemented by individual Nursing Educational Institutions (NEIs) in line with the regulations Nursing and Midwifery Council of Ghana (N&MC). The N&MC prescribed nursing skills (basic, intermediate and advanced skills) in a procedure manual developed in 1995 for nursing students' clinical training in Ghana. Students are assigned to preceptors and lecturers/tutors responsible for clinical placement, teaching and assessment (Ebu Enyan et al., 2020). The procedure manual has not been revised since its development in 1995. Despite the training manual not being updated, the N&MC assessment tools used by the N&MC in the summative (licensure) examinations are revised from time to time. This introduces inconsistencies in the training and assessment of the students. Students and clinical assessors often report surprises in the changes introduced by updated tools in the licensure examination. To mitigate the surprises during the licensing examination, lecturers/tutors tend to use different textbooks and online sources that provide updated versions of clinical procedure in teaching students. Because books written by different authors prescribe different ways of performing nursing procedures, students' clinical training is not standardised in Ghana.

1.2.2 Licensing examination in Ghana

Students who complete the nursing programme can register to write the licensing examination organised by Ghana's regulatory body. The examination is in three parts: a clinical examination, a viva on a patient and family care study, and the online multiple-choice theory questions (Christmals & Gross, 2019). Successful candidates are required to complete a mandatory supervised one-year internship (national service) to be licensed as a nurse.

General nursing students take three online examinations consisting of multiple-choice questions, namely medical nursing, surgical nursing and a general examination. The papers are written within three days, beginning with medical nursing, surgical nursing and ending with the general paper. The general paper integrates other courses that have been taught, such as therapeutic communication, nursing ethics, perspectives in nursing, paediatric nursing, psychiatric nursing, public health nursing and obstetric nursing.

For the patient and family care study, the nursing students must identify one patient with a particular condition and care for them and the family. The student nurse is expected to care for the patient on the ward and follow-up in their home. At the care's termination stage, the

student nurse hands over the patient to the community health nurses for continuous care. Nursing students are expected to submit a written report of the care and defend the care study during the licensing examination. Students are scored on the content and how they defend the work during viva (oral examination). The assessment process is standardized, and it is taken by students from both public and private Nursing Education Institutions (NEIs).

1.2.3 Assessment of Clinical Competency in Nursing in Ghana

Currently, clinical nursing examinations are conducted through task-based structured observations. Students are allocated to a specific clinical facility based on a memorandum of understanding between the clinical facility, the Nursing Education Institution, and the N&MC. An examination team consists of a nurse educator, a nurse clinician and an invigilator who is also a nurse. Pre-examination meetings are held between the examiners and the students to clarify examiners' expectations.

On the day of the examination, the students are kept in a room within the ward or outside. Six students are examined by a pair (an educator and a clinician) of examiners per day. The students are given thirty minutes to complete a nursing care plan on an assigned patient. After 30 minutes, the care plans are collected from the students, and two tasks based on the nursing diagnosis and orders given by the student in the care plan are assigned to the student to perform within 90 minutes. The two examiners then assess the student independently using assessment rubrics (component tasks) provided by the N&MC. These tools have a rating scale of 0-4 and vary in the number of items assessed, based on the task assigned, and range from 8 to 25 items. The two examiners then reach a consensus on their rating of the students. A student needs an average of 55% to pass the examination. However, this pass mark can be reviewed by the council.

1.3 PROBLEM STATEMENT

There is a national centralised system for assessing candidates' clinical competence before licensing as nurses influence the nursing workforce's quality. Though students and nurse educators complained about the quality of various aspects of the clinical competency assessment process, an integrative literature review conducted by Christmals et al. (2018) found no empirical studies which evaluated clinical assessment in the study site. Findings from a study conducted by the regulatory body to assess Ghana's licensing examination

challenges dwelt more on the theory component of the licensing examination (Wilmot et al., 2013). The lack of empirical evidence on clinical competency assessment in Ghana poses a critical challenge. It is not known if the clinical competency assessment process exhibits all the criteria for good assessment as stipulated in the *Consensus statement and recommendations from the Ottawa 2010 Conference* (Norcini et al., 2011).

As a result, students complain that they are not uniformly evaluated, resulting in an unfair and unreliable system. Complaints include biases in the allocation of patients, examiners and procedures/tasks during clinical examinations in Ghana; no determination of interrater reliability of examiners; selection of patients for the examination is based purely on convenience. These problems identified to result in a high risk of competent students failing and vice versa; therefore, it is essential to develop an evidence-based framework to assess nursing students' clinical competency in Ghana to standardise and improve clinical assessment quality. A framework can also guide the Nursing Education Institutions on how to grade students to identify their weaknesses and offer remediation before summative clinical examinations (Kennedy & Chesser-Smyth, 2017).

1.4 RESEARCH QUESTION

How can the clinical competence of nursing students in Ghana best be assessed?

1.5 PURPOSE OF THE STUDY

To develop a framework to guide the assessment of nursing students' clinical competence in Ghana with the intention to standardise and improve the quality of clinical assessments.

1.6 OBJECTIVES OF THE STUDY

This study intends to meet the following objectives:

i. To explore current practices of assessment of clinical competence in the international literature.
ii. To conduct a situational analysis of the current system of assessment of clinical competence in Ghana.
iii. To develop a framework for the assessment of clinical competence of nursing students in Ghana.

iv. To evaluate the framework for the assessment of clinical competence of nursing students in Ghana for clinical utility.

1.7 SIGNIFICANCE OF THE STUDY

Findings from the study may illuminate the process of planning, administering and monitoring the assessment of clinical competence of nursing students. Additionally, the findings may inform the Nursing Council on the challenges that students and examiners face so they can find remedies to the challenges.

Also, the findings may provide an opportunity for the Nursing Council to review some of their resources and also develop novel ideas about the assessment of clinical competence of nursing students. The study may also identify some gaps that need to be sorted to enhance the credibility of the assessment system.

1.8 OPERATIONAL DEFINITIONS

Table 1.1: Operational definitions

Concept	Definition
Assessment	Assessment is the process of gathering and evaluating the information on what students know, understand, and can do to make an informed decision about the next steps in the educational process (Clarke, 2011)
Clinical competence	A mix of knowledge, attitudes and abilities that each nurse must possess to perform acceptably those duties directly related to patient care, in a specific clinical context and given circumstances to promote, maintain, and restore the health of patients (Notarnicola et al., 2016)
Nurse educator	Tutors (nurse educators at the nursing training colleges) and lecturers (nurse educators at the universities) who teach and examine students in nursing training colleges and universities in Ghana.
Clinicians	Professional nurses who work in the hospitals and assess licensing clinical competence of nursing students
Nursing students	Individuals registered for general nursing programmes at a nursing college or university departments/schools of nursing in Ghana.
Framework	A document that defines the principles, scope and approaches used to guide decisions relating to assessment in the organisation
Training programmes	Training is provided for all members of the examination team. This includes the heads of schools, examination coordinators, nurse educators and clinicians, and invigilators

Stable and reliable funding	Available funding for the planning and implementation of the examination process
Clinical competency assessment framework	Guiding concepts and ideas around which a quality clinical competency assessment is designed and implemented (Clarke, 2011).
Examination facilities	Healthcare facilities that are used as centres for clinical competence examinations

1.9 ORGANISATION OF THESIS

This thesis is sub-divided into nine chapters, as described in Table 1.2

Table 1.2: **Overview of the thesis**

	CHAPTER	**OBJECTIVES**
1	Overview of the study	Entails the introduction and background of assessment of clinical competence of nursing students
2	Research Methodology	Description of the methods that were used to answer the research questions and develop and test the draft framework
3	The Scoping Review	To explore current practices of assessment of clinical competence in the international literature
4	Qualitative Document Analysis	To conduct a situational analysis of the current assessment system of clinical competence in Ghana using documents sourced from the Nursing and Midwifery Council of Ghana.
5	An exploratory, descriptive study of clinical assessment by key informants	To conduct a situational analysis of the current system of assessment of clinical competence in Ghana from critical informants (nurse educators, clinicians and manager)
6	An exploratory, descriptive study of clinical assessment by nursing students	To conduct a situational analysis of the current system of assessment of clinical competence in Ghana from nursing students
7	Development of a framework for the assessment of clinical competence of nursing students in Ghana framework	To develop a framework for the assessment of clinical competence of nursing students in Ghana

8	Evaluation of the framework for clinical utility by clinical experts	To evaluate the framework for the assessment of clinical competence of nursing students in Ghana for clinical utility
9	Framework	To present the framework after expert review
10	Discussion, conclusion and recommendations	To discuss the results of the study and then conclude and provide recommendations.

1.10 CHAPTER SUMMARY

Chapter one presented an overview of the study and a brief literature review. It introduces the background to the assessment of clinical competency skills, clinical nursing education in Ghana, current clinical assessment in Ghana, the problem statement, the study's significance, research question, objectives of the study, conceptual definitions and organisation of the thesis. The methodology of all the phases of the study is described in the next chapter.

CHAPTER 2 : RESEARCH METHODOLOGY

2.1 INTRODUCTION

This chapter describes the multimethod research design carried out in four phases. It explains how the six milestones of the design and development research method guided this research's four phases. The research setting, research paradigm, research design, summary of research methods, methodological rigour, and ethical considerations are presented in this chapter. All the study phases helped develop the framework for assessing general nursing students' clinical competence in Ghana.

2.2 RESEARCH SETTING

Ghana, a West African country, shares borders with Côte D'Ivoire to the west, Togo to the east, Burkina Faso to the north and the Gulf of Guinea to the south. Ghana covers 238,533 square kilometres, with a population of 24,658,823 (GSS, 2012). Before the demarcation, there were ten administrative regions in Ghana, zoned into southern, middle, and northern zones (Figure 2.1). In 2019, the country's ten regions were re-demarcated into 16 new regions (Figure 2.2). However, this study used the previous ten regions in figure 2.1 since the study was designed and approved before the re-demarcation.

As of 2018, there were 106 Nursing Education Institutions (Table 2.1); (5 public universities, 65 public colleges and 36 private colleges and university colleges) accredited by the N&MC in Ghana (N&MC, 2018). There are two training levels, namely the Bachelors' degree level and diploma offered at the university and Colleges, respectively. The Bachelor of Science/Arts programme is a four-year degree, while the Diploma in Nursing is a three-year programme. Although all institutions have their specific cut-off points and other criteria for admission, the degree programme's general entry requirements and the diploma in the nursing programme are the same. The Ministry of Education prescribes them.

Figure 2.1: The three zones of Ghana (Pre-demarcation 2019)

[**Source**: copied from (Nortey et al., 2015)]

Figure 2.2: The sixteen regions of Ghana post demarcation 2019

[Source: https://www.easytrackghana.com/travel-information-ghana-maps.php]

Table 2.1: Regional Distribution of Accredited Nursing Education Institutions in Ghana

REGION	PRIVATE NTC	PUBLIC NTC	PRIVATE UNIVERSITY	PUBLIC UNIVERSITY
*GAR	• Western Hills School of Nursing, Accra • NarhBita College, Tema • Family Health University College School of Nursing and Midwifery, Teshie-Nungua, Accra	• Nursing & Midwifery Training School, Korle-Bu, Accra • Nursing & Midwifery Training School, 37Military, Accra. • Nursing & Midwifery Training College, Teshie.	• Valley View University, Oyibi, Accra • Central University, Miotso • St. Karol Sch. of Nursing, Weija, • Pentecost University College, Sowutuom Accra • West End University College, Weija Accra • Ghana Christian University College, Adenta-Accra • Wisconsin International University College, Accra • Oak City International College Madina-Accra • Knutsford University College	• University of Ghana, Legon, Accra
*AR	• Premier School of Nursing, Moshie Zongo, Kumasi • College of Integrated Healthcare, Obuasi • Royal Ann College	• Presby Nursing and Midwifery Training College , Agogo • Nursing & Midwifery Training College, Kumasi • SDA Nurses Training College, Kwadaso • Nursing and Midwifery Training College, Ashanti Mampong	• Presby University College, Agogo • Christian Service University College, Kumasi • Garden City University College, Kumasi (Dip. & BSc) • Ghana Baptist University College,	• Kwame Nkrumah University of Science and Technology, Kumasi

REGION	PRIVATE NTC	PUBLIC NTC	PRIVATE UNIVERSITY	PUBLIC UNIVERSITY
	Of Health, Kumasi • Neumann College, Kumasi • Withrow College • Afia Kobe Ampem Nurses Training College,	• Nursing and Midwifery Training College, MaaseOffinso • Nurses Training College, Kokofu • Nursing and Midwifery Training College, Tepa	Kumasi	
*BAR	• Methodist University College, Wenchi (DIP.)	• Nursing and Midwifery Training College, Sunyani • Holy Family Nursing and Midwifery Training College , Berekum • Midwifery Training School, Dormaa Ahenkro • Nurses Training College, TechimanKrobo • Nurses Training College, Seikwa • College of Nursing, Ntotroso • Holy Family NMTC, Kenten, Techiman • Nurses' Training College, Sampa • Nursing Training College, Kwapong • Nursing and Midwifery Training College, Dadiesoaba	• Catholic University College, Fiapre • Anglican University College of Technology, Nkoranza	
*ER	• Nursing and Midwifery Training College,	• Nursing and Midwifery Training College, Koforidua	• All Nations University, Koforidua	

REGION	PRIVATE NTC	PUBLIC NTC	PRIVATE UNIVERSITY	PUBLIC UNIVERSITY
	Afosu • VRA College of Nursing, Akosombo • Hopkins Health Training Institute, AkimOda	• Holy Family Nurses Training College, Nkawkaw • Nursing and Midwifery Training School, Atibie • Nurses Training College, Osiem		
*VR		• Nurses Training College, Ho • Nurses Training College, Keta	• Modal College, Sgakope(Dip. & BSc)	• University of Health &Allied Sciences, Ho
*CR	• BIMAKS College of Business and Health Sciences, AgonaSwedru	• Nursing and Midwifery Training College Cape Coast • Nursing and Midwifery Training College, Twifo Praso • Nursing and Midwifery Training College, Dunkwa – On-Offin	• KAAF University College, Kasoa	• University of Cape Coast
*WR	• Potters College	• Nursing and Midwifery Training College Sekondi • Midwifery Training School, Tarkwa • Nursing and Midwifery Training College, Asakrangwa • Community Health Nurses Training College, Esiama		

REGION	PRIVATE NTC	PUBLIC NTC	PRIVATE UNIVERSITY	PUBLIC UNIVERSITY
		• Nursing and Midwifery Training College, Sefwi Wiawso • Nursing and Midwifery Training College, Asanta		
*NR		• Nursing and Midwifery Training School, Tamale • Nursing and Midwifery Training College, Kpembe • Nursing and Midwifery Training College, Yendi • Nursing and Midwifery Training College, Nalerigu • Nurses Training College, Damongo	• Technical University College, Tamale (BSC & DIP)	• University for Development Studies, Tamale
*UER		• Nurses Training College Bolgatanga • Presbyterian Nurses Training College, Bawku • Nursing and Midwifery Training College, Zuarungu		
*UWR		• Nurses Training College, Jirapa • Nurses Training College, Wa • Nurses Training College, Lawra		
Total	**14**	**46**	**18**	**5**

*GAR-Greater Accra region *AR – Ashanti Region *BAR- Brong Ahafo Region *ER-Eastern Region *CR-Central Region *VR-Volta region *WR-Western Region *NR-Northern region *UER-Upper east Region *UWR-Upper West Region

2.3 RESEARCH PARADIGM

The study's philosophical underpinnings were guided by Pragmatism, developed in the late 19th and early 20th century as a philosophical movement that focused on the practical consequences of social reality (Kelly & Cordeiro, 2020). It is attributed to Charles Peirce, William James and John Dewey. Dewey explained that, if examined thoughtfully and systematically, pragmatism could uncover social realities more clearly than philosophical approaches that assumed human behaviour and action existed apart from understanding (Kelly & Cordeiro, 2020).

Pragmatism dwells on the “what works”, mainly referring to the pragmatic theory of truth-oriented toward solving practical problems in the real world rather than being built on assumptions about the nature of knowledge (Creswell, 2014). They believe in the multiple realities of every phenomenon as one needs to look at what works at a particular time. A pragmatic stance enables a researcher to identify and employ research methods to answer the research questions.

According to pragmatics, there is no distinction between research approaches but rather the utilisation of either qualitative or quantitative methods in research as complementary and dependent on the notion of what works at a particular time (Maarouf, 2019). Therefore, a researcher utilising a qualitative approach in dealing with observable human actions exactly like quantitative experimental research with the difference that qualitative researchers are interested in the detailed descriptions of these actions and the meanings. Also, quantitative researchers deal with the same knowledge source in a structured quantitative manner that simplifies the situation into variables and relationships (Maarouf, 2019). In answering the research question on “How can clinical competency of nursing students be assessed effectively”, the researcher needed to employ various research designs that are scientifically sound and practicable within the setting, hence the decision to position this study in the pragmatic paradigm (Kelly & Cordeiro, 2020).

Through vast literature on assessing nursing students' clinical competency, scoping enabled the research to identify current practices and not necessarily the quality of the papers. This provided a global overview of how clinical competency assessment is done. The scoping review was followed by an analysis of policy documents on clinical competency assessment in Ghana. This enabled the researcher to findings from the document analysis with

experiences of key informants and nursing students who had in-depth knowledge and experiences with clinical competency assessment of nursing students in Ghana (Kelly & Cordeiro, 2020). Using various situational analysis, participants enabled the researcher to identify various aspects of assessing clinical competency from different perspectives (Kelly & Cordeiro, 2020).

2.4 RESEARCH DESIGN

An exploratory sequential multimethod design in four phases was employed in this study (Hunter & Brewer, 2015; Lytra et al., 2012). Multimethod designs are sometimes referred to as mixed-method or mixed-model research; however, multimethod designs involve research methods from the same or multiple paradigms used in series or parallel (Creswell, 2014). Mixed-method and mixed-model research designs are characteristic of mixing two paradigms, positivist and interpretivist, in a single study; therefore, they are not the same as multimethod design. In simplifying the argument, Hunter and Brewer (2015) stated that mixed method studies are a subset of multimethod studies as multimethod studies involve mixing different paradigms and using more than two research methods within the same paradigm.

A multimethod approach "is a strategy for overcoming each method's weaknesses and limitations by deliberately combining different types of methods within the same investigation" (Hunter & Brewer, 2015). Phase 1 consisted of a scoping review which was followed by a situational analysis (Phase 2) which comprised of qualitative document analysis, a qualitative study (key informant interviews with educators and clinicians and focus group discussion with students) (Table 2.2). The findings from phase 1 and 2 of the study then served as the data for development of the draft framework. The draft framework was developed following the six milestones of the design and development research methodology (Ellis & Levy, 2010) thus: problem identification, defining the objectives, designing and development of the framework (artefact), testing the framework, evaluating the results, and communicating the results. These milestones are described in detail below. The draft framework was, as part of these steps, subjected to an expert review in a nominal group discussion. The framework was then finalized and presented as shown in this thesis.

2.4.1 Design and development research method

In design and development research, certain factors are expected to be present: the research must be driven by a problem that is appropriate for the type of research being conducted, must be based on research questions that the type of research being conducted can answer, it must acknowledge the assumptions, limitations, and delimitations upon which the research is based, then, research can only produce results that are obtainable from the methods employed. Finally, research must communicate conclusions that are supportable by the results (Ellis & Levy, 2010). Identification of the problem motivating the study should be the first step in design and development research (Peffers et al., 2007). For design and development type of research to present the potential for making a meaningful contribution, the problem must be one that can be addressed by some form of human creativity or interaction. The main aim of design and development research is to add to the knowledge base in a particular discipline.

2.4.1.1 Six milestones for design and development

The six milestones include problem identification, defining the objectives, designing and developing the framework, testing the framework, evaluating the results, and communicating the results (Ellis & Levy, 2010).

First and foremost, the emergence or evolving conditions of an existing problem can necessitate the beginning of design and development studies in order to produce a tool or model that can effectively solve the problem. Objectives are set to indicate what requirements the product (tool, model) meet to address the problem—a description of the objectives to show the design and development process's need.

2.4.1.1.1 Identify the problem motivating the framework development

This is the first part of the development process, where the researcher states clearly the problem, which is research-worthy. The problem must drive the design and development so that, in the end, a model or tool is developed to solve the problem (Ellis & Levy, 2010). The problem motivating the development of the framework in this study is the researcher’s personal experiences with clinical competency assessment in Ghana coupled with complaints the researcher received from nursing students and other clinical assessors who undertook the clinical competency assessment. Anecdotal evidence was verified through the empirical studies (situational analysis) conducted by the researcher on the current assessment of nursing students' clinical competence in Ghana.

2.4.1.1.2 Defining the objectives

The objectives of the study determine the research question that the study needs to answer. The study needed to answer the research question: 'How can clinical competence assessment for general nursing students best be assessed? The objective of this study was to develop a framework for assessing the clinical competence of nursing students in Ghana. The situational analysis conducted in the second phase of this study helped identify how a framework can be developed to assess nursing students' competency (Ellis & Levy, 2010).

2.4.1.1.3 Designing and development of the framework

The researcher uses the findings to design and develop either a tool or an artefact. Ellis & Levy (2010) advised that the developer should use a model to guide the development of the draft framework for testing. In this study, the "*Framework for Building an Effective Student Assessment System"* developed by Clarke (2011) as part of the World Bank's Systems Approach for Better Education Results (SABER) guided the design and development of the framework for assessing clinical competency of nursing students in Ghana.

2.4.1.2 Testing the framework

This is the stage where the artefact developed is tested to see if it meets the purpose for which it was developed. In this study, the draft framework was presented to experts to ascertain its relevance, context-specificity and clinical utility. The results from the experts were used to improve the draft framework that had been designed.

2.4.1.3 Evaluating the results

This phase was beyond the scope of the doctoral study. The researcher intends to evaluate the framework in a post-doctoral study because the draft framework needs to be implemented before it can be evaluated.

2.4.1.4 Communicating the results

The draft framework and other findings were communicated in the thesis presented at the end of the study.

Table 2.2: Summary of Methods

Phase	Objective	Research method	Sample	Data collection	Data analysis
1	To explore current practices of assessment of clinical competence in the international literature	Scoping review using Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.	**Databases:** PubMed, CINAHL, Scopus. **Search words:** assessment; clinical nursing; competence/skills	Data will be extracted from studies using the data extraction sheet outlined in (De Souza & Carvalho, 2010)	Synthesis of findings
2	To conduct a situational analysis of the current system of assessment of clinical competence in Ghana	2.1 Qualitative Document Analysis	2.1. Policies and assessment tools related to clinical assessment	2.1. Relevant content of official documents relating to clinical assessment in Ghana will be extracted using a document review guide	2.1. Thematic content analysis of policies, validity and reliability tests of tools (Bowen, 2009)
		2.2 Exploratory, descriptive design	2.2. Key informants: lecturers, assessors and managers	2.2. Semi-structured interviews	2.2. Thematic content analysis (Hsieh & Shannon, 2005)
		2.3 Exploratory, descriptive research	2.3. Student nurses	2.3. Focus group	2.3. Thematic content analysis

Phase	Objective	Research method	Sample	Data collection	Data analysis
		design			(Hsieh & Shannon, 2005)
3	To develop a framework for the assessment of clinical competence of nursing students in Ghana	Guided by the six milestones of Research and design methods (Ellis & Levy, 2010; Peffers et al., 2007) using World Bank framework for Building an Effective Student Assessment System (Clarke, 2011)		Milestones: identify the problem; describe the objectives; design and develop the framework; subject the framework to testing; evaluate the results of testing; and communicate results	
4	To evaluate the framework for clinical utility	Qualitative descriptive exploratory design	Purposively selected experts from Ghana representing educators, Nursing Council members, nursing students The draft framework will be presented to the experts in N&MC for review	Nominal group technique for issues that need engagement	Expert consensus on clinical competence and content of the draft framework served as the inclusion criteria

2.4.1.5 Aligning the research design methodology with the multimethod design in this study

2.4.2 Phase One: Scoping Review

The Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) was used to guide the scoping review. The methods used, the findings, and the scoping review's discussion are discussed in detail in chapter 3.

2.4.3 Phase Two: Situational analysis

This phase was subdivided into three stages: document analysis; semi-structured interviews with key informants (nurse educators, clinicians and manager); and focus group discussions with nursing students.

2.4.3.1 Document analysis

Documents were officially sourced from the Nursing Council. Document Analysis, as outlined by Bowen (2009), was employed. The researcher undertakes the detailed methods and research activities that have been described in Chapter 4.

2.4.3.2 Semi-structured interviews of key informants

Semi-structured interviews were conducted with twenty (20) key informants comprising nursing educators, nurse clinicians and nurse managers who had at least five years' experience in clinical competency assessment of nursing students in a qualitative descriptive study. The researcher undertakes the detailed methods and research activities that have been described in Chapter 5.

2.4.3.3 Focus groups discussion with nursing students

Eight focus group discussions were conducted with 68 nursing students who had completed their training and had just undergone their clinical competency assessment. The researcher undertakes the detailed methods and research activities that have been described in Chapter 6.

2.4.4 Framework Development

Data from the scoping review and the situational analysis were used to develop the framework for assessing nursing students' clinical competence in Ghana. The development of the draft framework for assessing clinical competence of nursing students was guided by the design and development research method (Ellis & Levy, 2010) and the World Banks's framework for building an effective assessment system (Clarke, 2011). The researcher undertakes the detailed methods and research activities that have been described in Chapter 7.

2.4.5 Phase four: Expert Review

Experts in clinical nursing competence assessment were gathered to review the draft framework in a Nominal Group Discussion. The researcher undertakes the detailed methods and research activities that have been described in Chapter 8.

2.5 METHODOLOGICAL RIGOUR

The study's trustworthiness was guided by the four areas of methodological rigour outlined by (Lincoln & Guba, 1985). They are credibility, transferability, dependability and confirmability.

2.5.1 Credibility

Credibility refers to the accuracy or credibility of the findings, or it can be described as a "truth formulating process" between the researcher and the informants (Lincoln & Guba, 1985).

Credibility was ensured by demonstrating an accurate picture of the phenomenon under study. There was a prolonged engagement with participants at various sites, ensuring that more information was received from participants. Participants were presented with the information sheet, consent form, and guiding questions for the interview, discussions, and a nominal group technique workshop. This, therefore, equipped the participants with knowledge about the purpose of the study so that they contributed very well (Forero et al., 2018). Prolonged interaction with the participants before the data collection began enabled them to become acquainted with the environment, which enabled them to relax throughout the process.

Pretesting the semi-structured interview guide to resolve any shortfalls was done. During the interviews and discussion, prompts were also used, which clarified some of the participants' responses (Forero et al., 2018).

During the interviews and discussion, prompts were also used, which clarified some of the participants' responses (Forero et al., 2018). The use of MaxQDA software led to the effective management of the data from the twenty interviews. (Forero et al., 2018). Member checking was done by verifying the participants' responses during the data collection process; their comments were summarized to corroborate or otherwise documented.

The researcher used qualitative study in her master's level research and had also done some consultancy work on interviews and qualitative data analysis; therefore, she was familiar with the context. This made her qualified and experienced to collect data in the current study (Forero et al., 2018). Member checking was done by verifying the participants' responses during the data collection process; their comments were summarized to corroborate or otherwise, which was then represented and documented.

2.5.2 Transferability

The researcher presented a vivid description of the setting, methodology and participants in the study to be applied to another environment (Lincoln & Guba, 1985). Transferability is how study findings and results are generalised to other settings, situations, populations, circumstances. Transferability is relative and depends entirely on the degree to which the two studies' context is similar. Transferability was ensured by presenting a thick description of the setting, methodology and participants in the study. Three different sources of data were used to ensure that the study is representative of the context. The researcher ensured that participants had experiential knowledge in assessing nursing students' clinical competency (Forero et al., 2018). Stratified and convenient sampling techniques were used to sample the eight NEI's. To ensure that the study sample was as representative and diverse as possible, NEIs selected included both Diploma and Bachelor degree-awarding, private and public. All four categories of NEIs have peculiar issues with the assessment of clinical competency. Private NEI's were also included because they had some peculiar experiences from the public NEI's. Nurse educators, clinicians, and managers who had

five years or more in teaching and assessing nursing students' clinical competency were selected for the study. Final-year nursing students who had completed their training had registered for the exit licensing examination and finished the examination's clinical competency assessment part.

The purposive selection varied participants ensured that they were representative of the population under study and had real experiences and perspectives to share on assessing nursing students' clinical competency in Ghana (Forero et al., 2018). Applying such different methods and procedures and then triangulating or comparing the different 'paths' or results to see if they 'converge' upon the same findings and results serve to enhance the believability and robustness of the results a single method was used. Data saturation was reached after no new codes emanated from the study. Data saturation was reached after the 20^{th} participants, where no new information was received from participants (Forero et al., 2018).

2.5.3 Dependability

This is concerned with the stability of the data over time. Dependability describes issues accounting for dynamic changes in the phenomenon of study, design, or methodology as appropriate (Lincoln & Guba, 1985). Therefore, there is a need to demonstrate any changes or shifts in how the inquiry was conducted. Forero et al. (2018), in their study, explained that there should be a detailed description of the study protocol. After a preliminary search in the literature, the study protocol was written to find any existing study in the area under study. The researcher had to defend the purpose of the study to the protocol committee.

The semi-structured interview and discussion guides and probes were developed using the World Bank framework concepts for building an effective assessment system (Clarke, 2011). The questions were checked for content and face validity made clear to avoid ambiguities. During the interviews and focus group discussion, questions were asked clearly so participants could understand and contribute.

2.5.4 Confirmability

Confirmability was ensured by presenting the findings and the actual data from the interaction with all the participants. Verbatim quotes were provided for all themes and subthemes that are

presented in the results. All data needs to be tracked to its source. The logic used to assemble the interpretations into structurally coherent and corroborating wholes is both explicit and implicit in the case study's narrative (Lincoln & Guba, 1985).

The researcher ensured a smooth presentation of data from the study. Verbatim quotes supported themes and sub-themes from one or more participants to ensure transparency (Forero et al., 2018). Also, the researcher was guided by the data collection tool during the interviews. Participants shared their views on assessing the clinical competency of nursing students without intimidation. The interviews were recorded and transcribed verbatim and were used in the analysis and presentation. The opportunity was given to all participants to confirm or disconfirm comments that they have made through member checking (Lincoln & Guba, 1985).

As a clinical competency educator and examiners, the researcher had different interpretations of some of the study findings, however, researcher ensured that participants' experiences and perspectives were well represented in the findings (Forero et al., 2018). All data needs to be tracked to its source. Transcribed data and field notes were kept for verification (Lincoln & Guba, 1985).

In the study, an audit trail was maintained throughout the collection of data, transcription and analysis. Interviews and focus group discussions were documented every day immediately after they were conducted. Changes to the interview guides, such as new probes, were documented on the original copy to show the changes. During transcription of the data, the first two were transcribed independently by the researcher and the second supervisor. They met with the first supervisor to discuss the preliminary codes, interpret the emerging key concepts, resolve some coding discrepancies, and revise and document the codes. The rest of the transcripts were then uploaded into the MaxQDA software for data management (Forero et al., 2018). Backup for all the files were made and stored in a folder on the computer.

The researcher ensured a smooth presentation of data from the study. Verbatim quotes supported themes and sub-themes from one or more participants to ensure transparency. Also, the researcher was guided by the data collection tool during the interviews and focus group discussions. Participants were encouraged to share their views on assessing the clinical

competency of nursing students without intimidation. The moderator ensured that all participants make their contributions on any issue without being stopped because of time constraints. Interviews were recorded and transcribed verbatim and used in the analysis and presentation. Participants were allowed to either confirm or refute comments that they had made during the data collection process.

As a clinical competency educator and examiner, the researcher had different interpretations of some of the study findings. To ensure reflexivity in the study, the researcher discussed the supervisors' findings to ensure that participants' experiences and perspectives were well represented in the findings (Forero et al., 2018).

2.6 ETHICAL CONSIDERATIONS

In this study, the ethical considerations discussed were ethical approval, informed consent, risks and benefits, privacy and confidentiality, data usage and storage, voluntary withdrawal and conflict of interest.

2.6.1 Ethical Approval

Approval of the research topic (Annexure A) was given by the Post Graduate Committee of the University of the Witwatersrand, Johannesburg, before ethical approval was sought. Ethical approval was obtained from the University of Witwatersrand Human Research Ethics Committee (Medical) (M190433) (Annexure B) and the Ghana Health Service Ethics Review Committee (GHS-ERC008/04/19) (Annexure C) for the study. Formal written permission was sought from all the NEIs that were selected. Permission was sought from the head of schools (deans, head of departments, principals) before the nurse educators (Annexure D) and nursing students (Annexure E) were interviewed. Permission was also sought from nursing services directors in the selected health institutions before the nurse clinicians (Annexure D) were interviewed. Individual letters were sent to all nurse educators, clinicians and managers (Annexure F) and nursing experts (Annexure G) who participated in the study.

2.6.2 Informed Consent

Written informed participant consent was obtained from all participants before the interviews, focus group discussion, and expert reviews (Annexures H, I, J). Participants were presented with the information sheet (Annexures K, L, M), which introduced the researcher, affiliation and the purpose of the study. Also, participants who did not understand some parts of the information sheet requested clarification before interviews and discussions began. The participants were informed that they could decide whether or not the interview should be tape-recorded and that there were no consequences for not consenting for the interview to be recorded. All participants consented to the interviews and discussions to be recorded. Nursing students and critical informants were protected from unintentional harm. They were assured that they were under no obligation to participate if they do not feel comfortable due to my position as a nursing lecturer and examiner; however, their views were protected from third parties (Polonsky, 2019). Before the interview began, the consent forms were collected, and participants were asked to keep the information sheet if they needed to contact the researcher.

2.6.3 Risks and benefits

This study involved key informant interviews, focus groups and an expert review. Data collection for critical informants' interviews and focus group discussions with nursing students were done before the Covid -19 pandemic in Ghana. The Nominal Group Discussion for the expert review had to be done once the lockdown was over. Due to the researcher's compliance with all Covid protocols, an 80-seater room was used to accommodate the 15-member experts for the workshop, and all the windows and doors were opened for adequate ventilation. Hand sanitisers and paper towels were provided for each participant. A 2-metre space radius was kept between the participants and the researcher during the process. The information sheet and consent form gave the participant a choice to participate or not and withdraw from the study at any time they wished without any penalties. No participant received any material or financial benefits for participating in this study. They were given lunch and transportation to the workshop site.

2.6.4 Privacy/Confidentiality

The interviews were conducted at a private location chosen by the participant. No personal identifiers were used in the transcriptions of the interview as codes were assigned. Recorded

information from the tapes was transcribed, and transcripts were coded. During the interview, participants who wanted to contribute introduced themselves with the code number such as “P1” or “P2” before they spoke. In a situation where they wanted to support response by another participant, they mentioned the code of the person and not the name. Participants were assured that their identities and views would be kept in confidence and not shared with any other person. Since confidentiality cannot be guaranteed during focus group discussion, participants were told that data collected will be for research purpose only and will not be given to a third party. They were also encouraged to keep all information they have heard during the discussion and not divulge it to anyone. All possible identifiers that participants gave during the interviews were redacted from the transcripts. (Polonsky, 2019). Privacy and confidentiality were ensured as codes were used to identify participants, and only the researcher and supervisors had access to the transcripts and recordings. Experts were given pseudonyms (P1-P12) based on their sitting arrangement. All documents related to the study were kept under lock.

2.6.5 Data Usage and Storage

The recordings and transcripts were kept with a password known only by the researcher. No data was used for other purposes apart from the purpose explained to participants and documented in the information that was presented to the participants. All information that participants shared, including recordings, transcripts, and consent forms, were kept safe in a locked cupboard and will be retained for two years after the publication of the research study as prescribed by the Ghana Health Service Ethics Review Committee and the Human Research Ethics committee of the University of the Witwatersrand.

2.6.6 Voluntary Withdrawal

The participants were informed that they could withdraw from the study at any time without any penalties.

2.6.7 Conflict of Interest

The student and supervisors had no conflict of interest regarding this study.

2.7 CHAPTER SUMMARY

A multimethod design was used in the study. Scoping review outlined studies on assessing clinical competency;, then document analysis of documents sourced from the Nursing and Midwifery Council of Ghana; qualitative descriptive design which explored views and from key informants and nursing students on the assessment of clinical competency of nursing students; design and development method was used to design a framework for assessing clinical competency of nursing students and finally qualitative descriptive design. Participants included in the study were nursing students and critical informants (nurse educators, clinicians and managers). Ethical considerations were ensured during data collection, analysis, and management. The next chapter, which is chapter three, looked at the analysis of documents on assessing nursing students' clinical competence in Ghana.

CHAPTER 3 : SCOPING LITERATURE REVIEW

3.1 INTRODUCTION

As shown in Table 2.2, the study was conducted in four phases—phase one was a scoping literature review that explored current clinical competence practices in international literature. Phase two consisted of the situational analysis of the assessment of clinical competency in Ghana, which consisted of three main activities; document analysis, interview of key informants, and focuses group discussion of nursing students. In phase three the draft framework for the assessment of clinical competency was designed and developed. In phase four, the framework's utility in assessing nursing students' clinical competence was evaluated by means of an expert review. This chapter presents the objective and a brief overview of phase one's methodology and the results of phase one. This chapter presented the objective, and a brief overview of the methodology and results of phase one.

This review formed part of the study to develop an evidence-based, context-specific framework for Ghana's clinical competency assessment. In a recent review of nursing competency assessment in general, Reljić et al. (2017) stated that there are three main types of clinical competency assessment: conservation, self-assessment and a combination of both - the most common of all being structured observation using rubrics. Reljić et al. (2017) concluded that notwithstanding the system, approach, model or framework used for clinical competency assessment, it should measure knowledge, skills and problem-solving skills. Reljić et al. (2017) also proposed further research to develop and validate clinical competency assessment tools (system) (Reljić et al., 2017). The purpose of this review was to explore current global practices in clinical competency assessment of nursing students.

3.2 RESEARCH METHOD

This scoping review was guided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) (Annexure

N). Scoping reviews synthesize findings from empirical qualitative, quantitative and mixed-method studies. According to Christmals and Armstrong (2019a), scoping reviews are either conducted as a pre-systematic review or as a free-standing review to synthesize findings from empirical and grey literature on a complex concept. 'Clinical competency assessment' is a complex concept hence the choice of the methodology. The PRISMA-ScR checklist presents the necessary components that need to be in a scoping review, including defining and refining the review question; delineating the inclusion and exclusion criteria; and defining the search criteria, data extraction, synthesis and presentation of results (Tricco et al., 2018).

3.3 REVIEW QUESTION

The Population, Concept and Context (PCC) mnemonic developed by the Joana Briggs Institute guided the review question's refinement (Peters et al., 2020). This review sought to answer the question: "What are the current practices of assessing clinical competence skills for nursing students"?

Thus:

- Population(P): pre-registration students (nursing college and university levels).
- Concept (C): clinical competency assessment practices
- Context (C): globally

3.4 SEARCH AND INCLUSION

3.4.1 Search

In reviewing literature in nursing research, a researcher aims to provide answers to questions that will inform professionals and patients on the best available evidence when making decisions, influencing policy, and identifying future research priorities (Smith & Noble, 2016). There are about 14 types of literature reviews; however, they are categorised into four main types; narrative (descriptive reviews), scoping reviews, rapid evidence assessment, and systematic reviews. When

assessing the rigour of these styles of reviews on a continuum, narrative reviews and systematic reviews will be at the two extreme ends (Smith & Noble, 2016).

Whittemore & Knafl (2005) also identified four types of reviews: meta-analysis, systematic reviews, qualitative reviews and integrative reviews. Each of these review methods has a unique purpose, sampling frame, and analysis (Whittemore & Knafl 2005). Meta-analysis is a type of review that quantitatively combines the results of multiple primary studies on the same or similar topics, using statistical methods to enhance their objectivity and validity for application. It samples studies that use a similar design and hypothesis. Systematic reviews combine studies regarding a typical clinical problem to promote evidence-based practice in the clinical specialities. The review requires a specific clinical question, well-defined methods, and a thorough literature search. Systematic reviews typically use statistical approaches used in a meta-analysis when studies included in the review meet the meta-analyses' criteria. Alternatively, narrative analysis is done in combination with quasi-statistical approaches (Whittemore & Knafl 2005). Meta-synthesis, meta-studies, formal grounded theory, and meta-ethnography are names given to review methods that summarise qualitative studies on the phenomenon under study. These methods synthesize multiple studies results into an emerging theory or a comprehensive framework on the phenomenon under investigation (Russell 2005; Whittemore & Knafl 2005). Even though they all synthesize qualitative studies, these types of reviews differ in their approach and interpretation. These methods are sophisticated and can create difficulties if the researcher does not pay strict attention to rigour. They have the advantage of diversifying generalizability and ensuring the trustworthiness of the research findings (Whittemore & Knafl 2005)

Five databases: Scopus, PubMed, CINAHL, Wiley Online Library and ProQuest, were searched using varying combinations of the keywords: (Nursing OR Clinical) AND (Competence OR skill OR performance) AND (assessment OR evaluation). A preliminary search was conducted in Scopus and PubMed to test the initial vital words and the applicability of the Boolean combinations. The search keywords and the search strings were created using the Boolean operators were refined and used in the main search. For example, the search string used in the main PubMed search is presented in Box 1. All the studies identified were imported into a Mendeley desktop reference manager; all duplicates were identified and merged (Christmals et al., 2018; Mendeley, 2018). The author and one supervisor scanned the titles of the remaining

articles and excluded some. The second supervisor served as the adjudicator when the student and the first supervisor disagreed with a paper's inclusion or exclusion. After the title scan, and a scan of the abstracts of the articles, some were excluded at this stage. A backward and forward search was conducted on the remaining papers to see if the researcher had missed some papers.

Box 1: Search string in PubMed

(Nursing[Title] OR Clinical[Title]) AND (Competence[Title] OR skill[Title] OR performance[Title]) AND (assessment[Title] OR evaluation[Title])

3.4.2 Inclusion and exclusion

To achieve high-quality research, study participants' inclusion and exclusion criteria are standard, required practices (Patino & Ferreira, 2018). Inclusion criteria include demographic, clinical, and geographic characteristics. In contrast, exclusion criteria are defined as features of the potential study participants. They meet the inclusion criteria but present with additional characteristics that could interfere with the study's success or increase their risk for an unfavourable outcome (Patino & Ferreira, 2018). It is also essential to evaluate how inclusion and exclusion criteria decisions will impact the study results' external validity. Peer-reviewed literature published in English from 2014 to 2019, which meets the objective and the study's inclusion criteria, was included. The inclusion criteria employed were:

- Studies published in the English language
- Studies published between January 2014 and December 2019 were included.
- Studies that met 80% of the Joanna Briggs critical appraisal checklist.
- Studies conducted on the assessment of clinical competence in pre-registration programmes.

Studies excluded were:

- Studies conducted on the assessment of clinical competence of registered nurses

- Studies published prior 2014 and post December 2019
- Studies conducted on the assessment of clinical competence of professionals other than nurses.
- Studies conducted on postgraduate clinical competency among postgraduate students.

3.5 QUALITY APPRAISAL

A quality appraisal is a process of critiquing and appraising research evidence that aims to assess the methodological quality of a study and determine how a study has addressed the possibility of bias in its design, conduct, and analysis (Joanna Briggs Institute, 2020). The Joanna Briggs Institute (JBI) Critical Appraisal tools were used to evaluate the study's studies. Checklists included were the JBI Critical Appraisal for analytical cross-sectional studies, the JBI critical appraisal checklist for Qualitative research, and the JBI critical appraisal checklist for quasi-experimental studies. The reviewers agreed that a study would be included if it met 80% of the criteria set in each of the JBI Critical Appraisal tools (Joanna Briggs Institute, 2020).

3.6 DATA CHARTING/ EXTRACTION

Data charting describes a selected article's characteristics, including the author's name, year of publication, country of origin, and any information on the study area (Numminen et al., 2020). Other areas that are charted include research design, setting, data collection and data analysis. Data were extracted from studies using an adapted extraction sheet (Table 3.1) from De Souza and Carvalho (2010). The author and setting; the study's aim; methodology; data collection and analysis; and key findings were extracted. Table 3.2 presented the Clinical Competency Assessment Systems/Tools/Frameworks/Models.

Table 3.1: Data Matrix

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Quantitative studies included in the review				
1.	(Ahn, Heejung & Hyun Young, 2015) *Korea*	To implement two high-fidelity simulations to help nursing students integrate their cognitive and psychomotor skills to evaluate the students' simulation experience using the Simulation Design Scale and learning outcomes To analyse the correlation between students' simulation experience and these learning outcomes	Quasi-experimental post-test design Quantitative design	Five nursing experts and 69 nursing students ANCOVA was used to compare the experimental and control groups, and correlation coefficient analysis was used to determine the correlation among them.	Students rated guided reflection and fidelity highly in the designed simulations. Learning objectives were appropriate for third-year students Simulations led to higher self-confidence of students Improved performance in course material may be achievable with the addition of rigorous simulation design

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
2.	(Oetker-Black et al., 2014) *Tanzania*	To psychometrically evaluate the Clinical Skills Self-Efficacy Scale in a population of nursing students in Tanzania.	Quantitative study Psychometric evaluation .	287 nursing students enrolled in the preservice or in-service nursing programs at two schools Item analysis, reliability and validity were assessed. CSES included 12 items in a confidence scale designed to measure clinical skills self-efficacy expectations.	Evidence of construct validity. Future research focuses on self-efficacy and the successful transferal of clinical skills learned in a simulated laboratory to the clinical setting.
3.	(Teixeira et al., 2014) *Brazil*	To compare the level of anxiety and performance of nursing students when performing a clinical simulation through the traditional method of assessment with the presence of an evaluator and a filmed assessment without the presence of an evaluator	Quantitative study Randomized control trial	20 nursing students were randomly assigned to one of two groups The level of anxiety was assessed using the Zung test, and performance was measured based on the number of correct answers	The final scores of the two groups correspond to mild anxiety. There was no difference between the groups.
4.	(Alamri & Almazan, 2018)	To examine the barriers to physical assessment skills among nursing students in a government university in the Arab Peninsula	A cross-sectional research survey	Two hundred and six nursing students participated. A standardized questionnaire was used. Independent Samples t-test and	Physical assessment is not often practised in clinical settings. Barriers identified were reliance on others and technology, ward culture, lack of influence on patient

No.	Author ***Country***	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Saudi Arabia			paired t-test were used to analyse the data	care. Continuous exposure, increasing self-confidence and enhancing the quality of planning and promotion of the nursing students could help develop necessary skills.
5.	(Alquwez et al., 2019) *Saudi Arabia*	To assess the perceived patient safety competence during clinical training of Saudi nursing students	A descriptive, cross-sectional design	829 nursing students Descriptive and inferential statistics were used to analyse the data.	Students expressed positive perceptions of their patient safety competencies. Significant differences in nursing students' patient safety competence between universities, gender, and year of study were recorded.
6.	(Safabakhsh et al., 2016) *Iran*	To determine the status of clinical competences nurse practitioner students –self and instructor assessment.	Analytical cross-sectional study.	All senior nurse students (n= 50) from a bachelor degree program The checklist contained 16 items with Yes and No options and a self-assessment form to be completed after each competency. descriptive and T-test was used to analyse data	The lowest score of competencies was communication and hygiene. The development of clinical competences requires close mentorship from someone who can provide feedback to the student.
7.	(Daly et al., 2017)	To determine the extent of assessor variability in clinical skills assessments in an	Quantitative design	The results of students' clinical skills assessments in three clinical units were extracted from an	Overseas-born students had lower pass grades than Australian-born students. Significant variability

No.	Author ***Country***	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Australia	undergraduate nursing program	Prospective follow-up study design	administrative database. Descriptive and inferential statistics were used to analyse data	was seen in pass grades across units, campuses and assessors. Students assessed by the most lenient assessors were over seven times more likely to pass than students assessed by the most stringent assessors
8.	(Gurková et al., 2018) *Slovakia*	To investigate the use and effectiveness of a valid and reliable rating scale for summative clinical evaluation of student performance	Descriptive cross-sectional study.	82 students participated in the study Descriptive and inferential statistics This evaluation was compared with the grade point for the students' clinical performance obtained in their final examinations' practical component.	A valid and reliable tool may allow an objective evaluation of nursing student performance in clinical settings. The Nursing Student Clinical Performance Evaluation Scale is useful for the summative evaluation of student performance. Teachers and clinical mentors can rate students' performance over time and note patterns of performance
9.	(Iglesias-parra et al., 2015) *Spain*	To develop an evaluation system of clinical competencies for the practicum of nursing students based on the Nursing Interventions Classification (NIC)	Psychometric validation study (a cross-sectional study)	Reliability and construct validity, as well as responsiveness, were tested by the evaluations performed by clinical mentors on 107 students over two consecutive years.12 faculty staff and three clinical lecturers participated in an expert consensus panel using a modified Delphi	A nursing practicum competency system, structured on the NIC, is a reliable method for assessing and evaluating clinical competencies.

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
				technique	
10.	(Kajander-Unkuri et al., 2016) *Finland*	To assess the congruence between graduating nursing students' self-assessment and their mentors' assessments concerning nurse competence, focusing on nursing skills.	Qualitative Cross-sectional study	Completed questionnaires were received from 60 students and 50 mentors. Forty-two students—mentor pairs were matched for the sample of this study. Descriptive and inferential statistics were used in the data analysis	Students' rated their performance higher than the mentors No unity in ratings was found between students and mentors
11.	(Langari et al., 2017) *Finland* *United Kingdom*	To examine and compare the self-assessment of patient safety competence between British and Finnish nursing students	Quantitative Cross-sectional study	The Patient Safety in Nursing Education Questionnaire (PaSNEQ), 502 surveys to the final year nursing students The data were analysed with descriptive statistics and binary logistic regression	No separate module for patient safety included in the curriculum. Both groups of students ranked their competence to prevent patient safety incidents (attitude) the highest and their competence to act after errors (skill) relatively low.
12.	(Maciá-Soler et al., 2018)	To determine the level of involvement of clinical nurses accredited by the Universitat Jaume I (Spain) as mentors of practice (Reference Nurses) in the evaluation of competence of	Quantitative Cross-sectional	200 clinical nurses completed the Clinical Practice Assessment Manual (CPAM) tool	63% of CPAM were completed correctly, without reaching the quality threshold established (80%). Their respective clinical units determined nurses performance on the CPAM tool.

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Spain	nursing students	study		There are significant differences according to clinical units. Collaboration and training of clinical nurses was recommended
13.	(Murray et al., 2016) *United Kingdom*	An evaluation of a Non-Technical Skills (NTS) framework that could potentially be used to measure round ward skills of student nurses	Observation (cohort) study	Development of Non-Technical Skills framework Rating of simulation using framework. Evaluating content validity of the framework	The proposed NTS framework included seven categories rated as important and relevant to practice and could be used to evaluate student nurse competencies regarding many non-technical skills required for a successful ward round.
14.	(Numminen et al., 2014) *Finland*	To evaluate whether educational outcomes of nurse education meet the requirements of nursing practise by exploring the correspondence between nurse educators and nurse managers' assessments of novice nurses' professional competence.	A cross-sectional, comparative design using the Nurse Competence Scale	86 Nurse educators and 141 nurse managers Descriptive and inferential statistics were used in the data analysis.	There were differences in the scoring of competency between examiners who are educators and those who are managers. Differences between educators' and managers' assessments scores were strongly associated with their age and work experience.
15.	(Meskell et al., 2015)	To explore electronic OSCE delivery and evaluate the benefits of using an electronic OSCE management system.	A quantitative descriptive survey	An electronic software in the management of a four-station OSCE assessment with first-year nursing students over two consecutive years	Electronic software facilitated the storage and analysis of overall group and individual results, thereby offering considerable time savings. Submission of electronic

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Ireland	To explore assessors' perceptions of and attitudes to the computer-based package.		(n=203) Assessors were trained in the use of the OSCE management software package. Assessors were invited to evaluate their experience	forms was allowed only when fully completed, thus removing the potential for missing data. Students were able to compare their performance with the class due to the timely feedback of the software.
16.	(Oermann et al., 2016) *United States of America*	To explore the feasibility of developing scenarios for high-stakes evaluation of students' clinical performance	Quantitative study	Video recordings of students performing in standardized scenarios Four outcomes were chosen for the evaluation of students' clinical performance in a simulation based on the results of an expert panel think tank (a) assessment and intervention, (b) nursing judgment, (c) quality and safety, and (d) teamwork and collaboration Communication was integrated across other areas.	Most of the nursing students were able to perform most of the skills assessed on the CCEI competently. There was some inconsistency in the inter-rater agreement. Administering medications safely, managing technology and equipment, and performing procedures were items that generated the most inter-rater disagreement while patient safety recorded lower inter-rater disagreement. Checking the functionality of the equipment
17.	(Ossenberg	To advance the assessment properties of a new instrument,	Cross-section	A validation study of ANSAT was conducted by 23 clinical assessors	The instrument is sensitive to different levels of performance

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	et al., 2016b) *Australia*	the Australian Nursing Standards Assessment Tool (ANSAT) and investigate the acceptability of this instrument when applied to the evaluation of the professional competence of nursing students in authentic practice settings	survey study	from two universities, completing 220 instruments for nursing students Data were analysed using both descriptive and inferential statistics	across different year levels. The ANSAT has high internal consistency. With supportive behavioural cues, the ANSAT enables clarity, consistency and collaboration in the workplace-based assessment.
18.	(Solheim et al., 2017) *Norway*	To develop and evaluate a new reflection and feedback tool for formative assessment	Descriptive quantitative design	One hundred and twenty-nine nursing students participated in the study. After high fidelity simulation, data were collected using a questionnaire with 19 closed-ended and two open-ended questions	The tool provided a self-assessment structure and made visible items essential to be aware of in clinical skills. The tool has the potential for enabling students to learn about reflection and developing skills for guiding others in practice after they have graduated
	Qualitative studies				
19.	(Cassidy et al., 2017) *United Kingdom*	To develop a theoretical explanation of how mentors experience borderline competency achievement of nursing students in clinical practice	Grounded theory qualitative study.	Interviews and focus group discussions with Registered Nurse mentors and practice educators. Data were analysed using open, axial and selective coding consistent.	There were conflicts regarding mentors' assessment decision-making where students were on the borderline of competence in clinical practice. The need to prepare, support and regulate nurses who assess the clinical competency of nursing

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
					students
20.	(Meier et al., 2014) *United Kingdom*	To examine how the Interpersonal Skills Profile (ISP) was used to assess interpersonal skills in a university pre-registration nursing programme	Realistic evaluation approach Qualitative study	Interviews with clinical nursing mentors, practice education facilitators and education champions. Documentary analysis of student assessment booklets was also done.	The ISP tool is used for formative and summative assessment. It supports the overt assessment of interpersonal skills, supports mentors, and provides feedback and 'feed-forward' to students.
21.	(Ochylski et al., 2017) *United States of America*	To demonstrate the use of a multidimensional evaluation method as applied to a new simulation-based remediation course to enhance the clinical skills of prelicensure nursing students	Qualitative study	Seven who participated in various simulation scenarios and skill-building activities were interviewed on the last day using 12 open-ended questions.	Student scores reflected positive skill performance two months after participating in the course. Some students expressed concern over a potential negative stigma among peers for needing and participating in a skills enhancement course.
22.	(Tommasini et al., 2017) *Belgium, Denmark, Greece, Norway, Poland, Portugal and Italy*	To compare the clinical competence assessment processes and instruments adopted for nursing students during their clinical placement abroad	A case study design	Tools for evaluating competences and written procedures were scrutinised through a content analysis method. Seven European countries participated in the study.	Significant variability emerged in the tools, with between five and 88 items included. Twelve different core competence categories were identified. There is increased transparency in learning expectations and evaluation.
	Mixed method				

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
23.	(Burke et al., 2016) *Ireland*	To explore Irish preceptors' experience of using a competence tool to assess undergraduate nursing students' clinical competence.	Mixed method study	Six focus group interviews explore the preceptor's experience of using an assessment tool to assess clinical competence. A descriptive survey instrument was developed and administered to 843 preceptors to measure preceptor's attitudes to the local competence assessment tool	Preceptors had difficulty understanding the content of the tool as it was too academic. Challenges of using the assessment tool include difficulty understanding the content, negotiating complex repetitive language, time constraints and the need to facilitate qualitative commentary
24.	(Zasadny & Bull, 2015) *Australia*	To develop a model in response to the inadequacies of existing tools to assess competence	Mixed method	The Australian amalgamated student assessment in practice (ASAP) tool was trialled in three public tertiary hospitals and four private hospitals. Quantitative and qualitative feedback was collected from students and clinical facilitators	The ASAP model can be used as a focussed diagnostic tool, removal from Professional Experience Placement (PEP) support tool and a framework for documenting evidence. The ASAP model offers a comprehensive focussed assessment of nursing students' performance in practice. It supports both formative and summative feedback and can be used to accurately identify specific areas of practice deficiency requiring redirection and support for nursing students

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
25.	(Lai, 2016) *Taiwan*	To implement an online video peer assessment system to scaffold their communication skills and examine the peer assessment's effects and validity.	Mixed method study	Expert evaluation scores showed that peer assessments led to significant improvement in students' communication performance	Online peer assessment could be perceived as a valid assessment method for nursing communication skills training. Communication became more patient-centred gradually due to peer assessments. Peer assessment activities contributed to the improvement of the communication skills of students
	Multimethod				
26.	(Márquez-Hernández et al., 2019) *Spain*	To design, develop and implement a tool to evaluate the clinical skills of nursing students	Multimethod study	250 Nursing students were randomly placed in an experimental group and a control group. Descriptive analysis was conducted, the nonparametric Mann Whitney U test was used to compare the qualitative and quantitative variables.	The web-based tool designed is an effective strategy to evaluate clinical skills. The need for innovative strategies that can determine the development and acquisition of the skills required for future nursing professional
27.	(Imanipour & Jalili, 2016)	To develop a comprehensive assessment system for nursing students in their critical care rotation based on a	Multimethod -Expert review	Thirty-eight nursing students reading a course in critical care The learning objectives of the course were classified into three	The new assessment system had high validity, reliability and a positive impact on learning. A programmatic approach should be used to effectively evaluate

No.	Author *Country*	Aim of the study	Design	Data analysis, outcomes, instruments	Key findings
	Iran	programmatic approach	-Quantitative study	categories using an expert panel content validity and reliability of the assessment tools were established	nursing students' clinical performance in critical care settings.
28.	(Wu et al., 2016) *Singapore*	To develop and test the psychometric properties of a holistic clinical assessment	Multimethod -systematic review -Expert review -Student survey	Synthesis of the literature, exploratory and confirmatory factor analysis, Content Validity Index	Holistic Clinical Assessment Tool (HCAT) was developed and validated through psychometric testing. The tool was internally consisted and reliable.

Table 3.2: Clinical Competency Assessment Systems/Tools/Frameworks/Models

No.	Tool	Purpose	Development	Validated	Publicly available	Remarks
1.	The Interpersonal Skills Profile Tool (ISP)(Meier et al., 2014)	To assess students interpersonal and professional skills	It comprises 40 statements about interpersonal skills, professionalism and engagement with the learning process, against which students' performance in practice may be graded	Yes	Yes	It can be used for both formative and summative assessment

No.	Tool	Purpose	Development	Validated	Publicly available	Remarks
2.	Quint Levelled Clinical Competency Tool (QLCCT) (Prion et al., 2017)	To assess formative and summative competency skills of students based on Tanners(2006) model.	The tool, which is grounded in Tanner's seminal work (Tanner, 2006), consists of 8 items on which students are rated either as a novice, progressing, advancing or a graduate nurse. Psychometric properties of the tool were reported as interrater reliability (0.87), content validity index (0.72), and alpha coefficient (0.83)	Yes	Yes	The tool provides a precise and reliable way of measuring the clinical competency of students at various stages of training
3.	Erasmus Nursing students Assessment tools Erasmus Nursing Students (ENS)(Tommasini et al., 2017)	To compare the clinical competence assessment processes and instruments adopted for nursing students during their clinical placement abroad	The tool composes 196 items which were categorized into 12: “Technical skills competence; Self-learning and critical thinking; Nursing care process; Ethical behaviour; Patient communication; Risk prevention’ competence category; Self-adaptation; Clinical documentation; Managing nursing care; Patient/family education; and Theory and practise integration.”	Yes	Not applicable	Increases transparency in learning expectations and evaluation
4.	ASAP tool-amalgamated student assessment in practice model (Zasadny & Bull, 2015)	The ASAP model functioned effectively as an assessment tool, focussed diagnostic tool, removal from Professional Experience Placement (PEP) support tool and a framework for documenting evidence	The model comprises an assessment tool, a clinical reasoning framework and a negotiated learning contract. The tool assesses developing competence into levels of safe, safe and effective, and lastly safe, effective and proficient. These levels of competence development are applied to each of the components of competence: knowledge, skills and attitudes/behaviours	Yes	Yes	It is useful for both formative and summative assessment

No.	Tool	Purpose	Development	Validated	Publicly available	Remarks
5.	Interpersonal Communication Assessment Scale (ICAS tool)(Klakovich & de la Cruz, 2006)	To assess the communication competencies of students in undergraduate programmes	This tool is a 23 items tool. Psychometric testing produces a Cronbach's alpha of 0.96.	Yes	Yes	Used for summative and formative assessment
6.	Health Professional Education in Patient Safety Survey (H-PEPSS) (Ginsburg et al., 2012)	To assess patient safety competencies of students	Six domains of the safety competencies: "Contribute to a culture of patient safety; Work in teams for patient safety; Communicate effectively for patient safety; Manage safety risks; Optimise human and environmental factors; and Recognise, respond to and disclose adverse events."	Yes	Yes	It is a useful tool in assessing summative clinical performance
7.	Nursing Students Clinical Performance Evaluation Scale (NSCPES) (Gurková et al., 2018)	To assess the summative clinical performance of nursing students	Instrument development consists of 77 items of clinical responsibilities of nursing students.	Yes	Yes	A valid and reliable tool may allow an objective evaluation of Nursing students' performance in clinical settings.
8.	Direct observation of procedural skills (DOPS) (Khanghahi et al., 2018)	To assess students clinical performance through direct observation	Many variant forms of tools are in use. Khanghahi and Azar (2018) presented a systematic review of the DOPS used.	Not applicable	Not applicable	Insufficient training, low feedback, time constraints. Attention needs to be paid to the quality of the tests

No.	Tool	Purpose	Development	Validated	Publicly available	Remarks
9.	Non-Technical Skills - Nursing Assessment Scale (NTS-NAS)(Pires et al., 2018)	To assess the not technical skills of nursing students	NTS-NAS resulted in a list of 63 items that are assessed on a 5-point Likert scale: "totally disagree to agree" with intermediaries. A "non-applicable" option was also added.	Yes	Yes	This tool could be used in teaching and assessment in undergraduate and postgraduate programmes
10.	Creighton Competency Evaluation Instruments (CCEI) (Hayden et al., 2014)	To assess clinical competency of nursing students in simulation or traditional clinical settings	The tool focuses on 22 general nursing behaviours divided into four categories: "assessment, communication, clinical judgement, and patient safety".	Yes	Yes	This tool has been validated and is used in many countries
11.	Australian Nursing Standards Assessment Tool (ANSAT) (Ossenberg et al., 2016b)	To advance the assessment properties of (ANSAT) and investigate the instrument's acceptability when applied to the evaluation of the professional competence of nursing students in authentic practice settings.	A 17 - item tool is rated on a 1–4 scale. The tool is categorised into four domains: "professional practice; critical thinking and analysis; provision and coordination of care; and collaborative and therapeutic practice". The scale is calibrated as: "1 = minimum standards not met, 2 = minimum standards met, 3 = performs above minimum standards in some areas, 4 = performs above minimum standards in most areas".	Yes	Yes	It allows for clarity, reliability and collaboration in clinical competency assessment
12.	Competence-development of Practical Procedures (COPP)(Solheim et al.,	It is intended to help students in their formative assessment and reflection on themselves	Measures five main areas: "Preparation and planning, Performance Extra work, Overall assessment, and	Yes	Yes	The tool provided a structure for self-assessment indicates essential

No.	Tool	Purpose	Development	Validated	Publicly available	Remarks
	2017)	and their peers before, during, and after learning clinical skills.	Knowledge of clinical skills."			components of skills for students
13.	Holistic Clinical Assessment Tool(HCAT) (Wu et al., 2016)	To develop the HCAT and test the psychometric properties of the tool	The tool consists of 4 domains and 39 items, and a global rating scale. Content validity index, item content validity index and scale content validity index were calculated Principle components analysis The reliability of items was calculated After validity and other statistical calculations, the items reduced to 36 The four domains are: 1.Professional, legal and ethical nursing practice 2.Management of care 3.Leadership and nursing management 4.Professional development	Yes	Yes	Psychometrically tested. Can help to facilitate the learning of students in the clinical setting and support assessment

3.7 DATA SYNTHESIS

Data synthesis is a comprehensive portray of data that has been integrated (Whittemore & Knafl, 2005). Methods used are case study, cross-sectional, grounded theory, phenomenology, and instrument development designs (Whittemore & Knafl, 2005).

All the quantitative results were qualitized and synthesized with the qualitative data using a convergent integrated approach (Sandelowski et al., 2012). Data were synthesized using the five-stage data analysis methods outlined by Whittemore and Knafl (2005), thus: reduction, data display, data comparison, drawing of conclusions and verification (Kpodo et al., 2016).

3.7.1 Data reduction

Whittemore & Knafl (2005) stated that data could be reduced into various subgroups in a logical manner based on identified characteristics such as type of design (descriptive, correlational, experimental etc.), chronology, setting (rural, urban, developed, developing, underdeveloped or third world countries), sample characteristics (gender, sex, age, race etc.),v or on the predetermined conceptual classification of participants (experience, attitude and behaviour). The classified data is then extracted and coded into a manageable framework – a data matrix or spreadsheet. This presentation makes it easy to compare articles with each other based on giving characteristics such as concepts, methodology, conceptual framework, definitions etc.

3.7.2 Data display

Data in this review was displayed on a matrix for easy visualization of patterns, similarities, and themes (Tables 3.1 and 3.2).

3.7.3 Data comparison

Data comparison involves examining the displayed data to determine themes that emerged, patterns and relationships. Concept mapping is used to include identified variables, patterns or themes in the data comparison stage. Essential to data comparison and determination of patterns

and themes are data display, creativity and critical analysis of data (Whittemore & Knafl 2005). Concept mapping was used in this study.

3.7.4 Drawing of conclusions and verification

Data analysis is completed by drawing conclusions and verification of findings. This detailed drawing of abstract colligation of small sets of information encompasses subgroups or categories (Whittemore & Knafl 2005). Any conclusions drawn from the data set are continuously compared with the primary source of information to ensure inclusiveness and accuracy of interpretations. In cases where evidence contradicts, and the reviewers are not sure which direction to take, a vote is cast, considering the frequency of the conflicting findings (Cooper 1988 cited in Whittemore & Knafl (2005). Possible recommendations are made for further research to clarify conclusions when pieces of evidence conflict. All conclusions from subgroups are then synthesized into an integrated summation to meet the objectives of the study (Whittemore & Knafl 2005). In this study, patterns identified were clustered into themes for critical data comparison. Sub-themes derived were compared with the data displayed on the matrix. The themes and sub-themes were discussed, and the conclusion was drawn.

3.8 RESULTS

Four themes that emerged from synthesis, namely, clinical competency systems and tools; quality of the assessment Systems/Tools/Frameworks/Models; strengths and weaknesses of the assessment process; management of assessment process; and quality improvement of the examination system, were presented below.

3.8.1 Studies included

The search produced 1151 studies from the databases. Thirty-nine (39) duplicates were identified and reduced to the 1151 studies identified to 1112 studies. After screening the titles of the remaining 1112 articles, 1063 (not related to participants) were excluded leaving 49 studies. The full articles of the 49 studies that remained were retrieved and critically evaluated. Twenty-eight

(28) studies were finally included in this review, comprising 18 quantitative studies, four (4) qualitative studies, three (3) mixed-method and three (3) multimethod studies (Figure 3.1).

Out of the studies included, the majority 13 (46.4%) were conducted in Europe, followed by the Middle East 5 (17.9%), Americas 3 (10.7%), Asia 3 (10.7%), Australia 3 (10.7%). Only one study (3.6%) was included in Africa (Figure 3.2). Out of the 28 papers, 19 either developed or validated a clinical assessment tool or model. Participants were mostly nursing students, while other studies included qualified nurses who assessed nursing students. Two of the studies (Daly et al., 2017; Meier et al., 2014) did not include nursing students who used data collected from nursing students.

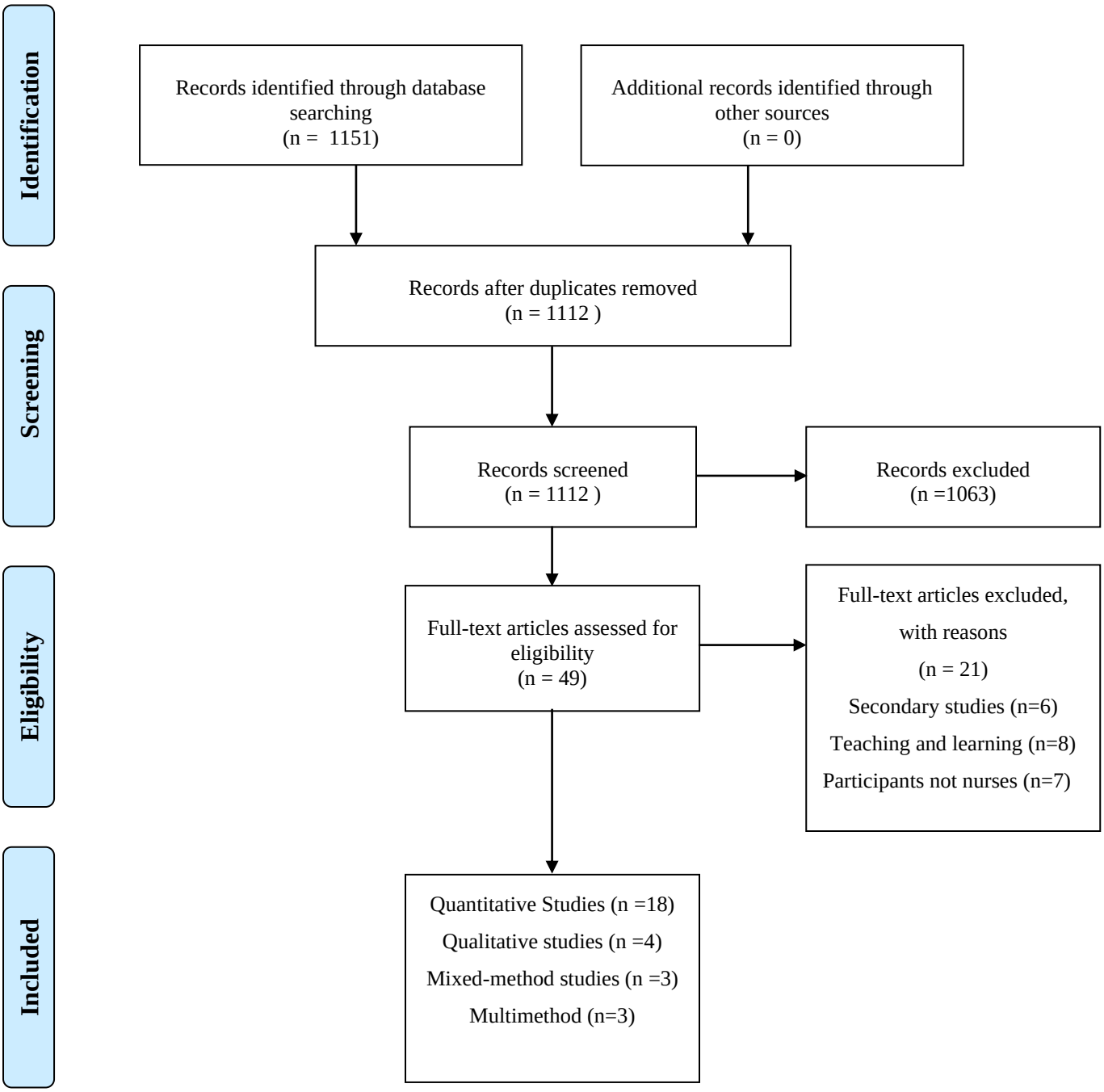

Figure 3.1: **Search and inclusion process**

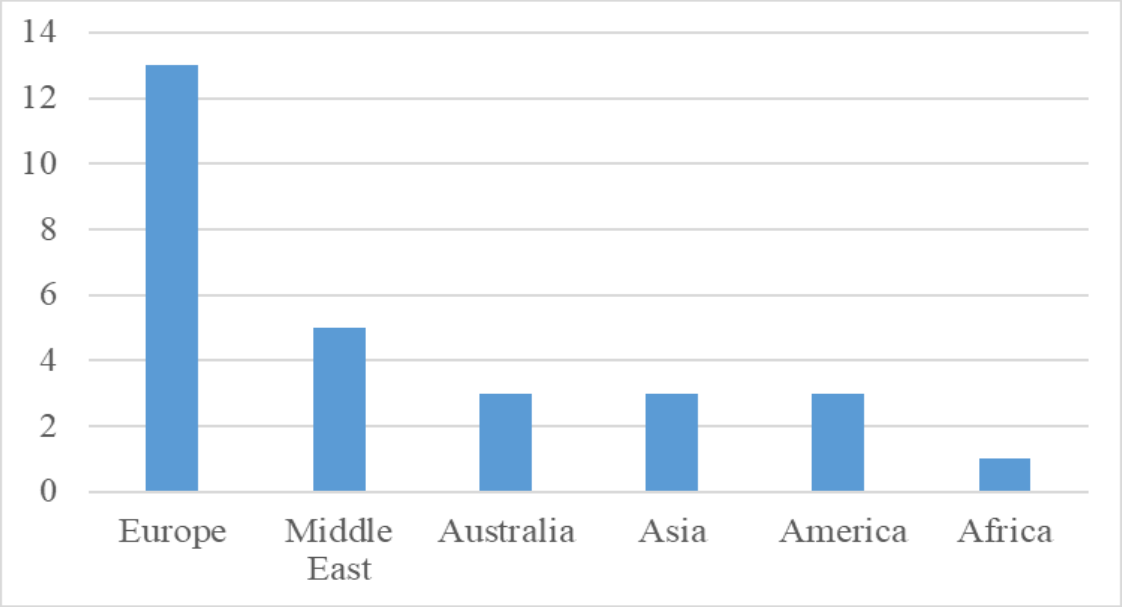

Figure 3.2: **Distribution of papers included**

3.8.2 Clinical Competency Assessment Tools

The content, quality, strengths and weaknesses of the tools and the assessment systems (Table 3.2) described in the studies included were presented in sections 3.2.1, 3.2.2. and 3.2.3

3.8.2.1 Content of the Clinical Competency Assessment Tools

The tools used in the studies included were developed to either assess technical skills or non-technical skills. Technical skills include: "patient assessment (Zasadny & Bull, 2015); nursing care process (Gurková et al., 2018; Tommasini et al., 2017); managing patient care and education (Tommasini et al., 2017); wound dressing (Imanipour & Jalili, 2016; Oetker-Black & Kreye, 2015); catheterization (Imanipour & Jalili, 2016; Márquez-Hernández et al., 2019; Oetker-Black & Kreye, 2015; Solheim et al., 2017)**;** inserting feeding tube (Solheim et al., 2017)**;** inserting a nasogastric tube (Oetker-Black & Kreye, 2015); preparation and administration of parenteral medication (Márquez-Hernández et al., 2019; Solheim et al., 2017)**;** handwashing (Meskell et al., 2015); documentation (Meskell et al., 2015); blood sampling (Imanipour & Jalili,

2016); and inserting peripheral lines (Solheim et al., 2017) and management of care (Wu et al., 2016).

Non-technical skills that were assessed included: **"s**elf-learning and critical thinking (Tommasini et al., 2017); interpersonal skills (Meier et al., 2014); ethical behaviour (Tommasini et al., 2017)**;** nurse-patient communication (Murray et al., 2016; Tommasini et al., 2017); risk prevention (Tommasini et al., 2017); nursing students communication performance on advocacy, the therapeutic use of self and validation to patients and family (Lai, 2016); and ethical principles and professionalism (Gurková et al., 2018)**.**

The studies focussed on areas such as assessment of clinical competency skills (Alamri & Almazan, 2018); preceptor experience of using competency tools (Burke et al., 2016); anxiety level of students during the assessment (Teixeira et al., 2014); assessment practices of nurse educators and managers (Numminen et al., 2014); involvement of clinical nurses as mentors (Maciá-Soler et al., 2018)**;** mentors experiences when nursing students are on the borderline of achievement of competence in clinical practice (Cassidy et al., 2017)**.**

Others included comparing nursing students' self-assessment and mentors' assessments on competency skills (Kajander-Unkuri et al., 2016)**;** and influence of assessors (Daly et al., 2017)**,** professional, legal and ethical nursing practise, leadership and nursing management and professional development (Wu et al., 2016).

3.8.2.2 Qualities of Assessment Systems/Tools/Frameworks/Models

A quality assessment tools/systems/frameworks should have the following features: objectivity and feasibility (Imanipour & Jalili, 2016; Meier et al., 2014)**;** educational impact (Burke et al., 2016; Imanipour & Jalili, 2016)**;** validity and reliability (Ahn, Heejung & Hyun Young, 2015; Gurková et al., 2018; Iglesias-parra et al., 2015; Meier et al., 2014; Meskell et al., 2015; Oetker-Black & Kreye, 2015; Ossenberg et al., 2016a; Wu et al., 2016)**;** defined scope (Zasadny & Bull, 2015)**;** defined procedures (Tommasini et al., 2017)**;** measuring dimensionality of the tool (Oetker-Black & Kreye, 2015)**;** utility of the tool (Meier et al., 2014; Ossenberg et al., 2016a)**;** transparency and clarity (Meier et al., 2014; Tommasini et al., 2017; Wu et al., 2016)**;** relevance (Ossenberg et al., 2016a; Wu et al., 2016)**;** efficient/timely to complete (Ossenberg et al., 2016a);

data storage (Meskell et al., 2015)**;** supports reflection (Solheim et al., 2017; Wu et al., 2016)**;** and provide feedback (Burke et al., 2016; Gurková et al., 2018; Imanipour & Jalili, 2016; Lai, 2016; Meier et al., 2014; Oermann et al., 2016; Solheim et al., 2017; Wu et al., 2016; Zasadny & Bull, 2015). (Figure 3.3).

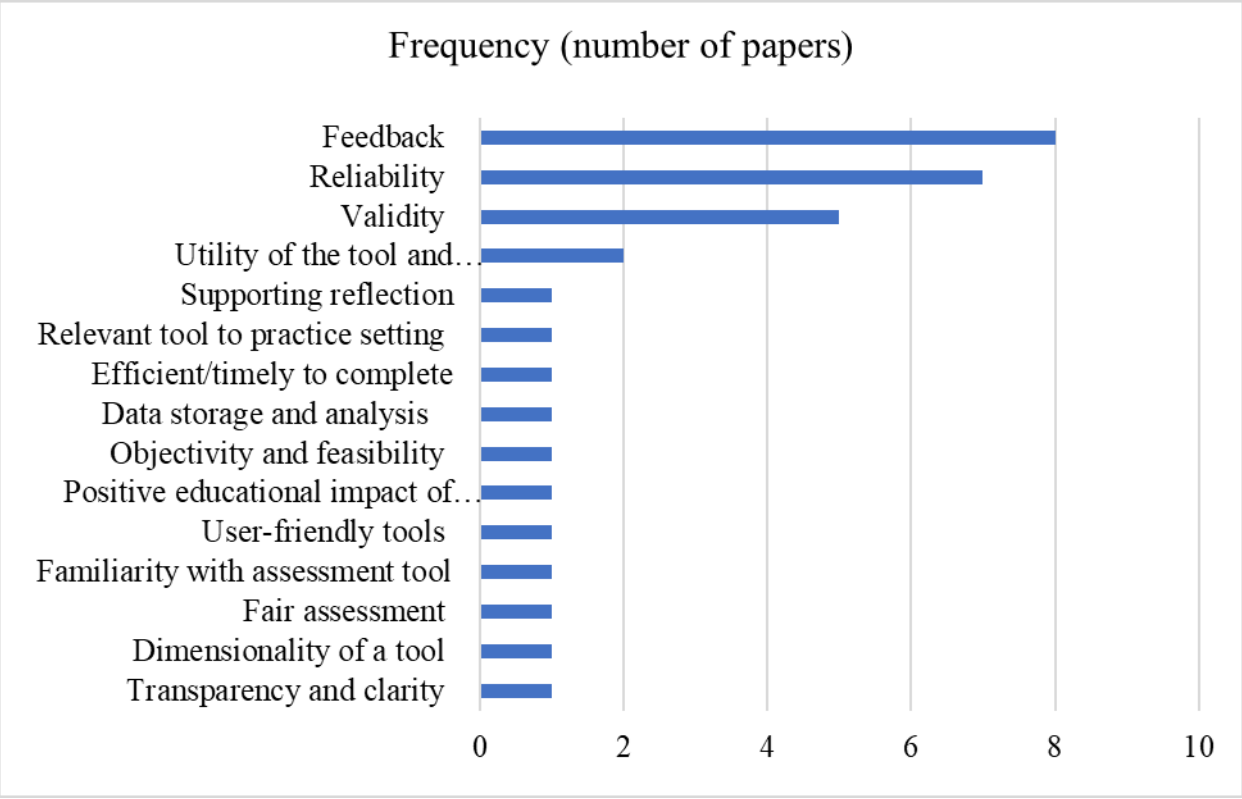

Figure 3.3: **Quality criteria mentioned in the papers included**

3.8.2.3 Strengths and weaknesses of the assessment process

Strengths and weaknesses were identified in the clinical competence assessment systems. The authors identified improved self-confidence (Ahn, Heejung & Hyun Young, 2015); critical thinking (Ahn, Heejung & Hyun Young, 2015) and good communication (Lai, 2016; Langari et al., 2017; Ochylski et al., 2017); collaboration and teamwork (Lai, 2016; Ochylski et al., 2017); effective remediation (Maciá-Soler et al., 2018); and quality nursing care (Alamri & Almazan, 2018)**,** monitoring students' progress (Wu et al., 2016) as strengths of assessment systems**.**

Weaknesses in clinical competence included using different evaluation forms from what was prescribed to assess same competence (Tommasini et al., 2017); incongruence between teaching and assessment (Meier et al., 2014); no module on patient safety in the curriculum (Langari et al., 2017); overwhelming clinical scenarios (Oermann et al., 2016); and difficulty with face-to-face interaction (Meier et al., 2014), and lengthy assessment tool (Wu et al., 2016).

3.8.3 Management of the Assessment Process

Findings from the synthesis outlined some aspects of managing the assessment process, such as testing assessment tools, examiner-related factors, supporting students and scoring performance.

3.8.3.1 Testing of the assessment system

Before commencing a clinical competency examination, there is the need to conduct a pilot test of the assessment tools and scenarios in the examination setting. Pilot testing helps correct any errors regarding the scenarios (Oermann et al., 2016) and ensuring clarity and transparency in selecting items for the assessment process (Meier et al., 2014; Wu et al., 2016). Also, checking manikins' functionality and other instruments such as cameras and microphones will help capture relevant data for storage and reference (Oermann et al., 2016)**.** Testing instruments ensure that students and examiners are familiar with the assessment tools before the examination(Burke et al., 2016) as indicated in all the tools described in Table 3.2.

3.8.3.2 Examiner-related factors

Lack of training of examiners, workload and lack of time makes assessment challenging (Meier et al., 2014). Some also complained about the assessment tools' language being too academic and complicated, lengthy and time-consuming, so they end up skipping some of the problematic sections (Burke et al., 2016). Some examiners had challenges with awarding excellent grades in some of the higher items such as confidence in decision making and being innovative as they believed that may be difficult to achieve in specialist areas (Meier et al., 2014)**.** Nurse educators and nurse clinicians appointed as examiners need to be trained effectively to assess students(Burke et al., 2016; Meier et al., 2014). Some examiners felt challenged when they are not well trained, familiar with the practice setting, experience, confident, and competent in what is being assessed(Meier et al., 2014; Meskell et al., 2015; Oermann et al., 2016)**.** Therefore**,**

preceptors, mostly examiners, felt prepared and fulfilled after going through a training course (Burke et al., 2016). The training also prepared the examiners to cope with the fear of failing non-performing students(Meier et al., 2014).

3.8.3.3 Supporting students

The examination must be done in a safe environment to reduce anxiety (Ochylski et al., 2017). They provide timely support to students when a concern is identified (Burke et al., 2016). In assessing interpersonal skills profile (ISP), examiners may need to create an enabling environment including such factors as engagement, confidence in judgment, and welcoming students (Meier et al., 2014; Oermann et al., 2016). Students are believed to be motivated when their good practice is rewarded (Meier et al., 2014). The Competence-development Practical Procedures (COPP) helped clarify what to focus on when giving feedback. They identified essential areas such as hygiene principles, preparing equipment, being more thoroughness in assessing as an observer, and information given to the patient and completing work and documentation. COPP is to raise awareness among students on skills training quality (Solheim et al., 2017).

3.8.3.4 Scoring performance

According to examiners, tools aid in assessing in a safe, effective and proficient manner (Zasadny & Bull, 2015). Tools allow the collection of data that could be disseminated later to students and faculty (Zasadny & Bull, 2015) and can be used as a guide or framework to support examiners' judgments (Burke et al., 2016). Tools also guide examiners to rate students' as they self-assess their competency skills (Wu et al., 2016; Zasadny & Bull, 2015). In clinical assessment, students must be allowed to evaluate the examination system, tools and the examiners (Imanipour & Jalili, 2016; Márquez-Hernández et al., 2019). The clinical examination results are expressed in different formats, such as a dichotomous (pass/fail) measurement to an ordinal scale using a five to 20 Likert scale score (Tommasini et al., 2017). Students assessed by the most lenient assessors were over seven times more likely to pass than students assessed by the most stringent assessors (Daly et al., 2017). Although Indigenous students performed better than international students, the strongest predictor of a student passing their clinical skills assessment was the leniency (doves) and stringency (hawks) of the examiner (Daly et al., 2017).

There are variabilities in the assessment of clinical competence among nurse educators and nurse managers. The age difference between educators and managers also influence the award of marks to students. Numminen *et al.* (2014) discovered that educators who were less than 50 years of age award lower marks than those over 50 years. However, nurse managers who were less than 50 years awarded lower marks than those over 50 years. The finding calls for an investigation of the association between age, expertise groups, and student assessment more closely. Oermann *et al.* (2016) also discovered inter-rater disagreement in the assessment of administering medication, managing technology and equipment. It was also found that the inconsistent use of 'not applicable' resulted in an inability to judge the performance of students(Oermann et al., 2016). In some instances, the software is embedded to forecast a new pass mark to control stringent and lenient examiners (Meskell et al., 2015). Fatigue also affects the award of marks. Evaluators needed to break and rest after viewing four videos of students performing clinical competence to prevent fatigue. There may be a need to extend the duration of the examination (Oermann et al., 2016). Novice examiners' rating skills improved after examining eight videos, although it was easier to rate outstanding and poor performance than average (Oermann et al., 2016).

3.8.3.5 Student performance

Assessment of clinical competency skills of students leads to improvement of skills on various assessment tools. However, some students expressed concern over a potential negative stigma among peers for needing and participating in a skills enhancement course (Ochylski et al., 2017). During peer assessment, students were able to provide feedback to their peers (Lai, 2016). Students identified the importance of patient safety and were confident that they could respond to adverse effect towards patients (Langari et al., 2017) while most students were able to competently perform most of the skills assessed on the Creighton Competency Evaluation Instruments (CCEI) (Oermann et al., 2016). There was no difference in anxiety level when examined using the traditional method or video method on performance (Teixeira et al., 2014). Formative clinical competency assessment creates an awareness among students to improve their clinical skills (Solheim et al., 2017). In effect, examination helps to communicate with students and identify their learning needs and makes them responsible for their learning needs (Burke et al., 2016; Wu et al., 2016).

3.8.4 Quality Improvement of Assessment System

Although most of the tools showed that the current assessment systems were effective (Table 3.2), there is a need for improvement in some areas. The need for more collaboration between nurse educators and managers could reduce the inter-rater variability and bridge the theory-practice gap (Burke et al., 2016; Numminen et al., 2014). Some competency skills, such as handwashing and communication, need to be assessed exclusively to ensure that students are competent in those areas (Safabakhsh et al., 2016). Students must be exposed to skills continuously to improve clinical competency performance (Alamri & Almazan, 2018) and identify their learning needs and styles (Burke et al., 2016) and collaboration and continuous professional development (Wu et al., 2016)**.** Additionally, continuous review of assessment tools, providing space on the sheet for examiners comments and the inclusion of the assessment of interpersonal skills profile (ISP) in all assessment systems improve the assessment system (Burke et al., 2016; Meier et al., 2014)

3.9 CHAPTER SUMMARY

This chapter found that only one study on clinical competency assessment in nursing was carried out on the African continent. The lack of research on clinical competency assessment in the sub-region may lead to practitioners using evidence from a different context to guide their assessment systems, which may not be appropriate.

A fair assessment system must be reasonably objective; measure what it is set to measure; produce the same result if it is conducted under similar conditions; be applicable within the context it is developed for; be acceptable to the stakeholders within the context; be transparent and clear; must result in improvement in teaching, learning and practice; and provide feedback to the stakeholders for quality improvement. Therefore, any assessment system devoid of these qualities will be fraught with biases and unfairness, leading to the licensing of incompetent practitioners or competent practitioner's license to practice with its associated risk society. Clinical competency assessment systems must be thoroughly planned, developed, and pilot tested before implementation to ensure healthcare recipients are protected from incompetent and unsafe care.

The next chapter describes the analysis of documents on the assessment of clinical competence of nursing students. These documents were accessed from the Nursing and Midwifery Council of Ghana.

CHAPTER 4 : DOCUMENT ANALYSIS

4.1 INTRODUCTION

This chapter is the first stage of the second phase of the study which aimed to conduct a situational analysis of the assessment of clinical competence of nursing students in Ghana. This stage involved an analysis of documents that related to the clinical competence of nursing students in Ghana and were accessed from the Nursing Council.

Document analysis is a qualitative methodological design that systematically reviews and evaluates documents (Bowen, 2009; Dalglish et al., 2020; Wach et al., 2013). The researcher reviewed and integrated data on assessment of clinical competence from the selected policy documents in order to understand the current system of nursing assessment in Ghana. Documents accessed were the Curriculum for the Registered General Nursing (RGN) Programme (Nursing and Midwifery Council, 2015), the Training Institution and Clinical/Field Practice Schedule for Registered General Nursing (RGN) students (Nursing and Midwifery Council, 2016b), the Logbook for Tutors (Nursing and Midwifery Council, 2016a) and the Lecturers and Application booklet for examiners (Nursing and Midwifery Council, 2021a). These documents were provided by the Nursing and Midwifery Council of Ghana.

4.2 RESEARCH METHOD

Document Analysis was guided by the guidelines provided by Bowen (2009). Document analysis is a qualitative methodological design that systematically reviews, describes, interprets, and integrates text in documents regarding a concept or phenomenon (Bowen, 2009). Document analysis can be a standalone study or used to augment other data sources in a mixed or multimethod study. For example, data from documents can guide data collection or contextualize data collected during interviews. It provided the means to track changes and the development of a project. Document analysis provides a cost-effective manner of collecting pertinent data as the

information is stable, already consolidated from various sources, and is not affected by the study's research process. However, challenges such as insufficient detail, low retrievability and biased selectivity may result (Bowen, 2009; Dalglish et al., 2020; Wach et al., 2013).

In this study, the document analysis findings were used to verify and corroborate other data sources such as individual interviews with nurse educators, nurse clinicians and nurse managers, then focus group discussion with nursing students (Bowen, 2009) and to understand the context in which they work. The researcher did not have access to two other documents that would have assisted in this process viz. the assessment rubrics (component tasks) and the teaching manual (procedure manual) as they were under review and therefore not available to the researcher at the time of study. As a result, only limited information on clinical competency assessment could be extracted from the documents which, inevitably, affected the overall analysis (Bowen, 2009; Dalglish et al., 2020; Wach et al., 2013).

4.2.1 Document search

Documents were sourced from libraries, newspaper archives, historical societies offices, organizational or institutional files (Bowen, 2009). In this study, a permission letter (Annexure O) was sent to the Nursing and Midwifery Council of Ghana, which sought to access policy documents on assessing the clinical competence of nursing students' in Ghana. The documents requested were the professional nursing curriculum, the policy document on clinical competency assessment, the procedure manual, clinical competency assessment rubrics (basic and advanced), and the manual for the appointment of clinical assessors. Of these requested documents, only three (curriculum, training institution and clinical/field practice schedule for registered general nursing (RGN) students, and logbook for tutors and lecturers) were provided. According to the Nursing Council, the other documents were not available because they were under review by the nursing council (Annexure P). The application form for prospective examiners (assessors) of clinical competency of nursing students was retrieved from the website of the N&MC.

4.2.2 Inclusion of document

There was no need to verify the authenticity, credibility, accuracy and representativeness of the selected documents because they were sourced from the official custodian (the Nursing and

Midwifery Council) of the documents. The documents' relevance to assessing nursing students' clinical competency was established by verifying the nursing council documents as a real copy of their document that guides clinical competency assessment. The documents were also assessed (skimmed from page to page) for completeness. There was no need to check whether the documents selected were balanced or uneven on the aspects of clinical competency assessment covered as there only four documents were found. This document analysis did not aim to compare any aspect of the documents between two or more organizations.

4.2.3 Data extraction

When using documents in research, the researcher must determine the existence, acceptability, authenticity and usefulness of the particular document. The documents used in this study were sourced officially from the Nursing and Midwifery Council, the custodian of the documents, and were therefore credible. Relevant information (name of the document, type of document, the source of the document and relevant content on clinical competency assessment in Ghana) were extracted from the documents using the guidelines (Annexure Q) provided by (Bowen, 2009) and entered onto a data extraction sheet (Table 4.1).

4.2.4 Data synthesis

According to Bowen (2009), document analysis takes three phases: skimming through the document, carefully reading the document, and making interpretations of the documents' content. Areas of the documents relevant to assessing nursing students' clinical competency in Ghana were read several times and extracted and entered into the data extraction sheet. It was not possible to synthesize the findings thematically because only four documents were found, and the information extracted from them is too scanty for thematic content analysis. The review's findings were summarised in a narrative literature reviews (Green et al., 2006) and presented in section 4.3.

Table 4.1: Data Extraction sheet

No.	Name of document	Document type	Source of document	Information on clinical assessment
1.	Curriculum for the Registered General Nursing (RGN) Programme (Nursing and Midwifery Council, 2015)	Book on semester course unit system	Nursing and Midwifery Council of Ghana	Three clinical nursing courses Basic Nursing (RGN 112), Advanced Nursing I (RGN122) and Advanced Nursing II (RGN212) in the curriculum are taught in the first three of the six-semester nursing programme. For the first two semesters in the first year, there is a two-week intra-semester practicum (2 weeks=12 days x 6 hours=72 hours) and a 4-week inter semester practicum (4 weeks = 24 days x6 hours=44 hours) in total, 432 hours. (72+144+72+144) for the first year. For the first semester in the second year, there is a two-week Intra semester practicum (2 weeks=12 days x 6 hours=72 hours) and a four-week inter semester practicum 4 weeks = 24 days x 6 hours = 144 hours). For the second semester, there is a two-week Intra semester practicum (2 weeks = 12 days x 6 hours = 72 hours). The inter semester practicum includes a four-day shift (4 weeks = 24 days x 6 hours = 144 hours) and a four-week night shift (4 weeks = 16 nights x 12 hours = 192 hours). Total for the second-year practicum is 624 hours (72+144+72+144+192). For the third year, the fifth-semester practicum is an affiliation in speciality areas such as

No.	Name of document	Document type	Source of document	Information on clinical assessment
				Obstetrics and gynaecology, public health nursing, and psychiatric nursing with 96 weeks (96 weeks = 96x x6 hours = 576 hours) with 576 hours. At the end of the six-semester practicum, a student is expected to have accrued 1632 hours (432 =624 =576 hours) of clinical practicum. The curriculum presents some recommended textbooks and journals to enhance teaching and learning of clinical competency skills. Clinical competency is assessed using contextual items and items based on clinical scenarios. Clinical competency skills assessment is expected to be done in-house at the skills laboratory or the clinical sites. It is expected to form part of both formative and summative assessment of the students according to the laid down principles of schools and colleges of nursing and policies of institutional affiliations.
2.	Logbook for Training Institution and Clinical/Field	Booklet	Nursing and Midwifery Council of Ghana	The booklet's purpose assists student nurses in keeping track of skills acquisition, practice, and development. It is a permanent record of the students' clinical skills performance as a practice portfolio. Nurse educators, clinical supervisors, and mentors must observe and evaluate students'

No.	Name of document	Document type	Source of document	Information on clinical assessment
	Practice Schedule for Registered General Nursing (RGN) students (Nursing and Midwifery Council, 2016b)			learning experiences and append their signature in the booklet. Observing students helps to provide feedback to students on clinical competency performance and determine students' needs. There are guidelines to students on how to use the booklet in the classroom and the clinical sites. Students can be eligible to write the practical licensing examination only if they attain a competency level of 80% of the practical/clinical field activities stipulated in the schedule book. The book contains nine focused skills assessment that each student is expected to go through by completion of the programme. The book has twelve (12) sections, namely; basic nursing(nursing process approach), first aid, emergency and disaster nursing, advanced nursing, paediatric nursing, peri-operative(theatre) nursing, gynaecological nursing, thoracic nursing, traditional medicine, gerontology, and home nursing, management and administration in nursing, public health nursing, obstetric nursing, psychiatric and mental health nursing. A page is provided for educational visits, which had five columns: a serial number, date,

No.	Name of document	Document type	Source of document	Information on clinical assessment
				field/institution, remarks and name and signature of a supervisor A page had been allocated for a list of attachments areas with five columns for number, date, field/area/institution, remarks and name, and supervisor signature. A page allocated for register of attendance which had nine columns for a serial number, date, time in, time out, field/institution and ward, the total number of hours, remarks, name and signature of trainer and student
3.	Logbook for Tutors and Lecturers (Nursing and Midwifery Council, 2016a)	Booklet for nurse educators to monitor their clinical practice	Nursing and Midwifery Council of Ghana	The Nursing and Midwifery Council believes that nursing and midwifery professions are dynamic, and therefore, tutors and lecturers must update their knowledge and skills in the professions and be able to improve teaching and learning activities The purpose of the logbook is to ensure the following; quality of teaching/learning activities, improve supervision of students' clinical activities, enhance confidence in the nurse/midwife educator, serve as a record book for practical sessions undertaken by the tutor, serve as a guide for the areas that the tutor needs updates and serve as a tool for bridging the seeming gap between theory and practice. Nurse educators are expected to have mandatory practical sessions for five days of six hours

No.	Name of document	Document type	Source of document	Information on clinical assessment
				each in a government-approved or private hospital per semester. Clinical skills performed must be documented and duly signed by the principal and nurse manager on the ward. Tutors and lecturers can do both day and night duties. Clinical practice should include client and employee services, computer application, resource planning and management, financial management, health policy and planning, organizational management and administration, procurement, training design and management, health systems research, and health information management. Nurse educators are expected to participate in continuous professional education (any course lasting more than three or more months which should be duly certified). They can also participate in continuous professional development, which is any workshop, seminar, conference or scientific session lasting less than three months. Every tutor/lecturer should be allowed to participate in workshops. It should be dependent on seniority and subject-specific tutors/lecturers. Access to the course should be by nomination from the school and individual applications.
4.	Application booklet for	Soft copy available	Nursing and Midwifery	The application booklet has three sections.

No.	Name of document	Document type	Source of document	Information on clinical assessment
	examiners (Nursing and Midwifery Council, 2020) Be an Examiner (Nursing and Midwifery Council,	online softcopy online	Council of Ghana Information on clinical assessment	Section I provides information on the mandate of the Nursing and Midwifery Council of Ghana, their responsibilities. Treatment that nurses can perform without instructions from a doctor Treatment which is sanctioned by a Registered Medical Practitioner (not necessary in his presence) given in writing and dated on the patient's treatment form Treatment that nurses may perform only in the presence of a Registered Medical Practitioner and with his sanction. Section II reports on the expectations and qualifications of a clinical examiner for the Nursing and Midwifery Council. An examiner's qualities are passionate for Nursing, energy and enthusiasm for making new things happen in Nursing, committed to positively impacting the profession, exhibits excellent leadership skills, willingness to be challenged, assertive, current in nursing knowledge, skills and procedures. For qualifications, all interested applicants must be registered with the Council, have over five (5) years' experience in the chosen field, be over the age of thirty (30), have a valid PIN, have

No.	Name of document	Document type	Source of document	Information on clinical assessment
	2021a)			no criminal record/Professional misconduct. Section II presents the form that interested applicants are expected to fill and submit to the Council. Information includes name, date of birth, contact numbers, email address, rank/title and academic qualifications. There is a new portal on the N&MC page for prospective examiners that require one to fill a one-page form which includes names, date of birth, name of institution, personal identification number, registration number, email address. Then one uploads documents such as receipt of payment, certificates, CV, and a reference letter from one's institution.

4.3 RESULTS

4.3.1 Curriculum for the Registered General Nursing (RGN) Programme

The curriculum prepared by the N&MC is used in its entirety by the Nursing Training Colleges; however, at the university level, other university required courses are added. The curriculum for training registered general nursing was concise and presented adequate information on the teaching, learning, and assessing clinical competency skills for every semester. The content facilitated self-directed learning as students can practice the skills at the skills laboratory. However, the total credit hours for practicum were not documented in the curriculum, although the theory's total credit hours were documented. The hours for the affiliation courses had been summative and will confuse the hours allocated to each. Therefore, there is a need to list all the affiliation courses and their respective practice hours explicitly.

Assessment of clinical competency was in-house at the skills laboratories and the clinical sites. However, the curriculum allows NEIs to decide how the in-house assessment of nursing students will be conducted. There may be the need to have a joint assessment system at the school level since that is the preparatory ground for the licensing clinical competence assessment.

Also, there was no information on the licensing clinical practical examination. Therefore, it was recommended that subsequent review of the curriculum should include such information to guide both nurse educators and students on their expectations of the licensing examination. Areas that may be included could be minimum clinical hours needed for a student to qualify for licensing examination, samples of assessment tools, expectations from examiners and students, and evaluation of the examination process.

4.3.2 Logbook for Training Institution and Clinical/Field Practice Schedule for Registered General Nursing (RGN) students

The logbook for training institutions and the clinical /field practice schedule for RGN (schedule book) correspond with all the competencies documented in the curriculum. Therefore, the clinical facilities are expected to assist nursing students in practising what they have been taught in clinical areas with supervision. Although nursing students were expected to achieve a

competency level of 80% of the practical/clinical field activities, verifying this expectation is a challenge as examiners inspect the schedule book before participating in clinical competence assessment. Instead, the researcher recommends that the N&MC indicates the total number of clinical hours expected to be achieved by nursing students to qualify to write the licensing examination. That decision will guide students to monitor their clinical practice personally and make up for practical hours lost before the licensing examination. It will also allow preceptors to plan teaching sessions for students and monitor their progress. Areas for educational visits should be indicated, and spaces provided for others, the list of attachment areas must correspond with the curriculum's teaching schedule with their respective practicum hours. The indication of hours in the register of attendance is commendable. Additional columns must be provided for workshops and other training that students might have participated in school. It is worthwhile noting that this book covers all the objectives in the curriculum.

4.3.3 Logbook for Tutors and Lecturers

The logbook outlines what nurse educators are expected to do at the clinical sites during the five-day practical experience. Continuous education will also ensure that nurse educators have current knowledge of innovations in nursing practice and education. They can also use their rich knowledge in education and research to effectively support the nurse clinician to support nursing students in the clinical learning environment. A document for nurse clinicians, mentors and preceptors on teaching and learning methods, student support, conflict management to improve the clinical learning environment to support nursing students during their clinical practicum is recommended. Although the document indicated that the practical sessions were mandatory for nurse educators, no system for monitoring implementation could be found.

4.3.4 Application booklet for examiners

Information on the recruitment of examiners was concise and provided some information to prospective applicants. There is the need to request a criminal record from all prospective applicants since it is a requirement in the application form. There was however no proof that this exercise is done. It is very important to ensure that prospective examiners have a high sense of credibility.

Providing preliminary online training for prospective examiners will ensure that they have the requisite skills set and knowledge in educational leadership to manage the assessment process. Formal training and recertification of all examiners will ensure that they are empowered to manage the assessment process. The researcher suggests a biennial mandatory online training and recertification of examiners.

4.4 CHAPTER SUMMARY

The chapter looked at the policy documents on the assessment of clinical competency of nursing students in Ghana. Four policy documents were assessed and analysed. Although there was enough information on the content of teaching and clinical competency, information on the clinical competency assessment system was scanty, especially with regard to the licensing examination. It is believed that adding such information in the policy documents will enable students to practice more self-directed learning in the school and the clinical sites instead of waiting for the lecturers. Also, there is a need to implement a more robust system for the recruitment and selection of examiners so they can effectively manage the examination process when appointed by the Nursing Council. Re-training and certification may be advantageous in their area. Sourcing the required policy documents was a challenge as some of the documents requested were not available. The ones provided had scanty information on the assessment of clinical competency of nursing students in Ghana. However, as stated by Bowen (2009) this is known to be a typical challenge, in document analysis as documents selected may have insufficient details (Bowen, 2009).

The next chapter describes the second stage of phase 2 of the study and therefore forms part of the situational analysis that focused on critical informants' perspectives (nurse educators, clinicians, and managers) on assessment of clinical competency of nursing students in Ghana.

CHAPTER 5 : KEY INFORMANTS INTERVIEWS

5.1 INTRODUCTION

The previous chapter looked at the first phase of the situational analysis of assessment of clinical competence of student nurses. This chapter presented the second stage of phase two of the study. It aimed at exploring the perspectives of key informants (nurse educators, nurse clinicians, and nurse managers) of assessing nursing students' clinical competency in Ghana. Key informants play a pivotal role in nursing students' education both in the classroom and in clinical practice sites.

5.2 RESEARCH METHOD

The study utilised a qualitative exploratory, descriptive design to explore the perspectives and experiences of nurse educators, nurse clinicians, and nurse managers' views and experiences on the clinical competency assessment system for nursing in the country under study. In qualitative studies, researchers aim to study individuals (narrative studies and phenomenology), explore processes, activities and events (case study, grounded theory); or learn about the culture-sharing behaviour of individuals or groups (ethnography). Qualitative research designs aim to establish the meaning of a phenomenon from the views of participants. It relies on the data in texts and images data and uses unique methods of data analysis, and diverse designs (Creswell, 2014).

5.2.1 Population

The population included students nurses in their final year, nurse educators, nurse clinicians and nurse managers. The study site was divided into three geographic zones (Northern, Middle and Southern) zones. Ten regions were clustered into zones to ensure that every area will be represented in the sample. Northern and Middle zones have three regions each while the southern zone has four regions. Schools that were eligible were those that have passed out final year

students for five consecutive years. Both public and private NEIs were selected from the list of schools.

5.2.2 Sampling

Two regions from each zone were selected by simple random sampling from which eight (8) nursing education institutions and their corresponding eight (8) clinical facilities were included. A total of twenty (20) key informants were purposively selected for the study. One educator from each educational institution (teaching clinical skills and coordinator for clinical examinations) and one clinician (clinical examiners at the health facilities) from each clinical facility were sampled for the study. Four nurse managers were also included in the study. Key informants therefore included nurse educators, nurse clinicians and nurse managers with a minimum of five years' experience in clinical teaching and clinical competency assessment of nursing students in Ghana.

5.2.3 Data Collection Method

The researcher requested the list of the nursing educators and clinical practice staff who were examiners for the assessment clinical competence of student nurses. The hospitals' nurse manager assisted the researcher by highlighting the unit managers and nurses who had extensive clinical competency assessment on the staff list. The researcher then contacted the staff individually to discuss the study and provided them with written information (Annexure K). Likewise, the principals of the NEI's provided the researcher with the list of their staff involved in clinical training. They had participated in clinical competency assessment for the Nursing and Midwifery Council of Ghana. The researcher selected the participants based on their years of experience. Participants who met the requirements but were unwilling to participate in the study were excluded.

The date, time and venue for the data collection from key informants were planned in consultation with participants and the head of the NEIs. Researcher ensured that the venue was quiet, and confidentiality could be achieved. On the data collection date, the key informants were given the information sheet (Annexure K), which spelt out the study's purpose. The information sheet introduced the researcher's participants, the study's purpose, and ethical considerations that

guided the study. After reading the information sheet, participants were required to sign the consent form (Annexure H). The key informants who consented to the study were interviewed using a semi-structured interview guide (Annexure R). All interviews were conducted face-to-face in a convenient room/office in the English language and recorded when the participant consented to it. Each interview was conducted between 30-60 minutes.

5.2.4 Data analysis

Content analysis is the process in which subjective interpretations are made of text data by systematically classifying the text content through deductive or inductive coding and identifying patterns or themes and sub-themes from the content (Hsieh & Shannon, 2005). Open-ended questions and probes are used in the interview guide. Data analysis starts with reading all data repeatedly to achieve immersion and obtain a sense of the whole and then read word by word to derive codes (Mills & Huberman, 1994). Labels for codes emerge that reflect more than one critical thought often coming directly from the text, which then becomes the initial coding scheme. Codes then are sorted into categories based on how they are related and linked. Researchers can organize this larger number of subcategories into a smaller number of categories. Definitions for each category, subcategory, and code are developed (Hsieh & Shannon, 2005).

In this study, a content analysis was employed as the clinical competence assessment research is a state of infancy state in Ghana. No theories or frameworks currently exist to guide clinical competency assessment in the context of Ghana. It is the purpose of this study to develop such a framework. All the audio-recorded interviews were transcribed verbatim by the researcher. The researcher and the two supervisors read the transcripts several times to familiarize themselves with the transcripts. Two transcripts were inductively coded independently using MaxQDA version 20 by the researcher and one supervisor. A meeting was organized for the three authors to review the initial codes. A consensus was reached on the codes and the coding system. The first researcher then coded all the scripts using the coding system agreed upon in MaxQDA version 20. Similar codes were categorized under a subtheme supported by verbatim quotes from participants. Related subthemes were then clustered under four themes, as presented in Table 5.1.

5.3 RESULTS

Four themes emerged from the data: structural issues, process issues, outcomes of clinical competency assessment and recommendations for the review of the clinical competency assessment system (Table 5.1). The verbatim quotes supported the themes and subthemes.

Table 5.1: Themes and subthemes

No.	Themes	Subthemes
1.	Structural issues	• Design of assessment system • Resource constraints • Recruitment and preparation of examiners
2.	Process issues	• Preparing patient care plan • Competency skills assessment • Marking system
3.	Outcomes of clinical competency assessment	• Performance of students and examiners • Nursing policy and practice
4.	Recommendations for review of the clinical competency assessment system	• Scoring students during care plan preparation • Standardizing clinical assessment

5.3.1 Structural Issues

Structural issues are aspects of clinical competence examination system that need to be put in place in order to facilitate directly or indirectly the processes or results required . This included the policies and procedures guiding the assessment system-how the assessments procedures are designed, the resources constraints, and the assessors' training. Subthemes that constitute this theme include the design of assessment system, resource constraints and organization and training.

5.3.1.1 Design of assessment system

Participants understood what assessment meant; however, they had limited knowledge about the policies that guide the assessment of clinical competency of general nursing students in Ghana.

Participants understood assessment as gathering information on students' performance levels and their ability to translate those skills into real clinical situations.

> *"When we talk about assessment, then we are looking at the level of students ability to perform certain tasks that they have been taught theoretically and translating that into practical… that can be done in various forms, either at the school demonstration room or the clinical sites and also during the end of semester examination where they are practically assessed and also the licensing exams where the regulator comes in to look at the ability of the students to perform those skills"*- ***KI20***

> *"I don't have much knowledge about the policies, but I think during their school years in the school they are supposed to achieve several hours in the clinical area, they have some procedures that they are supposed to do while they are in the school before they are prepared for the N&MC exams. So that is what I know, I don't know other policies"*- **KI10**

> *"There may be a guideline which is there for training of general nurses. But I can't quote the act or the law or the act of the law"*- **KI19**

Six participants (KI20, KI18, KI19, KI16, KI17, KI10) shared their knowledge of the regulatory body's mandate in designing the assessment system. Participants stated that the regulatory body provides students with clinical skills logbooks containing a list of clinical skills that students need to complete and signed by a clinical supervisor or tutor during clinical placement for learning or role-taking. The participants stated that 80-85% of the skills listed in the logbook must be completed and signed before the student is allowed to take the licensing examination.

> *"We have the regulatory body which is the NMC who are mandated by law, which gives them the mandate to regulate the standard of nursing and midwifery in the country and by extension, they are supposed to assess all students who go through the nursing and midwifery training colleges and give them the license if they are found to have passed the exams, so there is a place that monitors this right from where the student gets to school and when the student is ending the school"*-**KI20**

> *"What l know is that with the NMC is that the logbook and the competencies that are spelt out on it is expected each candidate should know at least 80-85% is covered before you are qualified to write the licensing exams for which l think it is a good one"*- **KI7**

> *"Yes, I know there is a document like that, but I have not sat down to look at it. The one we use for the pre-examination meeting guidelines, but I don't know the people on the board thing"*- **KI16**

Additionally, only one participant knew the number of clinical practice hours nursing students need to accrue to meet the licensing examination's prerequisite. They also cannot tell whether students are aware of the number of clinical practice hours required to qualify for the licensing examination's clinical competency assessment component in Ghana. They, however, said that knowing the prerequisites will be helpful to the students in their training. A participant stated that every task/skill that is listed in the logbook should have frequency attached to it; for example, a student must know the minimum number of times they needed to successfully perform a specific task before they can sign it off as being competent in it;

> *"Yes, I know the total is 1400, something like that, and it is divided into the semesters, so every semester you have to do like 280 hours or something. So when they come, and they are trying to find their way around the timetable we tell them that it is according to practice time and that is why you are taking these days off"* – **KI16**

> *"It looks like most students are not even aware of the practice hours although it is in the curriculum, because it may not be stated….let's say you need a practice time of about 500 hours, if students are aware of this, it can even direct them to learn. l looked through the green book(the logbook) or scheduled book that you normally write the things you have learnt, practised and the hours have not been attached to it. So then it is like you just writing where you go and what you do, but let us say vital signs, how many times are you supposed to do it, how many hours are you supposed to be at the ward and perform all the task"*- **KI7**

Five key informants (KI1, KI15, KI13, KI12, KI19) explained that the lack of access to assessment rubrics affects nursing students' competence skills. The key informants stated that the clinical competency assessment rubrics are classified documents of the nursing council and therefore not accessible to the nurse educators, clinicians and students before the examination. Only the examination team is given access to the rubrics for the period of the examination. A participant confessed that some of the examiners could bridge the nursing council's confidentiality policy on the clinical assessment rubrics by copying some of the rubrics during the examination for personal use afterwards.

> *"We have our assessment tools but not from the regulatory body, which is not very different from the regulatory body. We got it from other sources, NMC did not give it to us"*- **KI15**

> *"When examiners get the opportunity to examine, they also pick copies out of what the Council has given to them and share, so that is how I feel people get access to it. If the council gave me 20 and the council will audit the numbers after the examination and demand what is left, people use their phones to take snapshots. I think it should be made available because without it, on the examination day you will not even know what is required"*- **KI13**

Participants stated that the teaching and learning manual that the nursing council developed since 1995 has never been updated. Meanwhile, the assessment rubrics are updated once a while, thereby introducing disparities between what the clinical teaching and learning manual instructs and what the nursing council assessment rubrics examine during the licensing examination. They noted that nurses in the clinical facilities do not practice the same protocols taught in the NEIs, creating a theory-practice gap. Participants believe that not having access to the assessment rubrics to guide teaching, coupled with the theory-practice gap between the NEIs and the clinical facilities, disadvantages students. The gap between what is taught and assessed is due to the unavailability of up-to-date standardized clinical teaching and learning materials. Therefore the clinical competency assessment rubrics must be made available to educators, clinicians and students to guide clinical teaching, learning and practice.

> *"Yes, I think, I am of the strong view that NMC should furnish tutors with the component task so that we will know what the students are being examined on so that we can also teach them to meet the standards that they require because if you look at the curriculum that we are using, it is deficient in so many areas, it will just give you an outline without the detailed explanation of what goes into the steps"*- **KI3**

> *"Collaboration is not that smooth because sometimes we send objectives for student clinical practice to the hospitals, but it looks like there is a gap between what we teach and what the students go to the ward to do because when they return, they tell us to stop all we are doing because we are wasting our time. When they go to the ward, it is a different thing that happens there"*- **KI12**

> *" things are inconsistent in this clinical teaching, practice and assessment, the rating tools are on a different direction, what is being practised in the ward is also on a different direction, and what is being taught in the classroom is also on different direction"*- **KI3**

Contrary to the participants' views on the assessment rubrics' classified nature, some other participants opined that the assessment tool is not a learning material. Therefore, students must

be taught using textbooks which is more detailed. However, they noted that teaching with their textbooks creates discrepancies in what is being taught and assessed;

> *"The assessment rubrics list the step by step approach to a procedure, and if you teach in steps, they might forget because if the student misses a step, performing the procedure will be difficult, but when you teach them the procedure how to do it from the textbook, even if you miss a step you still can do it. So I normally do not teach them with the assessment rubric"*- **KI9**

> *"The one that we have in the textbook is more detailed than what the assessment tool brings on board, so sometimes when students perform certain steps when they are being assessed, and the assessors see it as wrong meaning because they might not have been exposed to that textbook,..."*- **KI12**

5.3.1.2 Resource constraints

Resource constraints refer to limitations in physical resources, fiscal resources and the equipment necessary for conducting clinical competency assessment for nursing students. Nursing books for teaching and learning are documented in the curriculum. However, the books are old. Some of the lecturers are currently using the manual for clinical practice training developed in 1995. Some participants augment the books with information from manuals, handouts and protocols sourced from different contexts through the internet. This creates inconsistencies in training and assessment. The assessment rubrics are classified documents of the nursing council and are inaccessible to the students and the clinical skills instructors. Eight participants (KI9, KI10, KI11, KI12, KI13. KI15, KI18, KI) touched on the books and manuals' inconsistencies for teaching nursing competencies.

According to some participants, using different textbooks without any standardised rubrics or moderation creates disparities in their clinical teaching. It becomes evident during the clinical competency examination, where some tutors are assigned to examine students from other institutions to mark them down because they do not subscribe to how the students were performing the skills;

> *"We have one old one that we still refer to, but some of the things we see they are no longer in use, so comparing them to the current textbook, we make some modifications, but it still serves as a guide for us...We do not keep to one particular book; everyone uses the books available to you, so I use books that*

are available to me, and I have a number of them. I think I have more than three, four basic nursing books that I am not remembering"- **KI2**

"when you go to a school, and they have their way of carrying out some procedures, you may not be privy to that, and you are supposed to assess them on the tools that are coming from regulatory body which is often slightly off what they do so you will end up disadvantaging the students which is not the fault of the students because that is were taught"- **KI5**

Some nursing competencies such as planning and documenting patient care plan are not done at most clinical facilities due to the heavy workload in the wards. However, the students are taught to do an individualised care plan with nursing orders and planned interventions that they are expected to evaluate at the end of each clinical practice. This discrepancies between what is taught, practised and assessed deepen the theory-practice gap. A participant believes that if the practising nurses are assessed based on the rubrics provided by the nursing council, they may not pass; hence their involvement in the clinical training of the students is problematic;

"When students go to the clinical area, how many nurses out there can even assess and diagnose one patient in their presence to learn from the clinicians in the ward. If we assess nurses who are practising right now on the use of care plan, how many of our nurses will pass? - **KI3**

"The students do not understand the care plan because of lack of practice. We are not using the care plan or the nursing process on our patients which may be due to the workload at the clinical site"-**KI13**

According to participants, students are financially overburdened during the examination. There is a mandatory registration fee that students pay for the examination. They are also obliged to contribute money to buy some consumables for the examination, accommodate and feed the examiners. It is also a regular practice for the students to buy gifts for the examiners that the nursing council have assigned to them. Mostly, the examiners come from different regions and institutions. This gesture could affect the examination outcome as the examiners may be biased and pass students who are not competent, thus putting the population at risk as stated by seven participants (KI6, KI12, KI13, KI15, KI18, KI19, KI20). Participants expected N&MC to pay the examiners on time once they employ them to work on behalf of the council. They believed that since the students pay the examination fee before they write the, it should be possible for N&MC to pay on time.

"Licensing examination, although the regulatory body is organizing it, it is still funded by the school. When I say the school funds it, I mean the students pay, and they pay in the name of the school"-**KI18**

*"Yes, financing the exams, I have categorized it in three areas, the first one is paying for the examiners at the N&MC level, so the students whatever examination fees they pay is used to take care of the examiner's transport and their allowances, and then when the examiners come down to the school, they have to feed and accommodate us"-**KI3***

*"If you employ me to work, then you have to pay me well, then I will also give you my best. Sometimes people go for the exams and have not been paid for two years, which has become a huge issue. This year for our school, we struggled to get examiners because nobody was willing to come. You can imagine travelling a long distance, and maybe you don't have any money, But you still sacrifice to come then you go back, and it will take you two years to receive your payment. The next time when they call you, you may not be motivated to come. So those are the issues"-**KI5***

According to five participants (KI9, KI12, KI3, KI18, KI20), some clinical sites may have more than one school conducting the assessment due to the proliferation of nursing training colleges' availability for the examination. Participants stated that sometimes they have to use one patient several times, which may be stressful for the patients. One participant stated that she had to move students from one ward to another to find patients for them to be assessed;

"The patients are not there because sometime during the licensing, you meet about two schools; for example, the psychiatry nursing students are there already, then general nursing students add up"-**KI19**

"There (are) times that we will go for the examination and there are fewer patients on the ward, and that becomes another challenge, and you will end up using one patient repeatedly, and the moment that the patient is used more than once, it means that you are causing nuisance and the patient may not respond to students well "- **KI2**

5.3.1.3 Recruitment and preparation of examiners

On the examiners' recruitment and training, participants stated prospective examiners apply to the nursing council by buying an examiners pack. When they are successful, they are trained before assigning them to an institution for clinical competency assessment. The requirement included but not limited to having the first degree, being a tutor or preceptor and practising for not less than three years. Some, however, stated that they were invited or recommended by colleagues

and did not go through the laid down processes. Some key informants (KI1, KI2, KI3, KI4, KI9, KI11, KI10, KI12, KI13, KI14, KI15, KI14, KI16, KI18, KI20) stated that to ensure that examiners are experienced before they are assigned to students, every nurse educator or clinician must go through the formal training since they may get the opportunity to examine students someday. One participant (KI16) opined that novice examiners are assigned as examiners because they have filled the application form and other examiners turn down the invitation. Some novice examiners may not have been trained before joining the team, so they copy the experienced examiners' mistakes. Other participants also thought that recruitment of assessors should be depended on their clinical skills since they are some nurses who may be working in non-clinical roles hence the need for the examiners to be recommended by other examiners to the council for recruitment;

> *"Examiners must be trained twice a year by the regulatory body with collaboration from the health ministry and other stakeholders, service delivery agencies where the students go to work. All of us need to understand the philosophy because the people who are in the system maybe things have changed, a lot of things may have changed in the system, and those in the field may not appreciate the change"* – **KI20**

> *"I think an assessor should be somebody who must be recommended by another assessor, an experienced... I think the document is important for the new assessor, but they should do some background checks. In addition to the assessor's recommendation and not anybody signing something for you"*- **KI16**

Five key informants (KI1, KI3, KI5, KI8, KI12) were not aware of the criteria for pairing the examiners into the team but thought that it is purposively done for the team members to support each other. Six participants (KI10, KI12, KI13, KI15, KI16, KI18) thought that the assessors' random pairing is fraught with challenges whereby the more experienced assessor may control the scoring of the examination. Additionally, one participant (KI 14) complained that novice examiners are assigned as examiners, although experienced ones and advised that new entrants work as invigilators before taking examiners roles. Another participant thought that every nurse educator must be trained as an assessor because they may assess at one point in time;

> *"I think for what has been happening since I join now, it has always been a clinician pairing with a tutor with the idea that the clinician who is basically at the clinical area has more of the clinical knowledge and the tutor from the*

classroom also have more of the theoretical knowledge then you put them together' – **KI5**

"You see when you pair a clinician and a tutor who has not worked together before, and the more experienced one controls the inexperienced one, especially when the regulatory body is under pressure to get examiners and recruit novices"-**KI16**

"That is why I said earlier on that every nursing tutor in the school should be trained because you can be an assessor at any point in time"- **KI18**

5.3.2 Process Issues

Process issues refer to how the clinical competence assessment is controlled. Three subthemes that constitute the theme include preparing patient care plan, competency assessment and marking system.

5.3.2.1 Preparing the patient care plan

Eight key informants (KI1, KI3 KI9, KI10, KI12, KI15, KI18, KI19) stated that before patients are assigned to students, examiners assess the needs of the patient. Students are then given 30 minutes to assess their patient and prepare a care plan. Fourteen participants (KI3, KI4, KI9, KI10, KI11, KI14, KI5, KI8, KI9, KI12, KI13, KI16, KI17, KI20) believe that some students falsify patient problems because they are not observed by the examiners when they are interacting with the patient during patient assessment and care plan preparation. However, one participant also thought that sometimes, students are assigned patients that may be difficult to identify current problems;

"So most students come with their already cooked ideas because of the time, and the issue is that we don't assess the student while they are taking that information (during patient assessment). Nobody checks whether they are even interacting with the patient, whether the information assessed is right, some students can do a care plan, and the patient has a wound, and they would never know, so what it means is that assessment itself was not done well"-**KI3**

"We even have instances where a student tells patients to lie with regards to the problems the students feel they want to work on, and they don't use other proper assessment techniques. Some may be due to laziness as they just don't want to identify the obvious problems. These are the two reason why they come up with the cooked problems"-**KI11**

"I also have to be honest because sometimes we as examiners struggle to get patients for students, but we are supposed to conduct the exams anyway. Sometimes, the patient assigned to the student, you will see that the student will find it very difficult to find problems, current problems because the patient has been on the ward for two or three days, so it is a bit easier using patients on the surgical ward because there is wound, pain, so you know that if not for anything these problems are there"-**KI18**

5.3.2.2 Competency assessment

According to participants (KI1, KI2, KI3, KI5, KI9, KI10, KI11, KI12, KI19, KI20), students must be examined in two nursing clinical competence skills. However, some students may be assigned two relatively complex skills. In contrast, others get less challenging skills which introduced an element of luck in the examination process which is unfair to some students;

"An example is an admission of the patient and vital signs but when the student gets admission of a patient he or she needs to check vital signs, serve medication, make a bed and several other tasks within this time meanwhile another student will just be given vital signs as the second task, and at the end, if this student who was given the admission is unable to perform the task he or she is referred whiles the other one passes, I think it is not fair"- **KI12**

"They give a student colostomy care, or they give you under-water-seal drainage then you could see that this student has been challenged and was not lucky because he was over-loaded, and then one student will also get bed making and vital signs ... so the person will have a holiday and pass over somebody so in this case, standardization of the examination was not met"- **KI3**

Some students may be assigned different tasks from nursing orders in the patient care plan, or they may be asked to perform the tasks on another patient because the procedure might have been done already on their assigned patient. Another discovery is that the examiners like to assign candidates varied tasks to cover all the assessment rubrics provided by the regulatory body (KI11, KI16) and assign different procedures that were not documented by students patient care plan. Additionally, other examiners will assign non-difficult tasks to complete the examination session early as explained by K16;

"Sure, because there are sometimes that the student identifies bed making and everybody getting bed-making so you may be given a task on the ward like an admission of a patient and changing colostomy bag, those are things that

students will not expect to get so as soon as you give them things like that they think the examiner is very wicked"-**KI16**

"There are some students who will get an easy task, they will get bed making and vital signs, and they are gone, but there are some areas that the examiner will count the tasks to make sure they are doing across the board so some will look at your previous one and you did bed and will assign admission. Some of the students do non-difficult tasks, so they finish and go so there is no examination"- **KI11**

5.3.2.3 Marking system

Ten participants (KI3, KI4, KI5, KI8, KI9, KI12, KI14, KI16, KI17, KI19) stated that students are observed graded independently by two examiners during the performance of the task assigned. Sometimes there are varied marking patterns due to the individual differences. The examiners compare the marks and reach a consensus on the final mark for the student. Sometimes, the chief examiners (head of the examination team) intervene when necessary to resolve the differences. Some participants (KI6, KI13, KI16), therefore, recommend the need for more rigorous supervision by the chief examiners;

"When assessing as a team, one may have challenges with the partner or the chief examiner because it is subjective and not standard, so your partner may think this way you also think this way, but at the end, you have to come to a consensus to make sure that the right thing is done. As long as there is no 100% standardization, there would be arguments"-**KI6**

"Assessing clinical competency is an observational thing. You score based on your observation, so if at a particular point in time you don't observe very well, the rating will be different. It is a point we call consideration, so maybe at a point, l scored differently from my partner then we grade at the end. If there is something l might have omitted, my partner will, and we will have to agree on the decision"-**KI8**

"There are some items written on the rating scale that some of the examiners do not understand the gravity of what is being done; one typical example is recording intake and output. It is a "shorter task", but the gravity of that task, a patient can easily die because of that so when somebody comes to do a calculation or entry that is wrong, an assessor will say the student has recorded, so they mark 3 points, but me as I am here that I know the gravity once you record and it is wrong, I will mark you 1 point" – **KI16**

5.3.3 Outcomes of clinical competency skills examination

Outcomes refer to how the results of the clinical competency skills examination are useful to nursing practice. It also covers issues relating to how the examiners' feedback is used to improve the assessment system. Subthemes includes the performance of students and examiners; and nursing policy and practice.

5.3.3.1 Performance of students and examiners

According to the participants (KI3, KI8, KI10, KI18, KI19, KI20), the outcome of the clinical competency examination results shows the quality of students trained. Subsequently, the results also indicate the information teachers give to students when teaching. Participants stated that examination reports on the various NEI and the clinical examination facilities should be made available for quality improvement purposes. It may also indicate the overall performance at the institutional level so that stakeholders may suggest appropriate interventions to improve the examination process;

> *"You may see the students doing the same wrong thing, so if the school gets feedback, then we may be able to tell that is what we are teaching the students. I think the school should have the feedback on what was done right, what was not done right and what must be improved so that the other that is being prepared will come out improved"*-**KI10**

> *"I will not be interested in just the outcome of the results but also the examiners' report and the overall performance of the students. That is more important than just saying that we got 100%. Let us go into the nitty-gritty of the 100%, that will help us know where the students have done very well, so it gives us an overview of what is happening at the institution level then it will help all stakeholders to know the weaknesses of the system and suggest appropriate interventions to address the next examination"*-**KI20**

Four participants (KI10, KI18, KI19, KI20) believed that if students were allowed to evaluate the examiners, it would provide useful feedback to the regulatory body on the competency and the professionalism of the examiners, which may, in turn, help to improve the examination system;

> *"I don't know so when students can evaluate the examiners, and it will also be a check for them. You may not be able to hold students work 100% because it is an examination, and the students feel I should have been treated this way so that it may be the examiners word against the student's word, but I don't*

think five students will come together and write something about an examiner so if we can see the trend, then that examiner should be called so the evaluation from the students will help"-**KI10**

"But debriefing has been helping in the whole world. So I think with this evaluation, there is nothing wrong. It would have been better so that people will comport themselves"- **KI19**

5.3.3.2 Nursing policy and practice

Seven participants (KI3, KI13, KI6, KI11, KI16, KI19 KI20) thought that the curriculum is appropriate but that educators and clinicians who use the curriculum may need more training. Also, there may be the need to restructure the clinical practice schedule to reduce the overcrowding of students at one time; Participants believed that the regulatory body should ensure that the care plan is practised at the clinical sites to understand it better during the examination.;

"I will say yes. The curriculum that we have now is not bad. It is good. I think it is of international standard, but the only challenge is the people who teach the curriculum, whether or not they are well trained, well experienced, well prepared to teach that. That is the challenge"- **KI20**

"Besides that when they go to the clinical area, how many nurses out there can even assess and diagnose one patient in their presence for them to learn from the clinicians at the ward, and even if we take this same rating tools to go and assess those who are practising right now how many of our nurses will pass"- **KI3**

5.3.4 Recommendations for review of the clinical competency assessment system

Participants recommended scoring the care plan preparation process and standardizing clinical competency assessment.

5.3.4.1 Scoring students during patient care plan preparation

Eleven participants (KI4, KI5, KI10, KI11, KI12, KI13, KI14, KI15, KI16, KI17, KI18) recommend that examiners must observe and score the care plan preparation process so that students will avoid memorizing and writing false patient problems. Marking of the care plan often results in conflicts because the examiners are from diverse institutions, and there is no

known standardized nursing diagnosis manual available in Ghana for all the institutions to use or refer to;

> *"I think that is why assessment is not part of the nurses' daily duties. We don't want to ask even history taking we don't want to do it because it is not marked, the ones that are marked are the ones people pay attention to, but I think assessment should be marked. But before the assessment is marked, I don't know either they increase the time, or they decrease the number of students a day to see how it goes, but we need to mark assessment"*- **KI16**

> *"We have issues with the care plan because when you move from my school to another school, we all have a different mindset of what the care plan is with different teaching, so sometimes I believe that so I don't dwell so much on the care plan when I am assessing students because that was what the student was taught"*- **KI5**

Standardizing the examination will bring uniformity in the assessment of students. Also, students will do a proper assessment of patients and identify realistic problems from the patient as supported by participants (KI13, KI14, KI15);

> *"Standardizing the assessment will prevent students from having their way as they come in with cooked problems and cooked diagnosis so they just come and write them on the sheet because you may see a particular patient is in urine and may need catheter care and if the student is not conversant with catheter care, the person will not write it. When wounds are complicated, the student will not identify as one of the problems because they think it will take a lot of time, so if there is a special mark allocated, one will be obliged to pick the important and realistic problems and not the false ones"*-**KI15**

5.3.4.2 Standardizing clinical assessment

There were mixed reactions about introducing a standardized examination for assessing nursing students' clinical competence in Ghana. One participant (KI20) said that students should be allowed to choose the procedures to perform. Although one (KI10) called for combining mandatory and optional tasks for each student, others (KI16 and KI17) believe that standardizing clinical competency assessment will solve the challenges of assigning different clinical competency skills of varying complexity to different students;

> *"We should let it be an initiative of the student to choose. In any case, students have their strengths and weaknesses, and of course, we want the*

strengths, but we also want to see the weaknesses. We can still see the weaknesses"- **KI20**

"… sometimes, it is true people get vital signs, and they score 4,3,4,3… while somebody will get underwater seal drainage and the person may have difficulties which are not fair, so we have to look at this and do a broader consultation"-**KI18**

"I think some may be mandatory, and others may be optional. As I said, we have major and minor procedures to make sure that one student does not do two minor procedures or major procedures. Even with the major, some seems like a minor procedure" **KI10**

One participant (KI20) who did not support standardizing the assessment system thought that once a student is well trained, the person must be able to perform any clinical competency skill assigned;

"It is very, very dicey because I don't think that is the way to go. If you are trained to do all kinds of things, it doesn't matter what kind of procedure. You have been taught, and everybody has been taught that is the fair aspect whether they give to you or me we should do it. So during the assessment, we should not say we should all do the same. Theoretically, you can do that, but practically I don't think so, it is not feasible"- **KI20**

According to five participants (KI3, KI10, KI13, KI16, KI17), standardizing the examination will create uniformity and prevent biases in the examination system. Although participants thought that all the nursing procedures are essential and nursing students must master all, they resolve that the examination should revolve around core clinical competency skills;

"You see when students are challenged on that way; then you see that they will prepare for those areas because when you go the clinical skills, the core component of nursing practice revolves around this areas, the rest are adjunct, they are just spicing up the nursing care, like handing over and taking up"- **KI3**

Therefore, they identified various skills that they thought may be included in an Objective Structured Clinical Examination (OSCE) for Ghana's clinical competency assessment. These include care of the mouth; administration of oxygen; safety needs; bed bath; bed making; vital signs; administration of medication; monitoring intake and output; wound dressing; catheter care; emergency triaging; collection of specimen; admission, referral, transfers and discharge; feeding patient; physical assessment; handing over and taking up; and communication.

5.4 CHAPTER SUMMARY

Chapter five looked at nurse educators, clinicians, and nurse managers' perspectives on assessing the clinical competency of nursing students in Ghana. Twenty key informants participated in the study and provided their view on the current clinical competency assessment system of Ghana assessment of clinical competency. They also provided recommendations on how the assessment system can be made more valid. Although the curriculum for the assessment's training and policies is established, some challenges could mar the assessment process's quality. Access to the assessment rubrics and training manual could help in homogenous training on clinical competency. Also, robust recruitment and training of examiners are critical in ensuring practical assessment by examiners. Observing students during care plan preparation, standardizing the competency skills assigned to students, and evaluating the examiners were highly recommended.

The next chapter looked at the assessment system's perspectives from the nursing students who are the major stakeholder in the educational system.

CHAPTER 6 : FOCUS GROUP DISCUSSION WITH NURSING STUDENTS

6.1 INTRODUCTION

This chapter of the study looked at the third sub-phase of the second phase, which explored the current situation of assessment of clinical competency of nursing students in Ghana. A focus group discussion was organized to explore student nurses' views on assessing clinical competency and recommendations for the challenges they identified. In all, 68 nursing students from eight nursing institutions in Ghana participated in the study. This chapter explored nursing students' experiences in assessing clinical competence, which formed part of Ghana's nursing licensing examination.

6.2 RESEARCH METHOD

A qualitative exploratory descriptive design was used to explore final year nursing students' views on assessing Ghana's clinical competency (Creswell, 2014). This method was selected for the study as it enabled the participants to express their views on how they experienced the assessment of clinical competency (Creswell, 2014).

Focus group discussion is a research technique that collects data through group interaction on a topic determined by the researcher. A focus group discussion enables participants to interact actively and share their views and opinions on a particular subject (Jayasekara, 2012). Focus groups are typically used when the researcher needs participants to work together to construct a particular phenomenon's meaning. In nursing research, focus groups are a reliable way to interact with policymakers, educators and students as end-users. The inclusion of nursing students in this study was very strategic as they are the ones who are affected by policies that are made on the assessment of clinical competency, as in policies, teaching and learning strategies, and assessment. Findings from the study showed that nursing students' inclusion in the study to

develop a framework for assessing clinical competence. Most of the views, experiences, and recommendations were corroborated by nurse educators, clinicians and managers.

6.2.1 Population and Sampling

Final-year nursing students from public and private nursing colleges and universities registered for Ghana's licensing examination were included in the study. Ghana is geographically divided into three zones (northern, middle and southern). Two regions from each zone were selected, from which eight NEIs were selected using a stratified sampling technique, and schools were selected by simple random sampling technique. Only NEIs that had successfully enrolled students for the licensing examination for at least five years were included. Three public training colleges, three public universities, one private training college and one private university were selected. After the institutions granted permission, nurse educators who served as a coordinator for the selected schools' examination informed the nursing students about the study. A convenient sampling technique was used to select participants (nurse clinicians) for the study. Nurse clinicians were selected from those who were examiners of clinical competence of student nurses. Those who consented to participate in the study after they were approached by the researcher were included. Between eight and ten nursing students who had registered for the nursing licensing examination and were willing to participate in the study were selected from each school for the focus group discussions, making a total sample of sixty-eight (68) nursing students from the eight institutions.

6.2.2 Informed consent

Participants were recruited by the nurse educators who served as coordinators for the clinical assessment. They informed the nursing students about the study, and those who showed interest were informed about the day for the data collection. On the day of the focus group discussion, the students were welcomed into the venue and given an information sheet (Annexure L), which introduced the study's purpose. Participants asked questions that were clarified by the researcher. Participants could also opt-out of the study at any time without any penalties. Those who wished to participate were given the consent form (Annexure I), which was duly signed. Afterwards, the researcher also signed her portion on the consent form before the focus group discussions began.

6.2.3 Data Collection

After the signed informed consent form had been collected, students were put in groups of 6-8 for the focus group discussion using the focus group discussion guide (Annexure T). Data was collected after students had completed the clinical competency examinations aspect of the licensing examination. Those who consented were organized and seated around a classroom table on the school campus. The students were welcomed and provided with the information sheet to read the study's purpose and asked for some clarifications. They were given the consent forms to sign for participating and the discussion to be recorded. Students were allowed to share their clinical competence examination experiences before the researcher asked questions from the semi-structured interview guide. Participants were allocated numbers to ensure anonymity. The focus group discussions lasted between 60-to-90 minutes. Afterwards, participants were thanked and provided with a token.

6.2.4 Data analysis

Content analysis was used to analyse the data collected (Hsieh & Shannon, 2005). All the audio-recorded interviews were transcribed verbatim by the researcher. The researcher and one supervisor read the transcripts several to familiarize themselves with the transcripts. Two transcripts were inductively coded by the researcher and one supervisor in MAXQDA analytical software independently. A meeting was organized for the researcher and the two supervisors to review the initial codes. A consensus was reached on the coding system to be used. All the transcripts were uploaded to MAXQDA and coded by the researcher. Similar codes were categorized under a subtheme supported by verbatim quotations from participants. Related subthemes were then clustered into four themes.

6.3 RESULTS

Eight (8) NEIs were included in the study: three public universities, three public nursing colleges, one private university and one private nursing college. Sixty-eight (68) nursing students participated in the focus group discussion, of whom 38 were females, and 30 were males. Their ages ranged from 21 to 30 years, with an average age of 24 years.

Four themes emerged from the thematic content analysis (Table 6.1). These included challenges in the examination systems; the clinical competency assessment process, competency assessment; and proposals for quality improvement of the clinical competency assessment system. The themes were described and supported by verbatim quotes in this section.

Table 6.1: **Themes and subthemes**

Themes	Subthemes
Examination system	Relationship between teaching, practice and assessment Examination environment Effects of limited resources
The clinical competency assessment process	Care plan preparation Assigning and performing competency skills
Outcomes of competency assessment	Variability of marks awarded Obtaining feedback on clinical competency skills assessment
Proposals for quality improvement of the clinical competency assessment system	Rescheduling examination dates Evaluating the examination Scoring patient care plan Extend time for preparation of care plan Standardizing competency skills assessment Training of examiners Access to updated resources from N&MC

6.3.1 Examination system

The examination system refers to the systemic issues that affect students' performance in the clinical competency assessment. Subthemes that constitute this theme include the relationship between teaching, practice and assessment, the examination environment and the effects of limited resources.

6.3.1.1 Relationship between teaching, practice and assessment

Participants knew the content of the policies guiding the clinical competency assessment system, which included the curriculum, number of procedures assigned to each student and the composition of the clinical examination team:

> *"Clinical skills are indicated in the curriculum. Nurse educators also relay information on the competency skills that are examinable to the students, so we are aware that we will be examined on both major and minor tasks"*- **P60**

Sixteen participants mentioned the incongruence among teaching, practice and assessment. Four participants (P9, P10, P51, P67) stated that the nursing council developed the nursing procedure manual in 1995, which serves as the clinical education portfolio in the NEIs. This manual had not been updated since then. The participants stated that there was anecdotal information that the nursing council was reviewing the manual. The NEIs use the procedure manual in combination with other books, which makes clinical competency skills varied from institution to institution.

> *"Mostly, what we have is online, and then a lecturer brought a book on Basic Nursing, which had some procedures, requirements and tasks. We have soft copies and some component task but do not know if it is revised or not. I don't have any book"*- **P41**

> *"We use manuals that were used maybe ten years ago when it is updated, we are not updated, and so we continue to use still the old materials that might not be applicable now. So what I advise we do is that, after coming out successfully with updates in the manual, students must be informed* - **P10**

Nine participants asserted that the clinical assessment rubrics (tools) are classified documents of the regulatory body and are not available to the NEIs or the students. Students are aware that the assessment rubrics (tools) are updated by the regulatory body regularly. Still, they only get to know some of these updates during the examination when assessors prompt them, which sometimes confuses them. Therefore, the clinical instructors try to keep the students up to date with the expected changes in clinical procedures by sourcing information from other books and the internet to teach them to cope with the assessment rubrics' updates from the nursing council.

"Frankly speaking, I was found wanting because what the examiner had (assessment rubrics) was different from what was in the component task, so it was through God that I was able to do something"- **P39**

"During our last period session, we heard that we had to add some things and change some things, so imagine within that short while you are supposed to forget all ... you know already what you felt was right and had been doing that since the first year,..."- **P57**

According to six participants, there is a shortage of clinical staff, leading to a competition between nurses' teaching and actual health care duties (P2, P21, P38, P47, P51, P54). Also, the large number of students placed in the clinical facility makes it difficult for the clinical staff to cope with their clinical teaching roles. Much of the equipment used for the clinical competency assessment is not available in the clinical facility for students to practice. Additionally, because of the workload, nurses do not follow the protocols as prescribed. Hence students get lost between what they are taught in the clinical simulation laboratories and what is practised in the health facilities. Students believe that if the assessment tools are made accessible to the nurse educators and students, it would be helpful in their training, and preparation for the competency assessment and practice:

"... we do not have hands-on experience all the time, and even when it happens at the wards we do not go by what is in the books they only teach us what they know and do not take us through the steps as it should be, then when you are given advance procedure sometimes you find yourself wanting"- **P54**

6.3.1.2 Examination environment

Fourteen participants contributed information on the challenges they experience in the examination environment. Participants were comfortable with the clinical facilities that were used for the examination because it was where they usually had their clinical placement. Eight participants stated that they had pre-examination meetings with the examination teams, which helped relieve some of their anxiety about the fear of failure in the examination.

"I like that fact that we had a pre-conference, pre- exams conference with the examiners. It in a way brought us to establish some level of familiarity or relationship with them way before the exams, and in a way, for me, it reduces some tension as well"- **P54**

Six candidates reported they were sometimes abused and traumatized by examiners when they made mistakes during the examination leading to confusion and sometimes a complete shutdown during the examination process.

> *"Some of the examiners are quick-tempered, so when a student is performing a task and omits something, they will just be screaming at the person, causing more anxiety. Yes, and the student will become confused and when they assign another task the student cannot do it properly because he or she is perplexed"*- **P4**

6.3.1.3 Effects of limited resources

Although books and manuals were available for learning the competency skills, physical resources, equipment and the financial resources necessary for conducting a clinical competency assessment for nursing students were limited. Therefore the success of the examination was affected. Nineteen participants touched on the effects of limited resources. According to seven participants, their preparation for the clinical competency assessment was challenging because some clinical facilities lacked the necessary resources. Students had to contribute towards the purchase of consumables for the examination to have all the resources they needed.

> *"Okay, when we were admitted into this school we met books; that is procedures manual, and that is what we go through or we when we go for a practical session, and then some say they don't understand we also go through the book and follow the procedures or the steps in carrying out such practice or procedures in the ward"* **-P9**

> *"The nursing aspect they will state the fundamentals of nursing by Kozier and Erbs. Particularly with the fundamentals of nursing as it helps with learning the basic nursing and also helps to understand the nursing process on how to identify patients' problems"*- **P41**

> *"What I will say is that we were not having all the items we would need for the examination during our clinical period, but during the examination, everything is there but just that the systematic way we do it during the examination is a bit different from the normal clinical period, so those things bring some slit challenges but so far, so good, it is good"*- **P64**

Fifteen participants said they had numerous financial obligations during the clinical competency examination. Firstly, they pay the registration fees for the examination to the nursing council.

Then they pay revision/preparation fees to the NEIs for the examination. Since the examination is organized when the NEI's students-in-training are on campus, candidates have to rent accommodation and feed themselves throughout the revision and examination period. Students also contribute to purchase consumables for examination and are expected to accommodate and feed all the examiners assigned for the examination duration. One participant (P10) explained that sometimes they could not contribute enough to host the examiners due to their small class size. A participant (P62) explained that some examiners complain about the quality of the accommodation and food provided for them, which, the students believe, may affect the outcome of the examination;

> *"With everything you mentioned, accommodation, feeding and caring for their needs until they are done, the whole week the students have to take up, we are few in the class, and we contributed a specific amount. We had to look for a good place they can stay for the week. We had to go and pay someone to feed them breakfast, snack, lunch and supper and also when they are going, they expect us also to give them something, so we also do that for them"* **- P62**

> *"Some people were making comments that the snacks take too much time. Meanwhile, we serve it at 9:30 in the morning, which is not far from breakfast, and their lunch goes at 12:30, and their supper goes at 5:00 and is like this is examination if you don't make them comfortable it will go against you"* **- P60**

6.3.2 The clinical competency assessment process

Process issues refer to activities that constitute the clinical competence assessment. Subthemes that emerged from the data were care plan preparation and competency skills assessment.

6.3.2.1 Care plan preparation

Thirty-three participants explained their experiences of the care plan preparation. Twenty stated that some examiners welcome them and then plan on the patients to use for the examination. However, some examiners allocate patients randomly without prior consent from the patients, which results in the patients not cooperating with the students during their assessment and preparation of individualized patient care plans. The time students are assigned to elicit information from a patient is affected. Seventeen participants said that, due to inadequate time allotted for the care plan's preparation, they could not assess their assigned patients effectively.

So they "cooked" (falsified) patient problems so they could finish on time and obtain the total marks for the care plan. Five participants (P2, P3, P5, P8, P9) concluded that falsifying patient problems meant that their health needs were not met:

> *"During our practical examination, when we get to the ward in the morning, the examiners will come around and introduce themselves to us. After that, they will go inside the ward and then check the patients that they would want to give"*- **P30**

> *"The environment was friendly as the chief examiner herself came with a smile and treated us like a mother, so we felt so easy, and I think it was lovely (Laughs lightly)"*- **P12**

> *"Yesterday, at the male medical, I woke up the patient I was assigned to several times, but this man won't mind me. I was being timed, 30minutes for my care plan. He wasn't talking, and I would just open his eyes and sleep. I saw him having tubes and other things. I didn't know what to do, although he didn't tell me his problem, I could fish out some for him. So looking at that, I will write my cooked diagnosis for the care plan"*- **P27**

> *"if you falsify something to pass the examination, without taking into consideration patient's problem, it will go against the patient because the person came to the hospital for his or her problem to be solved so if his or her needs are not attended to, then I don't think you are doing good to them"*- **P9**

6.3.2.2 Assigning and performance competency skills

Thirty-eight participants commented on the assigning of competency skills to perform. After the students have prepared the care plan, the examiners assign a task based on the patient's problems and interventions in the care plan. Twenty-five participants stated that although they were assigned interventions they proposed, some were asked to perform the task on different patients. In contrast, others were assigned procedures they did not propose in the patient care plan. Other factors that determined the choice of competency skills that were assigned to students were favouritism (P5, P25, P38, P45), the gender of the student (P6, P10), the energy level of the examiners (P6, P9, P10, P30), assessment rubrics available (P4, P5, P11, P22, P36, P39, P41), sympathy from the examiner (P5, P38), limited facilities and time of the day (P4, P5, P11, P22, P36, P39, P41). Additionally, some students were only asked to describe the competency skill verbally and were awarded marks.

Sixteen participants asserted that some examiners shouted at students and showed their dislike for students pursuing degree programmes, while others received telephone calls during the examination process. Students also complained that they were not allowed to seek clarifications and were even compared with other students on various occasions during the competency assessment process:

> *"A student had to perform underwater sealed drainage and lumbar puncture. That day when the guy came out, he looked worried, and when we enquired how the examination went, he was hurt because of the choice of procedures that were assigned to him, because some of us had our normal routine procedures and we were delighted even though it was difficult."*- **P50**

An example of the issue of the effect of the time of day on the examination was explained by P6, who said, "Assessors are always energetic at that moment in the morning so that they can examine you very well and that is the time they will be on you, they will be strict on everything but getting to the latter part, everything is comfortable, and you will get it "falaa" (meaning very easy)". On the issues of oral explanations of a procedure, P67 said, "…, but some of the procedures given to us were the examiners asked us to say it orally, so if you don't keep it in mind like how you write the written paper, you wouldn't be able to deliver... that is the aspect that I am not happy with."

P25 raised examiners making and receiving calls during the examination, saying which disrupts their attention on the student and the procedure being performed, thereby creating uncertainties about the marks to award for various stages of the students' clinical procedure.

> *"So they come there when you start the procedure they receive a call, walk out, and expect you to pause, and return to whatever you have done on the patient they say they haven't seen it"*- **P25**

The students who completed the first-degree programmes in nursing have reported discrimination against them. They opined that the clinical examiners assume that because they completed a degree programme, they are supposed to be more clinically competent that the Diploma students; meanwhile the licensing examination does not prescribe different standards for any of the categories. The examiners' expectations from the first-degree candidates are because they are

employed at a nursing officer level. In contrast, the diploma nurse at the level of a staff nurse will need to work for at least eight years to reach the first-degree nurse's level.

> *"A degree nurse you've finished university, and you have come, and you are a nursing officer, a diplomat has to work eight years before they achieve this stand, so every mistake is not pardonable. You people must be sensible" I mean, it moves into another form of insults"*- **P25**

6.3.3 Outcomes of the competency assessment

Two subthemes that emerged from the clinical competency examination outcomes were poor inter-rater reliability and obtaining feedback on clinical competency assessment.

6.3.3.1 Poor inter-rater reliability

Five participants (P22, P23, P25, P29, P60) complained about the subjectivity of the grading of some aspects of the clinical assessment. They wondered why most examiners refuse to score the maximum mark even though they have performed a task that warrants total marks. A student (P22) overheard examiner arguing over marks to allocate to her on an item on the rubrics that demands privacy. She did and was unsure why they would not have awarded the total mark but instead argued about what to score. Another participant requested that the results of the clinical assessment be released as early as possible for students to know their performance:

> *"I think that the subjectivity of the marking should be reduced. There should be a way to check it objectively. Most of us are victims of an examiner who gave a certain mark because of how he or she was feeling at a particular time"*- **P25**

6.3.3.2 **Obtaining feedback on clinical competency assessment**

According to three participants (P22, P25, P32), they need to provide feedback as early as possible to guide candidates who failed in their remedial examination. Additionally, one participant explained that although fabricating problems for the care plan may make the students pass, patients may be affected since their real problems may not be dealt with:

> *"As for me, after our practical, I expect our examiners to communicate our results to us".* - **P32**

"What we tend to see is that whether you are doing it wrong or not, when you do it wrong, they will shout at you to discourage you, but when you do it right, they can't commend you for you to feel you are on the right track. So discourages and that also contributes to a poor outcome of the exams"- **P23**

6.3.4 Proposals for quality improvement of the clinical competency assessment system

The students proposed ways in which the quality of the clinical competence assessment system could be improved. These were clustered under six subthemes: rescheduling examination dates, evaluating the examiners, scoring patient care plan, extending the time for preparing the care plan, standardising competency skills assessment and training of the examiners.

6.3.4.1 Rescheduling examination dates

Five participants (P22, P23, P25, P27, P60) stated that the examinations are conducted when the NEI's students-in-training are still in school. Hence, they struggle to find a place to stay during the examination. Rescheduling the licensing examination to a time when schools are on vacation could enable them to use the NEI's accommodation, thereby reducing the accommodation and financial challenges:

"...I think they should reschedule so that the exams period will be within the normal academic calendar so that when we in the last semester for us to complete they can make or give us some time for us to write the exams together with the continuing students and just leave without the need for us to stay behind"- **P22**

6.3.4.2 Evaluating the examination system

Eleven participants stated that the regulatory body needs to allow the students to evaluate their examiners to help the council in their appointment of examiners for subsequent examinations to improve the assessment system:

".. so there should be a post-examination forum where students will also voice out their problems and the challenges they went through and then with that they get to know that, okay so it is this side we are defaulting then we go according to that"- **P61**

"Most often, that is what will help. You get feedback from us, we tell you what went wrong, we'll tell you the experiences we had with examiners, we

will tell you each examiner per our experience she had with them and then from there probably you would know how to improve on them or avoid them"- **P24**

6.3.4.3 Scoring patient care plan

Nine participants noted that scoring students while planning care for patients could reduce the fabrication of patient's problems. Additionally, students can then be assessed on how they communicate with the patient and elicit information to plan care. Also, students would then be encouraged to do a systematic assessment of patients:

> *"I think it is a good strategy (examiners assessing students during the patient assessment) that will go a long way to help students that are coming up and we the staffs on the ward because if that thing is brought in place (implemented), then nurses on the ward are going to learn how to assess patients and then when students come on the ward they can do it like this, do it like that"*- **P38**

6.3.4.4 Extend the time for preparing the patient care plan

Six participants stated that the time for preparing the patient care plan should be extended so they could assess patients properly and document their needs:

> *"The timing for the care plan the 30 mins is quite too short, so I think it should be extended to maybe 45 mins or something so that at least you can be able to formulate many problems and interact with your patient well"*- **P37**

6.3.4.5 Standardizing competence assessment

Due to the challenges of assigning clinical competency skills of equal magnitude, twelve participants called for the standardization of the competency skills to make the assessment consistent and fair. That may also increase the objectivity of the examination and result in students learning effectively. However, seven participants thought every patient has unique problems that need to be managed individually. Participants recommended that some skills should be included in a standardized examination; 'intravenous cannulation and infusion', 'feeding of a patient', 'tepid sponging', 'catheter care', 'tracheostomy', 'handwashing', 'administration of medication', 'vital signs', 'wound dressing', 'oxygen therapy', 'blood transfusion', 'monitoring intake and output', 'bed making', 'admission of a patient',

'communication', 'bed bath', 'taking up and handing over', and 'educating a patient on condition' should be included in the standardized examination.

> *"Let's say compulsory for that you are given six tasks, everybody is performing these six tasks, so then we are all being rated according to that, then that one we can know that this one was able to do it, this one was not able to do it then we know it"*- **P60**

6.3.4.6 Training examiners

Three candidates (P18, P53, P55) suggested that all examiners be trained to educate the students and present common knowledge. Secondly, examiners and invigilators need training on how to control their emotions during the examination process since they sometimes traumatize the students. Students suggested that nurses who have specific skills must be selected for the examination. Also, educators must work in the clinical areas to be up to date themselves on current trends:

> *"I think before the practical exams; all the examiners nationwide should meet and have one standard training like if it is checking of vital signs, you know that if a student does this is accepted everywhere, …"*- **P55**

> *"…, because before you are called to examine some of the students, there should be certain things that you possess, your temperament all these things should be known before they choose you to"*- **P53**

> *"No, the only thing written in the curriculum is vacation practical, that is what they write, so the tutors who can get the chance to join the council during the practical examination, aha so they get to know that oh okay, this procedure was done. The examiners come and list all the procedures, so they get to know that this not added, so once it is not added, it means it has been taken out from it, so that is how come we can manage it small, small but then as to how it is being done, that one we wouldn't know"*-**P60**

> *"We don't know them. We don't know, so if you want to get the total, we can't say it. We will easily mention the minor ones and escape what we term as hard procedures or superior procedures"*-**P2**

6.3.4.7 Access to updated resources from NMC

Participants suggested that updated training manuals must be made available to all NEIs to teach nursing students. Additionally, assessment tools (rubrics) and other resources for teaching and assessing nursing students' clinical competence should be easily accessible to nurses, educators, clinicians and nursing students.

Four participants (P9, P10, P51, P67) stated that the nursing council developed the nursing procedure manual in 1995, which serves as the clinical education portfolio in the NEIs. This manual has not been updated since then. The participants stated that there is anecdotal information that the nursing council is currently reviewing the manual. The NEIs currently use the procedure manual combined with other books, which makes clinical competency skills varied from institution to institution.

> *"Mostly, what we have is online, and then a lecturer brought a book on Basic Nursing, which had some procedures, requirements and tasks. We have soft copies and some component task but do not know if it is revised or not. I don't have any book"*- **P41**

> *"We use manuals that were used maybe ten years ago when it is updated, we are not updated, and so we continue to use still the old materials that might not be applicable now. So what I advise we do is that, after coming out successfully with updates in the manual, students must be informed* - ***P10***

> *"The first procedure given to me was bed-bath, and when you read the procedure manual very well when you get to the lower extremities, you have to put soap in the sponge and give it to your assistant to wash the feet away from you, and I did so, and the examiner said no I have to do mine first before giving to the assistant, some too, I want to marks so I kept quite do the way she said I should do it but later on when I re-checked what I was doing was in the procedure manual"*-***P67***

> *"Sometimes our tutors, a clear example is during our licensing exam. We will be there, and sometimes our tutors can come and face each other; one will have a different view, the other one too "is not, is now this because they are not certain"*- ***P10***

Some participants asserted that the clinical assessment rubrics (tools) are classified documents of the regulatory body and are not available to the NEIs or the students. Students are aware that the assessment (tools) rubrics are updated by the regulatory body regularly. Still, they only get to

know some of these updates during the examination when the assessors prompt them, which sometimes confuses them.

> *"Frankly speaking, I was found wanting because what the examiner had (assessment rubrics) was different from what was in the component task, so it was through God that I was able to do something"*- **P39**

> *"Yes, it did, because it was during our last period session of the practical studies that we heard that we had to add some things and change some things, so imagine within that short while you are supposed to forget all or learn what you know already what you felt was right, and we have been doing that since the first year, the second year we thought it was right, only to get there and it seems to be a different thing"*- ***P57***

> *"You see a particular arrangement, for example, when it comes to preparing patients for surgery. You prepare the place and then everything and then just the last, close to the last end they are saying "err you asked patients to empty bowels", and we are like "okay". I've used certain techniques to prepare this patient at the back of my mind you are asking me to ask the patient to do that, and there are so many examples of those, and even when you take certain procedure manual it is hard for you as an individual to follow it that way, and it raises the questions whether we are putting many efforts when they are coming out with these erm manuals to us to use"*-***P15***

Clinical instructors try to keep the student up to date with the expected changes in clinical procedures by sourcing information from other books and the internet to teach them to cope with the assessment rubrics' updates from the nursing council. Therefore, participants have urged the N&MC to provide a uniform assessment tool and make it accessible online to nurse educators and students;

> *"N&MC is a huge institution within the country. They can create an app of which all students nowadays are using phones. When you go to the play store, and then you type care plan, you will see so many versions of a care plan, and they set their care plan according to their own country's standard. Sometimes you will be lucky that some of them will be in order and some of them will not be in order"* -***P21***

> *"I think practical is all about skills; you can give it to me if I don't have the skill I can't perform. So it shouldn't be about tutors shouldn't have it, students shouldn't have it, we should all have access to it so that we know what is expected of us. If you give it to me and cannot perform the tasks or skills, I have to blame myself. But once you don't give it to me and even my tutors do*

not have it, if I don't do well, I will continue to blame people for my mistakes" ***- P38***

"I think the out tutors should have access to them, then how will we know that is the right thing, and this is the wrong thing? So I think our examiners should or tutors to have it, but they shouldn't tell the student that this is the right thing but just teach and then go " ***-P48***

"Even if not we the student having it, our lecturers or the one who takes us the through demonstration should have it so that the person can use it when to teach us because if the person is not having it. Maybe whatever the teacher is teaching us may be different from what is in the component task" ***- P50.***

Nursing students use accredited books by the school for learning. Students complained about discrepancies in the books, so use handouts prepared by their teachers since the information in the handout is what they will be examined on;

"Coming to, with the contradictions, when there are contradictions between the tutor and maybe the books we read, what I do personally I will go for what the tutor says. Because it could be. As a result, the book has been maybe being not updated" ***-P9***

"Okay, when we were admitted into this school we met books; that is procedures manual, and that is what we go through or we when we go for a practical session, and then some say they don't understand we also go through the book and follow the procedures or the steps in carrying out such practice or procedures in the ward" ***-P9***

"The books we have were what we downloaded from the internet, and so I think that one is also a challenge" ***- P61***

6.4 CHAPTER SUMMARY

This chapter looked at the experiences and views of final-year nursing students in assessing nursing students' clinical competence in Ghana. In all, four themes emerged from the data; examination systems, the clinical competency assessment process; outcomes of competency assessment; and proposals for quality improvement of the clinical competency assessment system. Thirteen sub-themes with their verbatim quotations were presented. The findings showed that nursing students preparing for the licensing examination experienced some challenges which needed to be dealt with to ensure a quality assessment of clinical competence in the examination

process. The next chapter collated the findings from chapters three to six to develop a framework that will help assess the clinical competence of nursing students in Ghana.

CHAPTER 7 : DEVELOPMENT OF FRAMEWORK FOR ASSESSING COMPETENCY SKILLS OF NURSING STUDENTS IN GHANA

7.1 INTRODUCTION

This chapter is the third phase of the study. It aims to develop the draft framework for assessment of clinical competence of student nurses. The design and development research method (Ellis & Levy, 2010) and the World Bank Framework for Building an Effective Assessment System (Clarke, 2011) were used to develop a framework for assessing nursing students' clinical competence in Ghana. The six milestones include problem identification, defining the objectives, designing and developing the framework, testing the framework, evaluating the results, and communicating the results (Ellis & Levy, 2010).

7.2 RESEARCH METHOD

The *Framework for Building an Effective Student Assessment System"* developed by Clarke (2011) as part of the World Bank's Systems Approach for Better Education Results (SABER) guided the development of the framework

7.2.1 Recap of the problem

The researcher received complaints from students, nurse educators, and clinicians about the difficulties experienced regarding the licensing examinations' clinical competency assessment component in Ghana. The current system in Ghana, although nationalized and centralized, had some challenges with standardization. There were complaints of biases in patients' allocation, examiners, and procedures/tasks during clinical examinations. There was no determination of interrater reliability of examiners; the selection of patients for the examination is based purely on convenience, resulting in a high risk of competent students failing and vice versa.

7.2.2 Objective

The study aims to develop a framework to assess nursing students' clinical competence in Ghana with the intention to standardize and improve the quality of clinical assessments. The framework's objective as a derivative of the study was to standardize and improve the quality of clinical nursing competency assessments in Ghana. It is expected that the framework will be used for both formative and summative assessment of clinical competency of nursing students in Ghana.

7.3 DEVELOPMENT OF THE FRAMEWORK FOR ASSESSING CLINICAL COMPETENCE OF NURSING STUDENTS

The researcher engaged in an iterative process with one supervisor to develop the draft framework, after which it was discussed with the second supervisor. Comments were addressed to improve the draft framework for assessing the clinical competence of nursing students in Ghana. The development of the framework was guided by the World Bank's framework for building an effective assessment system (Clarke, 2011) which had been explained further.

7.4 CONCEPTUAL FRAMEWORK

The development of the framework for assessing clinical competence of nursing students was guided by the "*Framework for Building an Effective Student Assessment System"* developed by Clarke (2011) as part of the World Bank's Systems Approach for Better Education Results (SABER). This framework was designed to guide the building, review or improvement of effective assessment systems. The framework was developed from extracts of principles and guidelines from countries' experiences, professional testing standards, and the current research base to provide guidance for policymakers, development organisation staff, and others to improve the assessment system. The framework and critical indicators help the diagnosis, discussion, and consensus-building development of a sound student assessment system that supports improved quality and student learning (Clarke, 2011).

The framework outlined the fact that every type of assessment system, whether it aimed for assessment for learning or assessment of learning, small or large scale assessments; local,

regional and international level, is driven by three main domains; enabling context, system alignment, and assessment quality (Clarke, 2011). Results from assessment enable educational institutions to make sound decisions on issues such as introducing new programs to improve teaching and learning in classrooms, improving the delivery of course in class to enhance learning and determining which applicants should be admitted to the university. The variety of purposes and needs supported by a student assessment system includes informing learning and instruction, determining progress, measuring achievement, and providing partial accountability information to stakeholders. These purposes and decisions made based on the framework is expected to lead to improved quality and learning levels in the system (Clarke, 2011). Although stakeholders have argued about the high cost of assessments systems, it is an important aspect of the teaching and learning process, judging by the various advantages and purposes outlined. In nursing education, an assessment system's role is crucial because it must discriminate between nursing students who are competent to care for patients and maintain patient safety in the health services.

Assessment systems comprise three main kinds of assessment activities, corresponding to three primary information needs or purposes. These include classroom assessments for providing real-time information to support teaching and learning in individual classrooms; examinations for making decisions about individual student's progress through the education system (for example, certification or selection), including the allocation of 'scarce' educational opportunities; and large-scale assessments for monitoring and providing policy and practitioner-relevant information on overall performance levels in the system, changes in those levels, and related or contributing factors. Classroom assessment (formative) assesses how students are learning and is used during the learning process and summative how much they have learned and is used at the end of the course and is usually graded and used for making decisions about passing or failing. Examinations and extensive scale assessments are mainly about learning (primarily summative) and sometimes referred to as high stakes evaluations. These distinctions do not always hold up neatly in practice; hybrid approaches are becoming more common (Clarke, 2011). Clarke (2011) further described the various assessment types and their key differences.

Classroom assessment provides immediate feedback to inform classroom instruction. It is done regularly, and all students are involved. It varies from observation, questioning and paper and

pencil tests, all to evaluate students' performance. All subjects are covered in this type of assessment, additional information is collected from students, and the scoring is usually formal and straightforward.

Large-scale assessments can be national or international. The national assessments aim to provide feedback on the system's overall health at a particular grade/age level and monitor trends of learning. In contrast, the international assessment provides feedback on the education system's comparative performance at a particular grade. The assessments are conducted for individual subjects regularly (every 3-5 years). A sample or census of students at a particular grade or level is tested using multiple choice and short answer questions. The assessment is generally confined to a few subjects in the curriculum. Additional information is collected from the students. Scoring is done using simple or statistically sophisticated techniques.

Exit examinations are used to certify students as they move from one level of the education system to the next level or into the workforce (Licensing examination for nursing students). The examination is conducted annually or more frequently, which tests all eligible students.

The examination format is usually multiple-choice, short answer questions and essays; however, some may include practical sessions. They cover the main subjects of the curriculum. Scoring systems vary from simple to more statistically sophisticated techniques. The licensing examination for general nurses to be certified as professional nurses is a typical example. It is a yearly national examination where eligible students who have completed the programme at an NEI in Ghana may register and write.

Entrance examinations select students for further educational opportunities. They are mostly done annually and more often when the system allows for repeats. All eligible students are tested. The examination consists of multiple-choice questions and essays and covers the main subject areas pertinent to and chosen by the authority setting. The entrance examination and scoring vary from simple to more statistically sophisticated techniques.

Three main drivers ensure an assessment system's quality. They are enabling context, system alignment, and assessment quality. The framework is used to determine strengths and weaknesses

in country-level assessment systems and diagnose where more work is needed in the system. These three main drivers of an effective assessment system have been explained further below.

Table 7.1: **Framework for Building an Effective Student Assessment System [Clarke, 2011]**

	Assessment types/purposes		
	Classroom assessment	Examinations	Large-scale assessment
Enabling context	Policies Fiscal resources Organizational structures Human resources		
System alignment	Learning goals and standards Curriculum Pre- and in-service teacher training		
Assessment quality	Design Administration Analysis Uses		

7.4.1 Enabling context

The enabling context covers the broader context in which the assessment activity occurs and the extent to which that context is conducive to or supportive of the assessment (Clarke, 2011). It covers such areas as the broader legislative or policy framework for assessment activities; and institutional and organisational structures for designing, carrying out, or using the assessment activity results. It also covers the availability of sufficient and stable sources of funding, and the presence of competent assessment unit staff and classroom teachers. An enabling context is important for an assessment system as it is a vital driver of the assessment system's long-term quality and effectiveness (World Bank, 2010).

In most instances, the onus is on the government to provide the vision, leadership, and policy framework for establishing this enabling context, which may subsequently be implemented via public-private partnerships. In federal contexts, some education systems combine forces to create an enabling context by pooling resources or institutional arrangements to develop, implement, analyse, or report on the test (Clarke, 2011). These collaborations' efficiencies of scale make it

more cost-effective to develop higher-quality tests and incorporate technological advances into the testing process.

Areas involved are the legislative policy framework, availability of sufficient and stable sources of funding, organisational structures, and human resources as in the presence of competent clinical assessors (Clarke, 2011).

7.4.2 System alignment

System alignment refers to how the assessment system is aligned with the rest of the education system. It describes the connection between assessment activities and learning goals, standards, and curriculum. It also identifies areas for pre- and in-service teacher training opportunities. Assessment activities need to align with the rest of the education system so that their information is useful in improving the education system's quality. Areas to consider in system alignment include;

- Domain coverage: the extent to which assessment activities provide information on student learning and achievement in relation to the curriculum in general, and key knowledge, skills, and competencies in particular;

- Population/system coverage: the extent to which assessment activities provide information on all students at all grades; and

- Utility: the extent to which assessment activities are consistent with and useful concerning stakeholder learning goals and priorities.

Alignment involves more than the simple match between what is tested and what is in the curriculum. Data from the assessment can be used to improve the country's achievement levels and nursing practice.

7.4.3 Assessment quality

Assessment quality refers to the psychometric quality of the instruments, processes, and procedures used for the assessment activity. It looks at how questions were designed and

constructed, the administration of the examinations, interpretation of results obtained by students and implications and uses. Although it is stated that these indicators are used to assess large-scale examinations, they can apply to school-based examinations since they prepare the students throughout their training so they can write the terminal examinations and practice the skills learned (Clarke, 2011). The exact criteria used to make judgments may differ in the assessment quality, depending on whether it may be for classroom or nationwide examination (Clarke, 2011).

Assessment quality also comprises investigating two fundamental technical issues in ensuring an assessment system's quality: reliability and validity. Validity is the extent to which a test measures what it is designed to measure and the relevance of the test to its objectives (Adamson et al., 2012; Hudges & Quinn, 2013). Reliability refers to whether the assessment produces accurate information on examination over time if repeated under the same conditions (Clarke, 2011; Hudges & Quinn, 2013). In assessing nursing students' clinical competency, validity and reliability need to be ensured so that the assessment system's outcome can identify competent nurses.

7.5 SOURCES OF DATA

The framework was developed using data from four sources: a scoping review, document analysis, key informant interviews, and focus group discussion with nursing students (Table 7.1). A nominal group technique was conducted with experts in assessing the clinical competency of nursing students to review the framework. The results of the nominal group technique were used to revise and finalize the framework.

7.5.1 Scoping Review

The scoping review was aimed at synthesizing the practices in clinical competency assessment. It employed the six stages of Arksey & O'Malley (2005).

7.5.2 Qualitative document analysis

The qualitative document analysis was conducted on accessible policy documents from the Nursing and Midwifery Council of Ghana. Documents used included the nursing curriculum,

field practice logbook for students, practice logbook for tutors and lecturers and clinical examiners/assessors' application form. Two other documents, the teaching manual and assessment rubrics, were not available at the time of the analysis as the regulatory body said they were under review.

7.5.3 Key informant interviews

Key informant interviews were conducted to assess current clinical competency assessment practices from nurse educators, clinicians, and managers in Ghana. In all, twenty (20) key informants selected from Ghana's three zones (northern, middle and southern) participated in the study.

7.5.4 Focus group discussions

Eight focus group discussions were held with 68 nursing students to explore their views and experiences in Ghana's clinical competence assessment.

7.6 INTEGRATION OF FINDINGS FROM SITUATIONAL ANALYSIS

Information was combined from all the studies in the first two phases for the development of the framework. The World Bank framework for building an effective assessment system guided identifying and selecting the most appropriate characteristics used in the development framework for clinical competency assessment of nursing students in Ghana (Clarke, 2011). Table 7.1 summarises the results of the first two phases of the study according to the three quality drivers (enabling context, system alignment and assessment quality) for determining a sound assessment system(Clarke,2011).

Table 7.2: **Integration of findings from situational analysis**

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
	Presence of policy framework	• Limited knowledge of legal framework (DA) • The variety of books use by institutions leads to incongruence in clinical education (SN, KI) • Practice logbooks for students must be >80% complete to quality to write licensing examination (KI, NMC) • Practice hours indicated in the curriculum is not documented in the students' practice logbook (DA) • Lack of information dissemination on updates done on some assessment rubrics before the examination (SN, KI)	•The Act should be available and accessible online •Information on clinical competency assessment system must be provided in the curriculum •Updated manuals should be easily accessible by clinicians, educators and students are needed •Student practice logbooks must indicate practice hours for core and adjunct competency skills •Revisions in clinical assessment rubrics must be communicated to nurse educators, clinicians and students.
		• Examiners have limited knowledge of the policy framework's existence to assess clinical competency skills (KI, SN).	•Training programmes must include an examination of the policy framework.

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
ENABLING CONTEXT	Training programs	• The recruiting process for examiners not robust (KI)	•Mandatory training and assessment of skillset of all prospective examiners before they are recruited and appointed. •Re-training and certification of examiners every two years
	Trained staff with low turnover	• Information on the training process for examiners is not readily accessible (KI) • No formal training for invigilators (KI) • Novice examiners are appointed without formal training • Step-down training did just before the examination is not effective (KI)	•A documented policy on training and expectations must be available online for prospective examiners and invigilators to show evidence that they have access to and read it before applying. •Mandatory formal training for examiners before the first assignment •Consider regional training to ensure representation of all schools and selected health facilities

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
	Stable/ reliable funding	• Registration fee paid for the examination (SN, KI, NMC). • Purchasing consumables and other materials (SN, KI). • Paying for accommodation and food for all the examiners (SN, KI)	•Thorough and accurate costing of examination to consumables and hosting of examiners. •Timely remuneration for examiners so they could fund their food and accommodation during deployment • Examination time should be set when students have accommodation on campus
	Clear and stable institutional structures and arrangements	• Unfavourable clinical practice environment (SN, KI). • Inadequate patients for examination (SN, KI). • Patients were not willing to participate in the examination. • Students are not able to complete the curriculum (SN)	•Health facilities must be provided with resources and consumables for the examination •Introduction of examination strategies that can be implemented with a limited number of accessible patients •Create innovative ways for practising clinical competency skills •Provide access to the skills laboratory for student practice

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
	Assessments aligned with learning goals, standards, curriculum	• Learning goals and standards are not achieved due to discrepancies between what is taught and examined (SN, KI). • During the examination, students are assigned competency skills with varying levels of difficulty, and therefore, the learning outcomes cannot be readily estimated (SN, KI) • The nursing curriculum was not explicit stated the mode of clinical competency assessment.	•Monitor the implementation of the standards and learning goals during the assessment of nursing students •An external team of experts should audit the examination process •The next curricula review should consider stating the clinical competency assessment model and aligning it to the licensing examination's clinical competency assessment.
	Assessments aligned with pre-and in-service teacher training opportunities	• In-service training is organized in an ad hoc manner and is dependent on other factors such as the availability of resources for training (KI). • There exists a theory-practice gap between facilities and nursing education institutions (SN, KI)	•Developing a training requirement for nurse educator and clinicians who teach nursing students clinical competency skills. •Promote collaboration between nurse educators and clinicians who teach nursing students to improve the learning of competency skills
	The systematic	• There is no documented mechanism by the Nursing Council to use the results of the clinical	•Use examination results as data to identify gaps and challenges in the examination process to

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
SYSTEM ALIGNMENT	use of results to inform policy and practice	competency examination to inform policy and practice (DA)	inform policy and practice •Use Feedback and reports from examiners as data for innovative research to inform policy improvement
	Awareness and application of technical or professional standards, thus: Design and implementation of assessment activities; psychometric	• The pairing of examiners for clinical competency assessment is open to abuse (KI). • Updates and additions to the assessment rubrics are made without the tutors, clinicians and students (KI, SN). • The inadequate time allowed for planning care for patients (SN, KI). • Students are manipulating findings during examination. • Students' competency skills during the examination are not standardized, introducing bias (KI, SN).	•Use one examiner and one moderator instead of two examiners. •Adequate time must be given to examiners to test assessment rubrics before using them to assess students. •Extend time during the care planning stage so students can do proper assessment and documentation of patients. •Introduce strategies that will prevent students from fabrication patients problems when collecting data. •Introduce a standardized examination for core

WORLD BANK FRAMEWORK		FINDINGS FROM THE SITUATIONAL ANALYSIS	RECOMMENDATIONS
Three Quality Drivers	**Description**		
ASSESSMENT QUALITY	quality of instrument; processes used for the assessment.	• The magnitude of competency skills assigned to students during an examination introduces bias (KI, SN). • Some examiners exhibit unprofessional behaviours towards students during the examining (SN).	competency skills. • Select both mandatory and random competency skills during licensing examinations for students. • Introduce online evaluation of examiners as feedback for the nursing council.

SN=Student nurses; KI=Key informants; DA=Document analysis

7.6.1 Gaps identified in the clinical competency assessment

Ghana has an established clinical competency assessment system. The system is not fully effective due to some gaps that exist as established in the findings from the situational analysis. Although policies were guiding the nursing programme in Ghana, the clinical competency assessment content was meagre. The curriculum had extensive information on the contact hours for teaching and clinical placement for learning. However, there was no information on the conduct of formative and summative clinical competency assessment. Also, the log book for practice/field for nursing students contain twelve focussed skills assessment sections: basic(nursing process approach); first aid, emergency and disaster nursing; advanced nursing; paediatric nursing; perioperative(theatre) nursing; gynaecological nursing; thoracic nursing; traditional medicine, gerontology and home nursing; management and administration in nursing (governance); public health nursing; obstetric nursing; and psychiatric/mental health nursing that the student is expected to cover during their clinical training. However, there was no statement of the number of contact hours a nursing student needs to practice each of the skills.

Nurse educators and clinicians had little knowledge of the policy framework's implications guiding the clinical competency assessment. This finding may pose a challenge to students as these critical stakeholders may not align the teaching, practice and examination as useful as possible. Recruitment and training of examiners were not robust enough, and therefore the need for mandatory training in clinical competency skills of all prospective and current examiners was recommended. Recommendation of prospective examiners by experienced examiners in addition to the credentials was highly recommended. A formal training requirement may be mandatory to ensure nurse educators and clinicians' collaboration to improve their clinical nursing competencies before being appointed as examiners. There is a need to monitor the implementation of the standards and learning goals during nursing students' assessment. Auditing at the end of the examination by an external team may be helpful.

Management of fiscal resources was identified as one of the challenges facing nursing students due to the financial obligations during the examination process. Therefore, there is the need for the cost of the entire examination process so that the student's registration fee can cover the full examination costs, including the purchase of consumables and hosting of examiners. Remuneration of the examiners by the N&MC must also be paid on time, so they are not swayed

by the nursing institutions' benevolence, which is believed to affect the examination process's outcome. Health facilities used as examination centres for clinical competency skills assessment should be supported with the examination's resources and consumables to reduce the financial burden on nursing students who contribute and purchase these resources for the examination.

Testing reviewed updated rubrics by stakeholders (clinical educators and clinicians) before the examination is recommended. The introduction of Objective structured Clinical Examination (OSCE) may help standardize the clinical competencies assigned to students, presenting students with competencies of similar magnitude in the examination. Introducing mandatory and random clinical competency skills during the examination will ensure that students are examined fairly on similar competency skills. Continuous evaluation of the clinical competency examination results will help inform policies and improve the assessment system's quality. Also, feedback from the examination team and nursing students will provide useful data for quality improvement.

From the scoping review on the current practices in clinical competency assessment of nursing students globally, it was established that there is paucity of empirical evidence of clinical competency assessment. Also, there were no frameworks to guide the development of clinical competency assessment systems in Ghana and other low sub-Saharan African countries. It was also found that:

- Clinical competency assessment rubrics must be made available to the students, their instructors and nurses practicing in the clinical facility.
- The assessment tool/rubrics should possess all the quality criteria: objectivity; feasibility; educational impact; validity and reliability; defined scope; transparency and clarity; relevance; efficiency; support reflection; and provide feedback.
- The assessment system must be tested and validated before the examination.
- Examiners need to be trained on the assessment system and rubrics before the examination.
- The examination must be done in an environment that is less stressful to the candidates
- The assessment system should be evaluated and continuously improved.

These findings were inculcated into the design of the framework for improving the clinical competency assessment of the nursing students in Ghana.

7.7 THE DRAFT FRAMEWORK FOR ASSESSING CLINICAL COMPETENCE OF NURSING STUDENTS

The draft framework consisted of six connected constructs that sought to guide formative, summative and licensing clinical competency assessment of nursing students in Ghana. The constructs are: Clinical competency assessment context, Type and purpose of the examination, Aligning the assessment with the nursing education system, Clarity of instructions to students, Design and implementation of the assessment system and quality improvement.

7.7.1 Clinical competency assessment context

The clinical competency assessment context sought to provide an enabling environment for the clinical competency assessment system. It embodied eight sections: (1) Existence of legal mandate; (2) Existence of standard nursing curriculum; (3) Institutional arrangements; (4) Resource mobilization; (5) Motivated human resources; (6) Prescription of the clinical assessment system in the curriculum; (7) Effective scheduling of clinical competency assessment; and (8) Adequate funding. These sections were described by means of words and a diagram for the expert review. The refined descriptions and the diagrams which were developed after the expert review are presented in Chapter 9.

7.7.2 Type and purpose of the examination

The Type and purpose of the examination construct sought to describe what type (formative, summative or large scale) of examination the framework was being designed for and the reason for the examination. It was however, excluded by the experts in the evaluation phase, with given reasons, and has therefore subsequently been eliminated from the framework.

7.7.3 Aligning the assessment with the nursing education system

Aligning the assessment with the nursing education system recommended that the clinical assessment system should be aligned with the whole nursing education system and not designed and implemented independently of teaching and learning and other components of the system. It is comprised of six sections which include: (1) Synchronous review of curriculum and assessment system; (2) Alignment of formative and summative assessment of clinical competency (3) Standardization of teaching; (4) Examiner qualifications; (5) Training of educators; and (6) Training of preceptors/clinical educators.

7.7.4 Clarity of instructions for students

Clarity of instructions for students described the need for every detail on the clinical assessment system to be indicated. It should show students what is expected from them and be made available to them at the start of their training to prepare for assessment. It consists of five sections which are: (1) Schedule book should explain the clinical competency assessment process; (2) Practice schedule book should be stepwise or chronological; (3) Practice schedule book should correspond with the nursing curriculum (4) Practice schedule book should outline the required number of clinical hours per year; and (5) Competency skills should be aggregated according to the biological systems.

7.7.5 Design and implementation of the assessment system

Design and implementation of the assessment system comprises ten sections on how the clinical competency assessment system should be developed and implemented. These sections include (1) stakeholder collaboration; (2) Consideration of quality criteria during the design; (3) Pre-testing the assessment system before implementation; (4) Standardizing the clinical competency assessment; (5) Inter-rater reliability; (6) Prior exposure of examiners to the rubrics (7) Efficient organizational of the examination; (8) Include non-technical competencies; (9) Confidential online examiner and examination system evaluation platform for students and (10) Grading care plan preparation.

7.7.6 Quality improvement

Quality improvement is the last construct in the cyclical sequence of constructs constituting the framework, starting from the clinical competency assessment context. Quality improvement seeks to ensure continuous evaluation and research into the clinical assessment system to provide data for the N&MC to review and improve the assessment system. It is constituted of five sections, namely: (1) Comprehensive institutional outcome report; (2) Institute ongoing research into the clinical competency assessment system; (3) Ensure accountability; (4) Evaluation and re-accreditation of the examination facilities; and (5) Regular review of the examination system.

7.6. CHAPTER SUMMARY

This chapter presented the process used in the design of the framework for the assessment of clinical competence of nursing students. The development was guided by the World Bank framework for building an effective assessment system (Clarke, 2011). The five constructs were clinical competency assessment context, aligning the assessment with the nursing education system, clarity of instruction to students, design and implementation of assessment system, and quality improvement of a clinical competency examination. The testing of the draft framework is presented in Chapter 8.

CHAPTER 8 : EVALUATION OF THE FRAMEWORK FOR ASSESSING CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

8.1 INTRODUCTION

There is the need to test for the clinical utility (usefulness) of the framework to check whether it is fit for purpose and applicable within the context it has been designed for (Ellis and Levy 2010). Although the framework was designed through the use of scientifically sound methods, using data from various sources, the researcher needed to confirm that the framework was fit for purpose and applicable within the context for which it was developed. This chapter presents an evaluation of the framework for its relevance, context-specificity and applicability by experts within the context.

8.2 RESEARCH METHOD

A nominal group technique (NGT) was used to assess the utility of the framework. The NGT is an interpretive approach that engages stakeholders in an interactive discussion to generate priorities and ideas (Centers for Desease Control and Prevention, 2018; Rankin et al., 2016). The NGT supports equal participation, controls the extraneous discussion that frequently occurs when groups are convened, minimizes real or perceived power differentials among members, and, in the aggregate, minimizes the process loss that exists in unstructured focus group meetings (Centers for Desease Control and Prevention, 2018; Peña et al., 2012). The nominal group technique has four main steps: generating ideas, recording ideas, discussing ideas, and voting on issues (Centers for Desease Control and Prevention, 2018).

After presenting the study's background and findings to participants, the experts were given time to study the draft framework and provide comments on each construct. They were presented with an online survey to rate the utility of the draft framework. The researcher collected the individual

comments made by all the experts. The comments from the experts were used to revise the draft framework. The final framework was then presented. The experts went on lunch break and returned for the second round of discussion. Experts commented on the constructs in the draft framework accepts an inclusion or deletion of a constructs in the framework by a unanimous decision or voting. An agreement by the experts was considered a consensus on the acceptability of concepts in the draft framework.

8.2.1 Population and Sample

Fifteen experts (nurse educators, clinicians and managers) were purposively selected for the Nominal Group Discussion. Experts were identified and selected using a snowballing sampling technique. The researcher initially approached two experts known for their expertise in the field of assessment in nursing. They then recommended other experts who met the inclusion criteria. The participants were selected if they had at least five years of experience as nurse educators and examiners. Other requirements were registration with the nursing council, being at the rank of a senior nursing officer or higher and having five years' experience in clinical competency assessment. The two participants were asked to recommend colleagues they thought met the inclusion criteria for the study. They recommended 17 other experts. Prospective experts were contacted by call, and the purpose of the study was explained to them to determine their interest in participating. The recommended experts were invited with a written letter (Annexure G) and information on the study (Annexure M). The researcher also followed up with phone calls on the experts to seek their consent. Out of the 19 participants who were invited, only 15 consented to participation. The four who declined participation gave reasons related to distance and time constraints. The venue for the workshop was communicated to the experts. On the day of the review, however, only 12 experts showed up and participated in the nominal group discussion. The other three called on the day saying they had emergency meetings.

8.2.2 Informed consent

The researcher provided prospective experts with an information sheet and consent form which were signed and returned to the researcher.

8.2.3 Data collection

The researcher submitted a soft copy of the framework to the experts two weeks before the nominal group discussion. The researcher booked a classroom at a Nursing and Midwifery Training College in Accra for the nominal group discussion. The school was not included in the data collection in phase two. All Covid-19 protocols were observed.

The researcher welcomed the participants and reminded them of the content of the consent form they signed, including issues of confidentiality and their right to withdraw from the study at any point without penalty.

8.2.3.1 Presenting a draft framework to experts

The researcher presented the scoping review outcomes, document analysis, key informant interviews, and an overview of the draft framework to the experts. The researcher gave participants the opportunity to seek clarification on any aspect of the framework after the presentation.

8.2.3.2 Recording ideas on draft framework

Due to the need to limit contact due to the Covid-19 pandemic, the first part of the nominal group, namely the recording of ideas on the draft framework, this was done prior to arrival by means of a RedCap survey. The researcher was able to gather the comments of the experts and their rating of relevance, context specificity, and applicability of the draft framework for assessing nursing students' clinical competency. The RedCap survey (Annexure U) was sent through either email or WhatsApp® platforms of participants. The survey consisted of three questions: expert demographic information, a review comment section, a question each on rating of relevance, context specificity and utility (applicability). Then three open-ended questions on strengths, weaknesses and suggestions to improve upon the drafted framework for assessing nursing students' clinical competency in Ghana. After the completion of the survey, there was a one-hour lunch break. Field notes were taken during the data collection process.

8.2.3.3 Discussing ideas

The researcher used the comments from the survey to reorganize the framework and then had a guided discussion with experts on their views of the draft framework. The sections (content) of the draft framework served as the guide for the discussion, so participants discussed and reached a consensus on each other's comments. The discussion section was audio-recorded and transcribed by the researcher**.**

8.2.3.4 Voting on sections of the draft framework

Experts were allowed to vote on the sections of the draft framework after the discussion on each section. They voted to either support or refute the inclusion of a section in the draft framework. An 80% agreement by the experts was considered to represent consensus and indicated that that section should be included in that section in the draft framework.

8.2.4 Data analysis

A deductive qualitative content analysis was used to synthesize the feedback and input from experts. The same methods were used to analyse the open-ended responses in questions eight, nine and 10 from the experts (Annexure U). The synthesis was done according to the sections of the draft framework discussed. For questions one to six, a quantitative descriptive analysis was conducted in the form of minimum, maximum and mean (average).

8.3 RESULTS

8.3.1 Participant demographic characteristics

Twelve experts honoured the call for the nominal group discussion. They comprised six nurse educators and six clinicians.

Table 8. 1: Years of Experience

Item	**Min**	**Max**	**Mean**
Years of experience in the field	10	20	16.36

Years of clinical competency assessment experience	5	15	9.45

The average years of experience of the experts was 16.36 years. The average number of years of experience specifically in clinical competency assessment was 9.45 years as shown in Table 8.1. The experts who participated in the nominal group discussion therefore had sufficient experience assessing clinical competency assessment in Ghana to review the framework.

8.3.2 Ratings: Relevance, context-specificity and feasibility

Table 8.2: Ratings: Relevance, context-specificity and feasibility

Item	**Min**	**Max**	**Mean rating**
Relevance	7	10	8.45
Context-specificity	6	10	8.54
Feasibility	7	10	7.82

From Table 8.2. it can be seen that the minimum rating of the draft framework on relevance, context-specificity and feasibility ranged between 6 and 7 on a ten-point scale. The maximum rating was 10 points for all three areas**.** The mean rating of the three descriptors was between 7.82 to 8.54. The survey results showed that the framework was relevant and had context-specificity. It is worth noting that the feasibility score was lower than the others (7.82) as it may indicate that they liked the framework but were less sure if it was implementable.

8.3.3 General comments

The experts expressed strong support for the framework saying that it has potential to improve clinical competency assessment in Ghana and clinical nursing education in general. Participants stated that the framework was specific and involved all the stakeholders of nursing education in Ghana. The experts were also commented favourably on the framework in that it sought to hold all the stakeholders accountable for the roles they play in the clinical competency assessment. Compulsory training of the examiners before deployment and providing detailed information on the clinical examination expectations to students from the start of their training was

commendable. They commented that the framework was relevant, and the regulator will find it useful. Some of their anonymous verbatim comments they made were:

> *"l think the framework is quite good. It is well developed. From the background, you did a lot of searches to get what is in the literature, which forms the basis upon which you are going to do the clinical assessment framework. I think you have done a good job"* – **P10**

> *"It highlighted important areas that are not (currently)considered though they affect the examination outcome. For example, the remuneration of examiners, stakeholder consultation or involvement and taking care of examiners"* – **P9**

Two experts stated that even though the framework is well developed and scientifically sound, it seems to be directed towards the examiner more than other clinical competency assessment stakeholders. They stated that if the framework is made available, students will blame the examiners for unsuccessful with the clinical competency assessment component of the licensing examination. In terms of applicability, the expert stated that the students spend many of their clinical practice hours far away from their Nursing Education Institutions, which affects supervision. It may not be possible to apply the framework that requires collaboration between the nurse educators in the NEIs and the clinical educators at the various clinical facilities during vacations. The experts also alerted to the large and increasing number of students that need to be examined within a short-allocated time.

> *"Students spend more clinical hours during vacation, and supervisors don't follow up always, so adherence to a certain portion of the framework may not be possible. For example, the collaboration between the clinician and the tutor when the students are on vacation clinical practice"* – ***P11***

8.3.4 Clinical Competency Assessment Context

Most of the experts supported the content of the 'clinical competency assessment context'. The discussions on each of the constructs comprising the context of clinical competency assessment context is described below.

8.3.4.1 Existence of legal mandate

The experts supported the inclusion of the policies in the draft framework. A connection between the policies that guide nursing education and assessment, the curriculum and the documents

available to guide the day to day operation of the clinical educators to prevent confusion. Policies should spell out precisely what the students need to know concerning the competencies expected of them. Also, the policies must be accessible to all stakeholders to be abreast with the examination process. Some of the experts commented as follows;

> *"The curriculum and practice schedule book are a good one which serves as a guide for the student training to become a professional nurse. To help the student adequately prepare for the clinical assessment, it needs to spell out specifically what the student needs to know and the competence that needs to be achieved to prepare for clinical examination adequately".* – **P6**

> *"There should be a connection between the Act, curriculum, practice schedule book. If there is no connection, there is going to be a form of confusion about the way things are done"* -**P8**

Lessons learnt and the researcher's decision - Based on the experts' consensus, the construct "existence of legal mandate' was included in the framework with a write up clarifying what policies were available and advocating for the availability of such documents for the use of all stakeholders and be abreast with their expectations.

8.3.4.2 Existence of standard nursing curriculum

Experts believed a standard curriculum should be included in the framework. The curriculum serves as a guide for the training of nursing students and ensures that they achieve the expected competence;

> *"The curriculum serves as a guide for the student training to become a professional nurse. For it to help the student to adequately prepare for the clinical assessment, it needs to spell out specifically what the student needs to know and the competence that need to be achieved. This will help students to adequately prepare for the clinical examination".* – **P6**

Lessons learnt and the researcher's decision: based on decision of experts on the inclusion of a standard curriculum in the training of nursing students to streamline the content and competences expected, this section was included in the framework.

8.3.4.3 Institutional arrangements

The experts' consensus was that the nursing council should work more closely with the stakeholders, allowing them to contribute to nursing education in the country. They believe the nursing council can do this by making information available to the stakeholders and delineating all the stakeholders' roles in clinical competency assessment to avoid role confusion.

> *The NMC should work hand in hand with all the stakeholders and health agencies in all policies concerning the examinations. Information should always be readily available for assessment* – **P1**

Lessons learnt and the researcher's decision: The construct "institutional arrangement" was included and described in the framework based on expert consensus.

8.3.4.4 Resource mobilization

The experts believed that it is not the nursing council's responsibility to mobilize resources for the examination. They believed that the provision of consumables and other clinical assessment equipment should be jointly provided by the NEIs, the health facility and the N&MC. According to the experts, most health facilities use monies paid by the National Health Insurance Scheme to purchase consumables. However, the amount paid by the Scheme is inadequate for purchasing the consumables for the hospitals, coupled with the delay in the payment (Christmals & Aidam, 2020). Additionally, the Scheme puts a cap on the amount it can pay for consumables that hospitals can use. Hence it will be important that an understanding be reached between the N&MC, the health facilities and the nursing education institutions to provide what is needed before the examination. However, one participant disagreed with the other experts that the provision of consumables should be excluded in the section of the framework named "policy document" and reframed in another section as "support from stakeholders";

> *"l want to say something about the provision of consumables by the hospital as suggested by the other participant some hospitals depends on national health insurance, and they have a quotation on how much consumables you can use on one person so if you are allowing the students to use the consumables from the hospital then it is going to incurred so much debt, next time l don't know how it's going to happen the hospital may charge the school for using the hospital or may ask them to bring their consumables as its happening now so l think there should be a collaboration between council, the*

training institution and the hospitals that are used before an examination if they can have a meeting to look at the possible things that the hospital can give out freely and the ones that the school will have to pay for and if they council can support from their registration fees" – **P4**

There were suggestions that NEI's, examinations facility and N&MC must provide the examination resources. One expert disagreed with resource mobilization in the framework, stating that it should be an unwritten agreement. The researcher decided to include the construct because it was necessary to ensure clarity on roles and terms of reference for all stakeholders and thereby ensuring accountability;

"there should be government support and also support from the N&MC to find the examination" – ***P1***

"Student nurses who have registered to sit the licensing examination must pay for the provision of resources for the examination" ***- P5***

Lessons learnt and the researcher's decision: Eleven (11) out of the twelve (12) experts supported the inclusion of "resource mobilization" so it was included in the framework.

8.3.4.5 Motivated human resources

All the experts agreed that the current recruitment process must be improved and called for a transparent and robust process. They agreed that the examiners must engage in continuous professional development or education tailored towards clinical competency assessment to retain their appointment. They also stated that there should be an online examination that applicants must pass before being appointed examiner. Timely remuneration of examiners was seen as a critical action by the Council in motivating the examiners and avoiding conflict of interest when the NEIs host examiners. Participants also believed that an insurance policy must be provided for the examiners because they travel long distances, sometimes throughout the night, to examine students in different regions of the country;

"There should be an ongoing assessment online (that a prospective examiner must pass) to be appointed as an examiner by the N&MC…". The prospective examiner must also be a recommendation by an experienced examiner "– **P11**

"I also think that the recruitment of examiners is talking from the point of clinicians, hmmm…. at least two nurse managers should be consulted based

on the person's background or training because recently l met somebody l know to be a public health nurse conducting general nursing practical's and marking care study, l was a bit curious, so l find out a little about her background she was a community health nurse…." **-P4**

The participants proposed timelines for the examiners' recruitment but settled on the examiners' payment at the post-examination meeting through their bank accounts or mobile money transfers. They believed experienced examiners decline to participate in the examination because they sometimes have not been paid for their previous examination roles when they are being called for an examination. The participants also stated that the examiners should be provided with a means of transportation or transport allowances for it as only the chief examiners who are currently provided with official transport for the examination;

"Remuneration of examiners must be done by the NMC in a way that by the end of the post-examination meeting, every examiner will be paid by the momo (mobile money) or bank by sending a text message before the chief examiner leaves for the council to prevent examiners expectation of gifts from students" **-P1**

Lessons learnt and the researcher's decision: the experts agreed that the section named "motivated human resource" was essential in nursing students' clinical competence in Ghana. Therefore, it was included.

8.3.4.6 Prescribe clinical assessment system in curriculum

The experts agreed that the curriculum should state the examination mode and provide the core competencies that need to be assessed in a standardized clinical competency examination. They believed that all policy documents should talk to the curriculum, which will also be reflected in the clinical competency assessment guides/booklets.

"Students must be made aware of the structure of the examination they are going to take as this will take away the shrouded secrecy of the examination" – **P7**

"When the curriculum is made available, students and examiners will see the importance of the curriculum"- **P10**

Lessons learnt and the researcher's decision: the researcher included the construct "Prescribe clinical assessment system in the curriculum" in the framework.

8.3.4.7 Effective scheduling of clinical competency assessment

Participants agreed that the clinical competency assessment should be scheduled when the candidates, who would have completed college and their training allowances terminated, could access the university accommodation and other resources to prepare for the examination to cut down on cost.

Lessons learnt and the researcher's decision: The section "Effective scheduling of clinical competency assessment" was therefore included in the researcher's framework.

8.3.4.8 Adequate funding

Regarding the examination funding, the experts believe that the students are responsible for the cost of examination if the government does not provide funding. They believe that the nursing regulatory body and the NEI could also contribute to the funding of the examinations. They believe that the nursing licensing examination policy should clearly state the source of funding for the examination activities. They also reacted to the situational analysis findings regarding the students contributing to accommodate and feed the examiners. Although all experts believe that the provision of board and lodging for the examiners is essential, there were varying views on who should provide and fund it. Some participants believed that the NEIs should be responsible for the examiners' board and lodging. Others believe that the examiners' meals and accommodation should be the sole responsibility of the nursing council. Others also stated that N&MC should develop a standardized levy for all candidates to support the examination process. Experts suggested the NEI should provide board and lodging for the examiners without direct contributions, in terms of money or labour, from the students. The experts indicated that transportation and insurance should be planned for examiners who travel long distances to examine students;

> *"Examiners should be fed by the schools and NMC with laid down rules guiding it. Feeding and provision of accommodation for examiners is critical and must be encouraged"* - **P8**

"The NMC should solely handle feeding and accommodation of examiners because when students are feeding me and paying for my accommodation, it does not make the examiner objective enough"- **P7**

Lessons learnt and the researcher's decision: Funding of the examination process is a vital component of the assessment system; therefore, the experts' unanimous decision was that it be maintained in the framework.

8.3.5 Type and purpose of assessment/examination

The type and purpose of the assessment referred to whether the examination is formative assessment, summative examination (in school) or national licensing examination with its associated purpose. Generally, the formative assessment is conducted to evaluate students' progress, while summative assessment is carried to decide student progress and continuation of a programme. On the other hand, national licensing examinations seek to provide a gateway for competent practitioners' admission into a profession.

The experts believe that if the framework is being developed for clinical competency assessment and is seeking, based on the situational analysis, for alignment of the formative, summative, and large scale examinations, there was no need to include the type and purpose of the examination in the framework. They also stressed that this had been well articulated in the alignment of assessment with the framework's components hence it was unnecessary.

Lessons learnt and the researcher's decision: the component on type and purpose was excluded from the framework.

8.3.6 Clarity of Instructions for Students

Clarity of instructions to students was considered one of the major additions that the framework sought to add to Ghana's current clinical competence assessment system. The discussions of the experts on the subsections of this construct are presented below.

8.3.6.1 The schedule book should explain the clinical competency assessment process

The experts supported the fact that detailed information on the students' clinical schedule book's licensing examination will guide students' clinical learning.

"Information on the licensing examination must be included (in the practical schedule book)"– **P2**

Lessons learnt and the researcher's decision: as the experts supported the inclusion of information on the licensing examination in the student's practical schedule book, it was included in the framework.

8.3.6.2 Practice schedule book should be stepwise or chronological

Regarding the suggestion that the clinical practice schedule book be reorganized into a stepwise or chronological sequence of competencies, the experts agreed and said it is essential that students know what competencies they should master at every stage of their training. The experts believed that stating students' requirements would enable them to seek remedial opportunities to complement what their teachers have taught them in class and clinical settings;

"Every student nurse must be able to (cover) what is expected of them during their final licensing examination. They will be able to do this if adequate information on the mandatory procedures, number of hours to be attained at every clinical and vacation practicum, and the number of procedures to be carried out at every practical examination schedule is well detailed in their green books and curriculum" – **P9**

Lessons learnt and the researcher's decision: According to the experts, indicating the expectations of nursing students at each level was essential and should be included in the framework. They said it could help clinicians to better support students in the clinical areas. Therefore, it was maintained in the framework.

8.3.6.3 Correlate practice schedule book with nursing curriculum

Experts indicated that "corresponding practice schedule book with nursing curriculum" be included in the framework. They believed that including it in the framework will ensure that nurse educators and clinicians will be guided to teach effectively;

"The current curriculum for training nursing students corresponds with the competence stated in the schedule book. Since it is already in place, it should be maintained" – **P4**

Lessons learnt and the researcher's decision: correlating content in the curriculum and the schedule book will enhance teaching and learning of nursing students. Nurse educators and clinicians are guided on what to teach and supervise. This section was included in the framework.

8.3.6.4 The practice schedule book should outline the number of clinical hours per year

The experts reported that when the practice hours are indicated in the practice schedule book, students will know how many hours they are expected to cover during each practice session and the year. It will also ensure students are held accountable when they have not completed the needed clinical hours before completing their programme;

> *"Students should know from their clinical book how many hours they are expected to meet for each clinical schedule". –* **P7**

> *Indicating the time for clinical practice will enable both students and the (clinical educators) to have knowledge on the number of hours each student is supposed to spend in (clinical practice) –* **P2**

Lessons learnt and the researcher's decision: When clinical practice hours are indicated, students are aware of the hours they are expected to meet to qualify for the licensing examination. This section of the framework was, therefore, maintained.

8.3.6.5 Aggregating the competency skills according to the biological systems

Experts supported the aggregation of clinical competencies according to the systems in the body. However, they suggested that it should be a separate section in the practice schedule book;

> *"The skills and competences in assessing the body systems should be given a separate container in the schedule book so it can guide students as they learn" –* **P10**

Lessons learnt and the researcher's decision: Aggregating the clinical competencies was supported by the experts. They believed that the aggregated competencies should be included in a separate section of the schedule book, so the section was maintained in the framework.

8.3.7 Aligning Assessment with Nursing Education System

Participants agreed that the alignment of the clinical competency assessment with the nursing education system is critical to ensure stability and order in the education system and the assessment system. Doing this will ensure students are assessed on what they were taught and knew they would be assessed on from the beginning of their training. The specific elements of the experts on each of the subsections of the construct have been described below.

8.3.7.1 Synchronous review of curriculum and assessment system

According to the experts, the nursing curriculum is reviewed by the nursing council from time to time. For example, the current curriculum was a revised version of the 2007 version compiled in 2015. New additions were made, such as introducing French language, Sign language, Entrepreneurial skills and Supply chain management into the nursing curriculum. Therefore, it is necessary that at every revision of the curriculum, a corresponding or concurrent clinical assessment system review be done so as to align the clinical assessment system with the content of the curriculum. Likewise, the clinical assessment rubrics should be accessible to the nursing education institutions and the students to facilitate training and assessment.

> *"The policies should be made available in the student schedule book and should be assigned to the various areas as in the schedule book* – **P1**
>
> *The component tasks (rubrics) should be made available at least to all tutors to standardize practical teachings"* – **P12**

Lessons learnt, and researcher's decision: Experts commented favourably on the research included the subsection on synchronous review of the assessment system and nursing curriculum. It was therefore included in the framework.

8.3.7.2 Aligning formative and summative assessment of clinical competency

Experts agreed that formative and summative assessment must be aligned. The majority (9) even opted for computation of the two for the final examination. Experts believed that it would boost the confidence of students when performing clinical competencies**;**

"Formative clinical assessment should be strengthened by both tutor/lecturers/instructors and preceptors, especially when students are on clinical (practice" – **P10**

"The formative and summative assessments should be computed together for the final assessment of a student to qualify as a professional nurse". – **P6**

Lessons learnt and the researcher's decision: Aligning both forms of assessment could benefit the students. It will help them the opportunity for peer mentoring, assessment and self-learning, according to the experts. Therefore, it was maintained in the framework.

8.3.7.3 Standardization of teaching

Experts believed that when the competencies are standardized, it may reduce the uncertainties on the content, clinical skills and attitudes to inculcate into students. It will also reduce the situation where a nurse educator from a different institution will award lower marks to a student down because they are not performing the procedure the nurse educator (now examiner) teaches. Making the clinical assessment rubrics available to all the stakeholders also promotes standardization of teaching as the assessment mode also guides teaching. They also added that the nursing council should make videos of the standardized clinical procedures to guide the nursing educator, students and clinicians;

"These component tasks that we use to (examine) our students in the practical, you realize that it is more or less a classified document for council. That is my understanding because I cannot see if the council will distribute such things to any school tutor. Hence, it looked like the tutor must find a way out in getting your procedures aligned, which means that you will teach what you feel is correct and what you were taught in school that may not necessarily be aligned to the step by step procedure by the council. Hence, I think that document should be made available. It shouldn't be something like 'cocaine and videos on standardized practical demonstration of all the procedures made available by NMC to all NMTC and schools. NMC should allow nurses to present videos to them for scrutiny and adoption" – **P12**

Lessons learnt and the researcher's decision: standardization of the competency skills is a pivotal issue in assessing clinical competency. The use of videos that the N&MC mandates will be beneficial. Therefore, this was maintained in the framework.

8.3.7.4 Examiner qualification

Regarding the examiners' qualification, the experts agreed that a first degree, active registration and a minimum of three years' work experience should be pre-requisites for prospective examiners. They stated that one should have served as an invigilator in a previous examination and be recommended by at least an experienced examiner or their nurse manager before qualifying to be an examiner. Aside from that, the person should go through an assessment by the nursing council to ensure they are capable and competent clinically before examining students.

> *"It should involve both formal and informal training. Interested examiners should show personal preparation and readiness to be examiners. They can put into writing their reason and desire to become examiners"* – **P10**

> *"Prospective examiners must be trained and assessed both practically and theoretically before given the right to assess students because some of the examiners are not conversant with some of the steps for the procedure. As part of the training of educators/preceptors/clinicians, various exchange programmes should be identified to help build their skills"* – **P9**

Lessons learnt and the researcher's decision: based on the expert's recommendation, the subsection was included with some modification.

8.3.7.5 Training of educators

The experts agreed that the training for the educators was essential and should, therefore, be included in the framework. They said nurse educators should be trained in teaching and assessing clinical competency. They should be clinically competent to teach and examine a student;

> *"In-service training at facilities for both educators and clinicians will help share knowledge and skills. Organize with the collaboration between the hospital, school and N&MC. Educational heads and N&MC should monitor the logbooks for educators to upgrade their knowledge and skills of what is happening in the clinical areas"* – **P6**

> *"It should involve both formal and informal training. Interested examiners should show personal preparation and readiness to be examiners. They can put into writing their reason and desire to become examiners"* – **P10**

Lessons learnt and the researcher's decision: based on the expert recommendation, the subsection was included in the framework.

8.3.7.6 Training of preceptors/clinical educators

Experts identified formal training of all examiners as an essential issue. Although one expert thought that since examiners are already licensed to practice in Ghana, there was no need for training, the remainder believed it would promote professionalism among the examiners;

> *Preceptorship in the hospital is weak. The distinction as to whose responsibility it is for the welfare of the preceptor should be clarified. Preceptors can also attend lectures at the school to familiarize with what is taught at the school* – **P7**

> *"Formal training of skills and assessment of all prospective examiners may not be necessary because they were examined and licensed by N&MC to practice and had been practising for several years. Recommendations from at least two persons (previous manager/present manager) of staff being recruited as an examiner"* **-P4**

Lessons learnt and researcher's decision: formal training and assessment of examiners' skills set would enhance homogeneity when nursing students are being assessed. Therefore, it was retained in the framework based on the expert's advice.

8.3.8 Design and Implementation of Assessment System

Participants supported the inclusion of the design of the examination in the framework. They proposed that nurse educators and clinicians be involved in the design of the examination. Students should be made aware of the examination design so they will be aware of how the examination is planned. Some of the responses by the experts were as follows;

> *"Examination should be designed in a form that the students have prior knowledge as to what the exams entail, and there should be uniformity in what they are learning from the schools, hospitals and what NMC will be setting in the examination"* - **P8**

The specific discussions on the subsections of the construct "Design and Implementation of Assessment System" were presented below.

8.3.8.1 Stakeholder collaboration

Stakeholder collaboration was seen as an essential component of the framework by the experts. They believed that this forms the foundation of decision making regarding what should be taught, learnt and evaluated in nursing. Experts also stated that the N&MC should be the driver and collaborator with other stakeholders in clinical competency assessment and nursing education in general.

> *"NMC should meet with stakeholders to identify other forms of clinical assessment other than the face-to-face method. E.g. N&MC can come up with scenarios for students to pick and perform the procedures on the manikins for school who have inadequate/certified health facilities in the areas".* - **P9**

Lessons learnt and the researcher's decision: The subsection was included based on expert approval.

8.3.8.2 Consider quality Criteria during the design

According to the experts, assessment needs to be of an appreciable quality to be useful and relevant. The reliability, validity and fairness that plagues clinical competency assessment in Ghana needs to be addressed as early as possible to improve the credibility as many countries learn from the N&MC.

Lessons learnt and the researcher's decision: The subsection was included based on expert approval.

8.3.8.3 Pre-testing the assessment system before implementation

The experts also agreed that pre-testing of the assessment system is essential for its applicability. It is closely related to the quality of the assessment system. The examiners and the students should have confidence in the system and know that they will be successful if they prepare well and that passing the examination would not be left to chance. They believed that this subsection could be added to quality criteria but can also be left independently.

Lessons learnt and the researcher's decision: The researcher included pre-testing the assessment system before implementation" as a separate section because of the emphasis that needs to be placed on it.

8.3.8.4 Inter-rater reliability

According to the experts, the examiners' training, standardization of clinical competency teaching and assessment, and pretesting of the clinical competency assessment system are necessary to establish inter-rater reliability. Experts supported the fact that nurse educators, clinicians, and preceptors are trained and retrained on clinical competency assessment, using the rubrics for clinical competency assessment to ensure their level of understanding and rating are similar to ensuring inter-rater reliability;

> *"When examiners are well trained before they are assigned to be examiners, it will ensure that they will be conversant with the grading system and the team will assess the student similarly without any issues that will have to be reported to the chief examiner"*- **P4**

Lessons learnt and the researcher's decision: the researcher included the subsection based on approval from the experts.

8.3.8.5 Prior exposure of examiners to the rubrics

Experts supported inclusion of "prior exposure of the clinical assessment rubrics to examiners". Experts believed that examiners must be privy to updates in the assessment rubrics to teach nursing students. Additionally, access to these rubrics will standardised examiners grading of nursing students' clinical competence;

> *"The component tasks (rubrics) should be made available at least to all tutors to standardize practical teachings. Since they serve as examiners too, it will help to guide how they grade nursing students during the clinical examination"* – **P12**

Lesson learnt and the researcher's decision: access to assessment rubrics enhances effective teaching and grading of nursing students' competence therefore, this section was included in the framework.

8.3.8.6 Efficient organizational of the examination

Though the experts recommended planning the examination during the vacation, it will be challenging to implement because of the number of candidates and the different nursing programmes that need to be addressed. They believe that the organization should be done in time and the dates communicated to the candidates so they could make plans and raise funds for it;

> *"Examination date should be made known to candidates early enough like the first semester in the third year"* – **P7**

> *"This (Efficient organization of the examination) should be part of the policy and stakeholders can determine the appropriate time and make changes as and when the need arises during emergencies, national issues, legal issues etc."* – **P10**

Lessons learnt and the researcher's decision: the researcher included the subsection based on experts' approval. It was edited to exclude the rigid recommendation for examining in the holiday.

8.3.8.7 Standardizing the clinical competency assessment

The experts believed that standardizing the clinical competency assessment was essential. They suggested that N&MC identify some competencies as mandatory. However, one expert also thought that the care plan preparation could be modified into a mandatory procedure for all the students. Others were worried about abandoning real patient problems during the day of examination if some procedures are categorized as mandatory;

> *"I think the grading of history taking and physical assessment by students during the care plan preparation should be modified into the mandatory allocation of a task called: 'patient assessment' plus a random task identified by the student"* – **P5**

> *"This purpose is good so that it can bring some form of uniformity in the assessment so that some basic skills/competencies could be performed by all candidates"*– **P10**

Lessons learnt and the researcher's decision: the researcher believed that, although the examination is done in the hospital, it does not replace nurses' daily work on the ward. Therefore, the nurses should remain responsible for providing care for the

patients whose care activities are not involved in the examination. Standardizing the examination also means that the N&MC may need standardized patients who relieve actual patients of the clinical competency examination pressure. The researcher, therefore, included the standardizing clinical competency assessment in the framework.

8.3.8.8 Grading care plan preparation

The experts recommended that care plans should be graded when students are developing the plan. They supported the observation and grading of students during care plan preparation. They believed that it would prevent students from falsifying patients' problems and would provide an opportunity to assess the non-technical skills of nursing students. They agreed that rubrics for physical assessment should be developed for the examiners to use in that regard;

> *"Grading of care plan must be mandatory for all candidates, and rubrics or tool should be used and rated accordingly. Ahead to toe assessment of each candidate so it can help the candidate to identify, especially, the patient problems"*- **P10**

> *"There should be a rating scale for the assessment of care plan to avoid candidates cooking problems for patients but identify real problems from the patients and draw a care plan for the patient"* – **P1**

Lessons learnt and the researcher's decision: observing students when they are planning care for the patients will prevent students from falsifying the problems. Therefore, students will utilize all the strategies to assess, therefore maintained in the framework based on expert approval.

8.3.8.9 Include non-technical competencies

The majority (11) of the experts maintained that non-technical skills should be added to the mandatory skills because mastery will improve patient satisfaction and enhance the practitioner's confidence. Although one expert thought that every nursing student would have mastered the non-technical skills, another expert stated that many students do not perform well when assessed on non-technical skills;

"Yes, most students do not do well on non-technical skills, e.g. Communication which may be due to the increasing non-nurses as tutors in the schools" – **P6**

"Inclusion of non-technical skills in assessment may enhance patient satisfaction and promote self-confident in the nurse"-**P4**

Lessons learnt and the researcher's decision: non-technical skills such as communication are essential issues in nursing practice. Including them in the clinical competency assessment is essential. This section was, therefore, maintained in the framework.

8.3.9 Quality Improvement

According to the experts, quality improvement is not negotiable if the system is to remain relevant and useful. They unanimously agreed that this should be a vital component of the framework. The specific discussions regarding the subsections of the construct quality improvement were presented below;

8.3.9.1 The comprehensive institutional outcome report

According to the experts, the inclusion of a comprehensive institutional report will help the NEIs adjust and make amendments in areas where they are weak and improve on their performance;

"This is good because it helps the school to adjust their (teaching) and assessment of students and for the students also to do more" – **P8**

"Students should set their performance targets with the tutors, and the tutors will guide them to achieve them" – **P7**

Lessons learnt and the researcher's decision: The researcher included the subsection based on experts' unanimous approval.

8.3.9.2 Institute ongoing research into the clinical competency assessment system

Continuous improvement is only possible if continuous research is conducted into the clinical competency assessment system, yielding data and evidence on which policy and changes are based, according to the experts. They agreed that instituting an independent and confidential study into the assessment system will provide credible data for the Nursing Council;

"Periodic monitoring for improvement or excluded from examining by N&MC and training colleges to ensure standards" – **P11**

"I strongly agree with this point because sometimes, one of the two examiners just copy from the other…" – **P4**

Researcher's decision and lessons learnt: Continuous research into the clinical competency assessment system was included based on expert's approval.

8.3.9.3 Ensure accountability

Experts supported the inclusion of "accountability" in the framework to provide some form of motivation (positive or negative) and fairness of implementation;

"Reward system should be designed to motivate tutors and clinicians likewise; a system of punishment should be made known to all stakeholders and should be seen to be fair and effective" **-P7**

"Perfect, because if both the clinician and students are held accountable, it makes them responsible" – **P8**

Lessons learnt and researcher's decision: holding stakeholders accountable is a laudable idea. It was, therefore, included in the framework.

8.3.9.4 Evaluation and re-accreditation of the examination facilities

Experts agreed that health facilities that are used as examination sites must be evaluated and accredited to ensure that they have the minimum requirements to be used for the examination. They said some examination facilities are not sufficiently resourced to serve as examination sites, but because the N&MC kept using them, they think everything is acceptable;

"Some facilities are not adequately resourced for examination in terms of number of patients as related to the number of candidates, consumables and non-consumables available, types of patients available, standard of care rendered in the facility" – **P6**

"This is important as some facilities feel that everything is okay once N&MC is using their facility. Hospitals should apply to be inspected before they can be examination centres" – **P7**

Lessons learnt and the researcher's decision: This section was maintained in the framework based on the experts' approval.

8.3.9.5 Regular review of the examination system

Experts believed that the review of the clinical competency assessment system must be done periodically. Also, stakeholders must be invited to participate. Also, clinical teaching and learning materials associated with the system should be reviewed and made available to nurse educators and clinicians to ensure alignment of teaching and assessment;

> *"This should be done periodically with the representation of staff from all stakeholders, and especially in the hospitals, persons to include are preceptors and bedside nurses"* – **P7**

> *"Regular review to inculcate current trends in nursing by NMC, educators and clinicians (specific time interval)"* – **P11**

Lessons learnt and the researcher's decision: The experts agreed that it was essential for the system to be reviewed regularly; hence this section was maintained in the framework.

8.3.9.6 Confidential online examiner and examination system evaluation platform for students

Experts supported the inclusion of an online examiner and students' examination evaluation as they believed that it might promote fairness and eliminate students' abuse during the examination. Although they unanimously believed that it should be included in the framework, they also believed that it is more of a quality improvement component than design and implementation.

> *Confidential online evaluation of examiners and the general examination may promote fairness and eliminate the abuse of students. Lessons from the analysis of student evaluation will further enhance the credibility of licensing examinations*-**P4**

> *Candidates and coordinators must be allowed to evaluate examiners performance at the end of each examination. This will help to improve the examiner's attitude and performance towards the examination. However, NMC should not use the information to punish the examiners, especially when it is negative, but instead use it to improve examiners' skills generally. The evaluation responses will also serve as a survey to know the areas where more training is needed for the examiners* – **P9**

Lessons learnt and the researcher's decision: The researcher moved the "Confidential online examiner and examination system evaluation platform for students" from the design and implementation of the clinical assessment system to quality improvement.

8.4 CHAPTER SUMMARY

This chapter reported on the evaluation of the draft framework. Snowballing sampling technique was used to select 15 nurse educators and clinicians who experienced assessing nursing students' clinical competency skills. However, only 12 were available to participate in the discussion. After a presentation by the researcher, experts were given the draft framework to study and provide their comments and assess the draft framework's relevance, context-specificity, and feasibility. A nominal group discussion was done where experts voted on sections to be included to improve the draft framework. Chapter 9 presents the final framework that was developed after the comments from the experts.

CHAPTER 9 : FRAMEWORK FOR ASSESSING CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

9.1 INTRODUCTION

The framework comprises five key constructs: clinical assessment context; clarity of instructions for students; alignment of assessment system with nursing education system; design and implementation of the assessment system; and quality improvement of the clinical competency assessment system, linked together sequentially. In the simplest form of description, the framework shows that although the assessment of clinical competency is seen as a formality for nursing students, other vital areas in the planning and administration of the examination lead to the effective execution of the examination include the context in which the assessment system is being implemented, alignment of teaching and assessment and then quality improvement of the assessment system as shown in table 7.1.

Conceptually, the framework in an interconnection between five constructs which are arranged in a cyclical sequence. The sequence begins with the clinical competency assessment context, which sought to create an enabling environment within which the clinical assessment is carried out—the clarity of instructions for students, a derivative of the policies. Curricula and guidelines covered in the first construct ensure that students receive and understand what is required of them very early in their journey to prepare better during training to meet the standard. Aligning clinical competency assessment with the nursing education system is in line with the curricula and other documents guiding teaching and learning, ensuring students can access and understand the processes involved. The fourth construct is the design and implementation of the assessment system, which constitutes the actual examination system. It comprises the development and implementation of the assessment system with critical attention to quality, efficiency, stakeholder collaboration, and standardization of the content to reduce bias. Lastly is quality improvement, a construct that continually evaluates the clinical competency assessment system to improve the assessment system.

9.1.1 Clinical competency assessment context

This framework development refers to instituting structures that ensure that the examination system is implemented smoothly. It entails policy guidelines, recruitment and remuneration of examiners, provision of resources for examination.

9.1.1.1 Existence of legal mandate

There is an Act of Parliament (Act 857 of 2013), the Health Professions Regulatory Bodies Act, (part three) that gives the Council its mandate, including licensing examinations. The legal mandate is given to the Nursing and Midwifery Council to train nurses and midwives to give quality care.

9.1.1.2 Existence of standard nursing curriculum

The N&MC developed and regularly revised the nursing curriculum, which serves as the standard curriculum for professional nurses' training in Ghana. All nursing education institutions' curriculum must include this curriculum's content, hence standardising professional nurses' training in Ghana. The assessment of clinical competency in Ghana is based on the content of this curriculum.

9.1.1.3 Institutional arrangements

All institutions and stakeholders and their roles should be specified to avoid conflict of interest. For example, the NEIs and students providing accommodation and food for the examiners who are deployed by, and on behalf of, the nursing council will result in conflicts of interest which may compromise the examination quality. There is the need for collaboration of health agencies and stakeholders such as Nursing and Midwifery Council (NMC), Health Training Institutions (HTI), the Ghana Health Service (GHS), Heads of Nursing Educational Institutions (NEIs), the Ministry of Health (MOH), the Ghana Registered Nurses and Midwives Association (GRNMA), and the Nursing students' associations in setting policies and evaluating the outcomes of the examination.

9.1.1.4 Resources mobilization

Resources that are needed for the examination must be made available to nursing educational institutions. In planning for clinical skills assessment, these resources include examination centres in health facilities that can accommodate the students during the examination. There must be provision for consumables and equipment for the examination.

9.1.1.5 Motivated human resources

An effective assessment process depends on the calibre of human resources available. The assessment of nursing students depends on human resources including examiners, invigilators, examination coordinators and officers. These persons are expected to have clinical competency assessment expertise and all policies guiding the examination process to conduct a practical examination. The nursing council should ensure that their examiners are well motivated and resourced to perform their duties diligently. Timely remuneration of examiners will ensure they are not influenced by gifts and other resources that may affect the examination outcomes. Secondly, it will motivate them to accept invitations to serve as examiners.

9.1.1.6 Prescribe clinical assessment system in curriculum

The clinical assessment system is expected to be aligned with the mode and process of assessment prescribed in the curriculum. The curriculum must be explicit on the mode and process of clinical competency assessment to guide educators and clinicians to teach nursing students both in the classroom and on the field.

9.1.1.7 Effective scheduling of clinical competency assessment

The Nursing Council should reschedule the clinical competency assessment dates when continuing students are on vacation so that the candidates could have accommodation on campuses to reduce the financial obligations and give them the opportunity to use the institutional simulation laboratories for preparation.

9.1.1.8 Adequate funding

Effective costing and adequate funding of the clinical competency assessment are vital for the smooth running of the examination. Although the Council plans the examination's finances, the

budgetary allocation in certain areas needs to increase to enhance the assessment system's quality. These areas include board and lodging of examiners and provision of consumables for the examination. These areas are generally left for the NEIs who transfer the cost to the candidates, potentially creating an opportunity for bias in the examination system

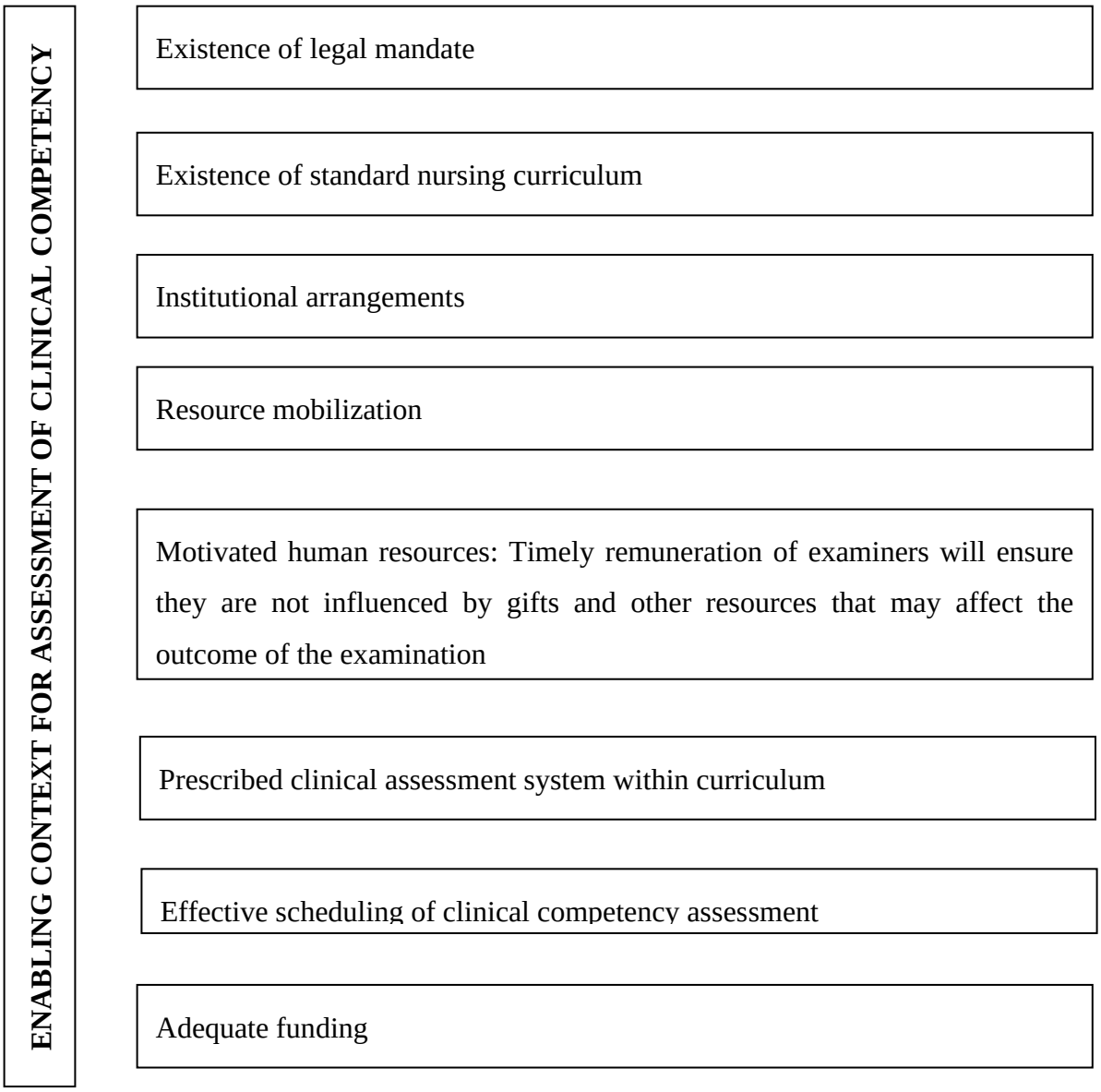

Figure 9.1: Context of clinical competency assessment

9.1.2 Clarity of Instructions for Students

The nursing students are expected to acquire agreed-upon or prescribed competencies during training. The nursing council provides students with clinical practice schedule books with a set of

competencies that they need to master and get signed off under a registered nurse's supervision. The student has to produce the completed schedule book before she/he is allowed to take the licensing examination.

9.1.2.1 The schedule book should explain the clinical competence assessment process

The only document accessible to the students is the clinical schedule book. They do not have access to the curriculum or other policy documents regulating the clinical competency assessment in Ghana. Therefore, it is essential to comprehensively describe the licensing examination, especially the students' schedule book's clinical competency assessment. It will encourage the student to practice peer-assessment and engage in self-learning.

9.1.2.2 Practice schedule book should be stepwise or chronological

The schedule book should explicitly state what students should know or do at every level or year of their training. Students spend their allocated clinical time on specific tasks that can easily be verified and evaluated.

9.1.2.3 Correspond practice schedule book with nursing curriculum

The schedule book should be designed to correspond with the content of the nursing curriculum. The nursing curriculum presented the clinical competencies in a stepwise manner: preliminary, intermediate and advanced competencies. The clinical schedule book will be necessary to correspond to the curriculum to make the make clinical placement focused.

9.1.2.4 The practice schedule book should outline the number of clinical hours per year

The schedule book should state the total clinical practice hours that a student needs to complete for each year and the overall programme. Hence, students spend the requisite hours in clinical practice to gain the needed level of clinical competency.

9.1.2.5 Aggregating the competency skills according to the biological systems

Aggregating the competency skills according to the body's systems may also help with the unique learning and practice of clinical competency skills.

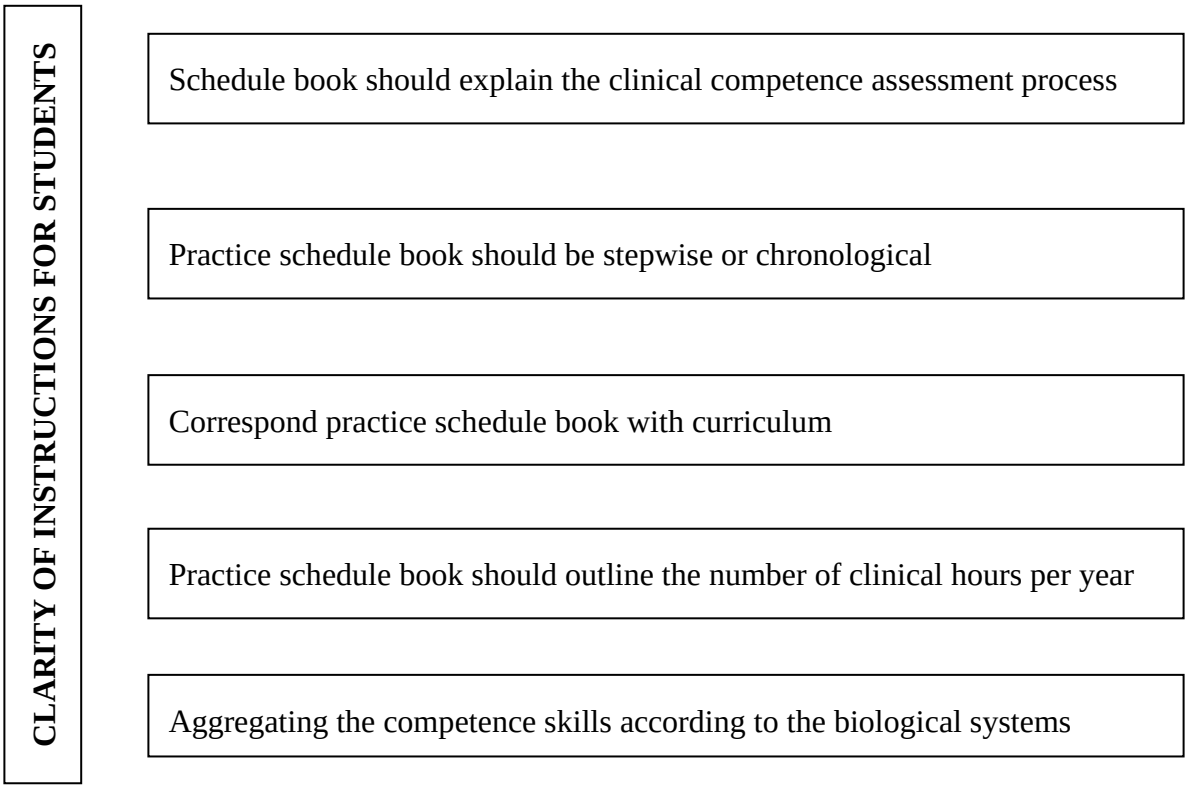

Figure 9.2:Clarity of instructions for students

9.1.3 Aligning the assessment with the nursing education system

The system alignment describes how the teaching and learning of clinical competency skills are aligned with the clinical competency examination. It includes the training of educators, preceptors and clinicians, review of curriculum and teaching materials, standardization of teaching.

9.1.3.1 Synchronous review of curriculum and assessment system

The assessment system should be reviewed anytime there is a curriculum review to keep both in tandem. The nursing curriculum is reviewed regularly to include current trends based on population needs assessment and in conjunction with the review of teaching and assessment materials. These reviews must be incorporated into the clinical competency assessment system.

9.1.3.2 Aligning formative and summative assessment of clinical competence

Formative and summative assessment must be aligned to ensure homogeneity in the practice of clinical competency skill. If formative assessment is aligned to the summative assessment, it will encourage self-learning among nursing students. Also, there will be fewer discrepancies during the licensing examination. The students would have been used to the licensing examination format through their formative and summative (end of year examinations).

9.1.3.3 Standardization of teaching

The teaching of clinical competency skills must be standardized by providing books and teaching materials to all NEIs and clinical practice sites. The collaboration of nurse educators and clinicians in teaching and assessing students will help close the theory-practice gap. Faculty should be involved in clinical practice and clinical conferences to contribute to students' teaching and learning on clinical placement. Additionally, it will reduce the issue of marking down students who may have been taught using a different technique from what the examiner is aware of. Manuals and textbooks must be the same for all schools to enhance homogeneity in the competency.

9.1.3.4 Examiner qualification

The minimum level of qualification for a tutor or an examiner is a first degree. There was no mention of having a qualification in education which is essential for everyone engaging in teaching and assessment. Though an educational qualification is encouraged, it not a prerequisite for employment. In the short term, it is impossible to get all prospective nursing educators to acquire education qualification before recruitment. Still, there should be a short course that prepares them before taking on teaching and assessment roles.

9.1.3.5 Training of educators

Nurse educators must be trained in teaching clinical skills after the appointment to ensure that their skillset is congruent with expected standards. Continuous Professional Development (CPD) of nurse educators in clinical practice and assessment will help build their capacity to be practical

examiners. The logbook for tutors and lecturers requires that they undertake either CPD or CPE, a recommendation for re-registration, promotion or special appointments.

9.1.3.6 Training of preceptors/clinical educators

Continuous professional development programmes should be organized for clinical educators to keep them up to date on new clinical protocols and clinical assessment rubrics to keep pace with the changes effected in the nursing education institution and the nursing council assessment procedures. They should collaborate with the nurse educator in charge of clinical skills and share knowledge and materials on clinical education.

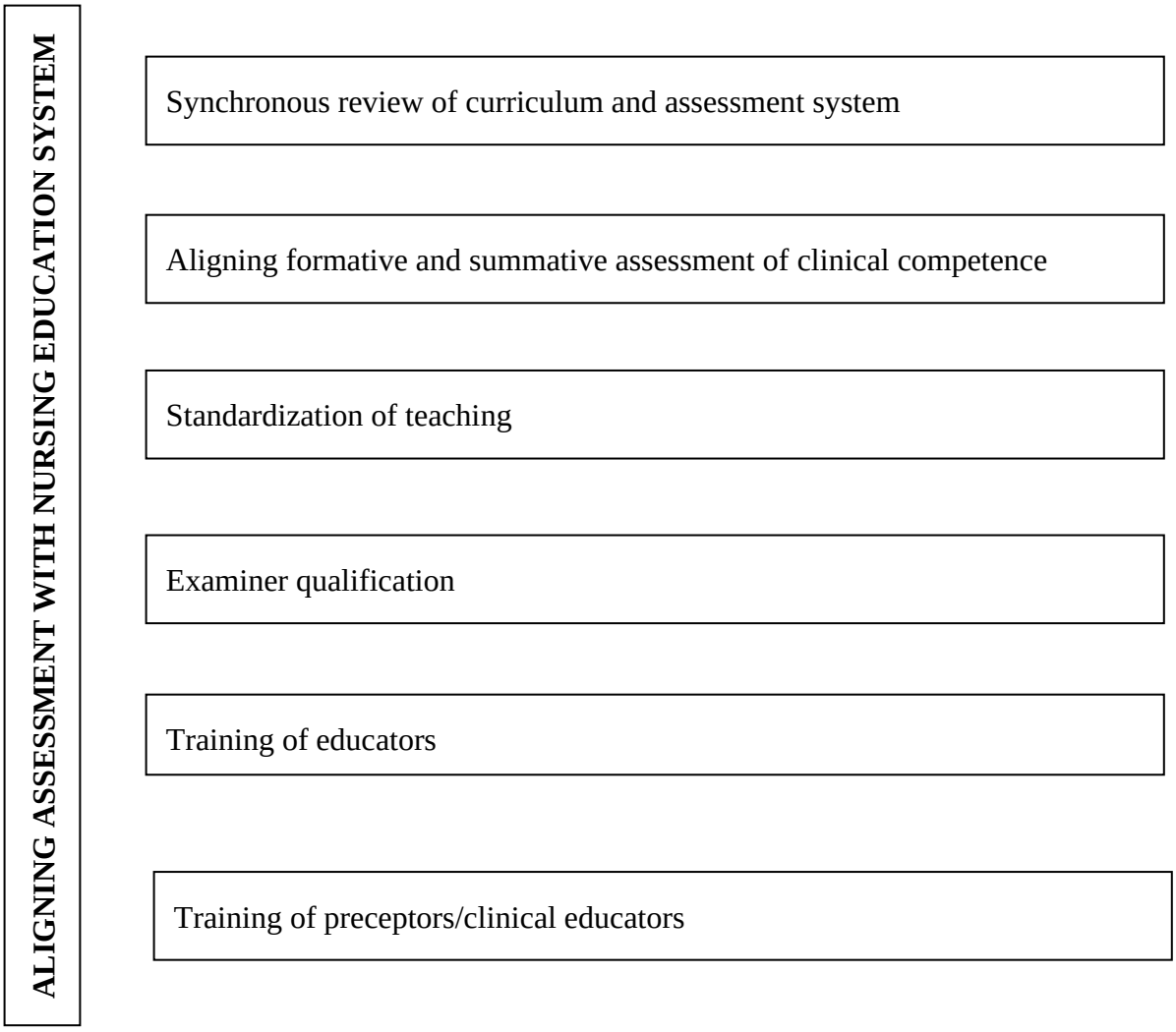

Figure 9.3: **System alignment in clinical competency skills examination**

9.1.4 Design and Implementation of the assessment system

The clinical assessment system design included stakeholder collaboration, determining quality criteria of the assessment rubrics, pre-testing the assessment rubrics, and ensuring interrater reliability among examiners. It is expected that examiners are exposed to and educated on the assessment rubrics, and whenever there are updates in the content. The N&MC may consider introducing a standardised clinical competency assessment, and grading of the care plan preparation. Non-technical skills such as handwashing in the assessment system, should be included and students should be given an opportunity to evaluate the examiners after the examination.

9.1.4.1 Stakeholder collaboration

The Nursing Council should design the assessment system and the examination rubrics in collaboration with the NEIs, the clinical facilities and the employers (Ministry of Health, Ghana Health Service and the Private employers).

9.1.4.2 Consider quality Criteria during the design

The assessment system should be designed and aligned with the curriculum. In designing the assessment system, the stakeholders must consider its quality driven by psychometric properties of the assessment rubrics, validity and reliability of the system, educational impact of the assessment system, the fairness of the assessment system, and the assessment system's feasibility. For example, a standardised examination system with low inter-rater reliability and disassociation of examiners from the institutions they examine will ensure fairness and reliability.

9.1.4.3 Pre-testing the assessment system

The system should be pretested and revised before implementing it to ensure applicability.

9.1.4.4 Inter-rater reliability

Inter-rater reliability tests should be conducted among examiners to ensure they will be consistent in allocating marks before deploying them to the examination centres.

9.1.4.5 Prior exposure of examiners to the rubrics

The clinical examiners' training should involve exposing them to the design of the assessment rubrics and the allocation of marks to confirm the need for the rubrics to be made publicly available to the stakeholders who will need them.

9.1.4.6 Efficient organization of the examination

These include the schedule for the examination, hosting of the examination team, and preparing assessment materials. In allocating students to the examination/clinical facility, the number of patients available for the examination should be considered.

9.1.4.7 Standardizing the clinical competence assessment

As prescribed by the three sources of data included in the development of the framework, instead of assigning varying procedures to students, standardizing the allocation will help reduce bias in the process.

9.1.4.8 Grading care plan preparation

Observation and grading of history taking and physical assessment of students during the individual patient care plan preparation should be done so that examiners will assess the use of the skills of patient assessment competencies acquired by the student. Also, it will prevent falsifying patient problems as observed in the study.

9.1.4.9 Inclusion of non-technical competencies

Non-technical procedures such as communication, handwashing and documentation should also form part of the clinical competency assessment as they are essential in the technical procedures' performance.

9.1.4.10 Student evaluating examiners after the examination

The Council should introduce a confidential online examiner and examination system evaluation platform for candidates who completed the examination to provide feedback on the examiners and the examination system.

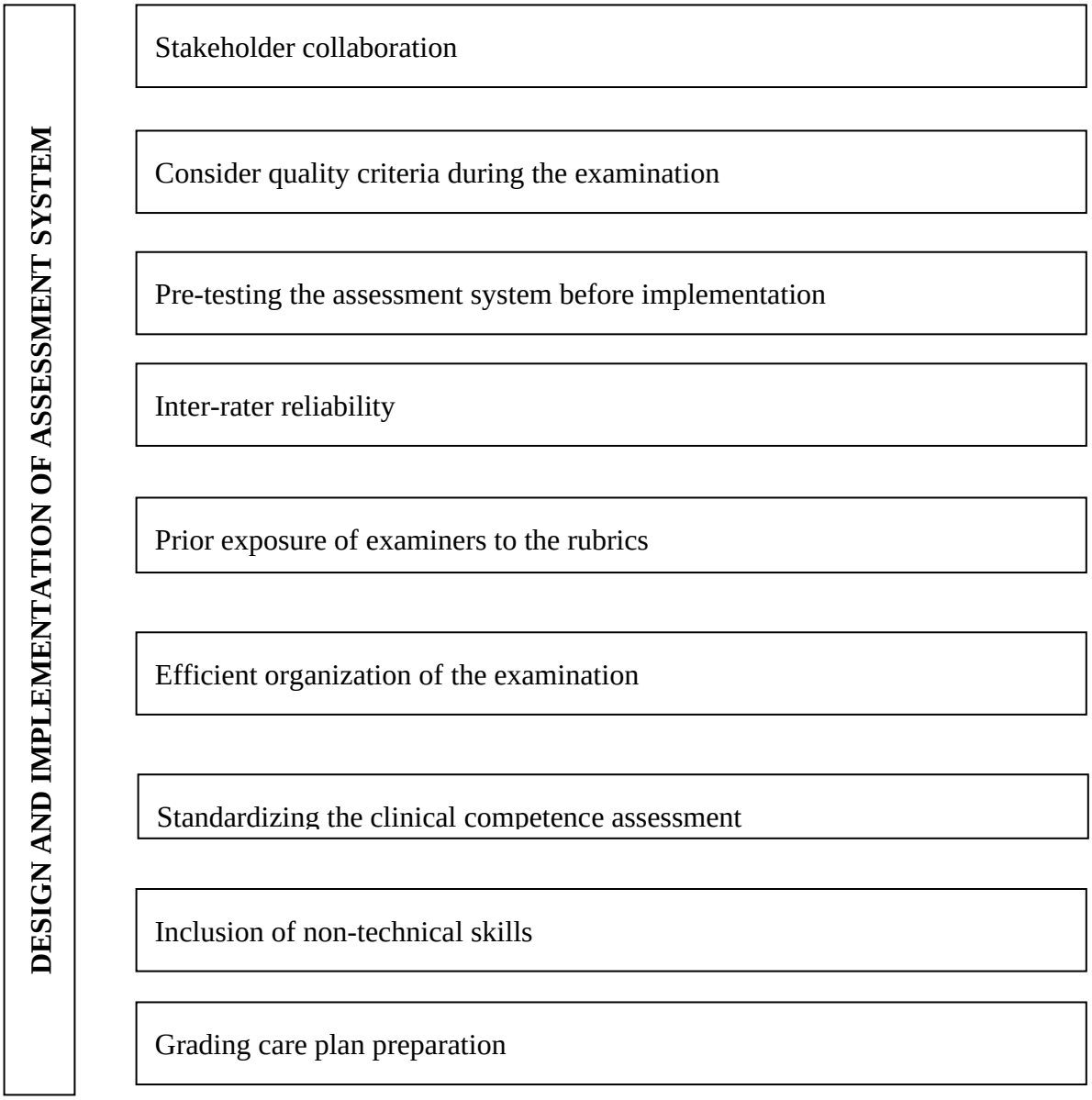

Figure 9.4: Design and Implementation of the assessment system

9.1.5 Quality improvement

In this framework, quality improvement refers to a continuous process that will ensure that the examination system that has been designed is continuously reviewed and improved by providing a comprehensive outcome report on the performance of students to the NEIs, institute ongoing research, ensure accountability of all stakeholders, evaluation and re-accreditation of examination facilities, and regular review of the examination system.

9.1.5.1 The comprehensive institutional outcome report

The clinical competency skills released to nursing students serve as data that can be used to analyse the examination's quality. Monitoring the assessment system can help to support underperforming NEIs and teachers (Ravela, 2005). Assessment is an integral part of learning and not an isolated area to test the proficiency of students. It must, therefore, be integrated with teaching and learning. Results from examinations should be used to estimate the performance of students in clinical competency skills. The report must extend to the clinical settings that serve as examination centres for the clinical competency examination.

9.1.5.2 Institute ongoing research into the clinical competency assessment system

The Nursing Council should institute continuous independent research into the clinical competency assessment system. The examination results can also serve as data to identify gaps in the assessment system to inform policy, which will improve the examination system as a whole and clinical practice in particular.

9.1.5.3 Ensure accountability

Holding specific groups, stakeholders and individuals accountable for their roles in the assessment system is important. Ensuring that everybody connected to the clinical competency assessment is held accountable for their roles, commission, and omissions will ensure that they perform their responsibilities effectively and with integrity.

9.1.5.4 Evaluation and re-accreditation of the examination facilities

Evaluation and re-accreditation of the examination sites will ensure that sites that meet the Nursing Council's expectations can be used for the examination. Access to resources will ensure that the site has enough patients to be assigned to students, and resources are available to enhance the examination's effective administration.

9.1.5.5 Regular review of the examination system

Review the assessment system and administration with the system evaluation outcomes to improve the examination system will ensure that competent nurses are trained to practice. The development of innovative strategies for the assessment system will emanate from the continuous research and evaluation of the examination. Teaching and learning will be improved by the continuous research and evaluation of the clinical competency examination.

Confidential online examiner and examination system evaluation platform for students

An online examiner and students' examination evaluation will improve the clinical competence assessment of nursing students. it will also ensure that examiners are monitored and training needs identified.

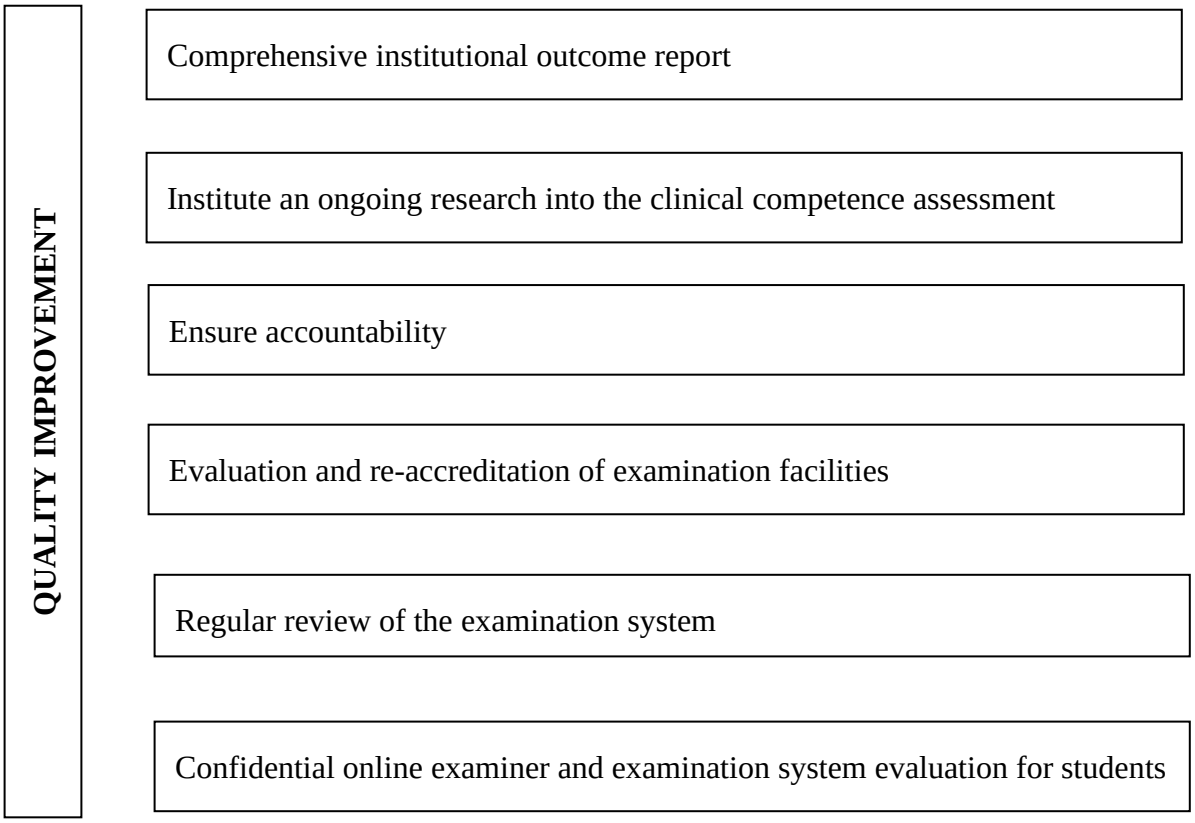

Figure 9.5: Quality improvement of clinical competency examination

9.2 THE FRAMEWORK

The framework for assessing clinical competency of nursing students in Ghana has therefore been presented in figure 9.6.

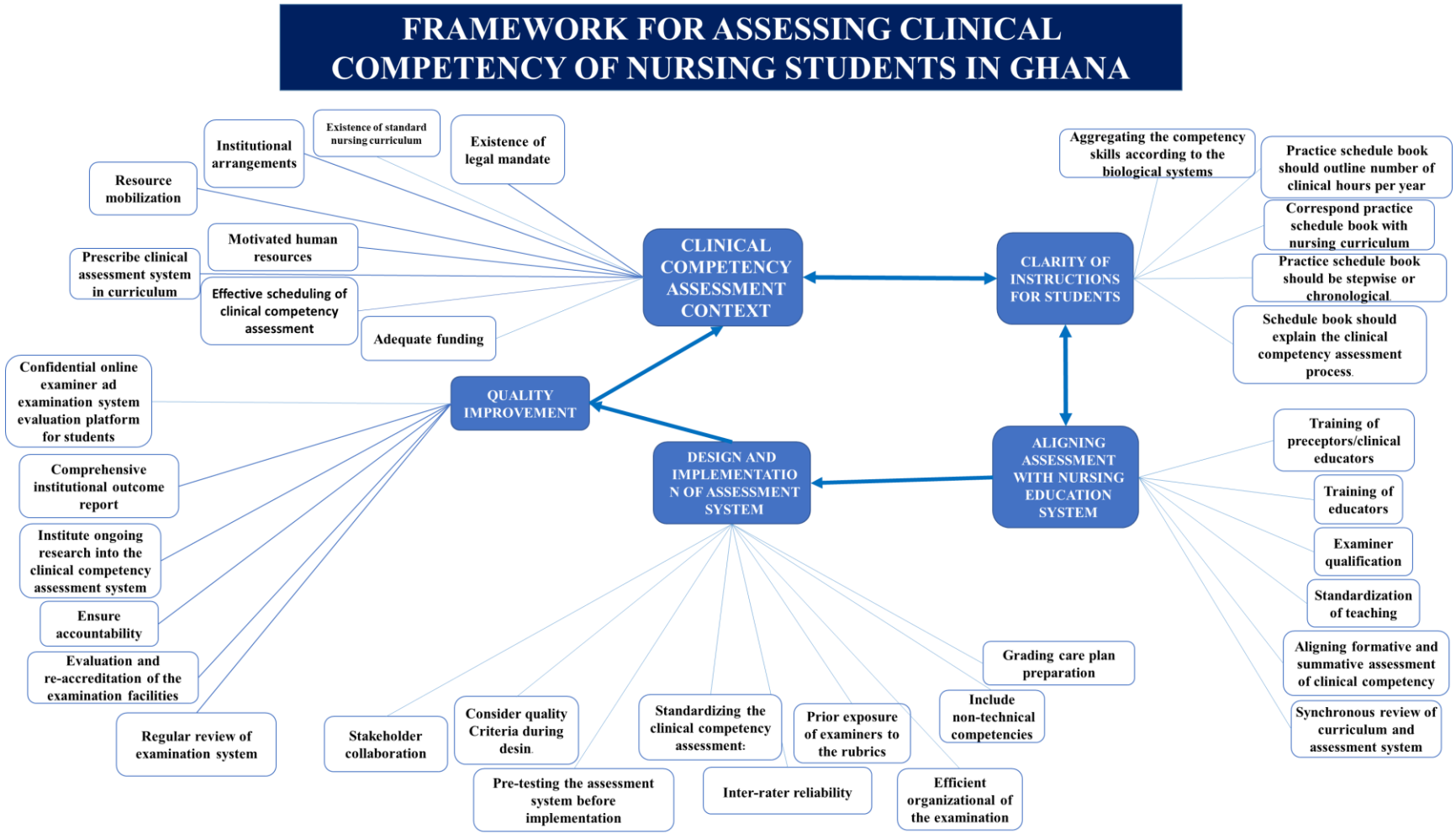

Figure 9.6: Framework for assessing clinical competency skills of nursing students

CHAPTER 10 : DISCUSSION, RECOMMENDATIONS AND CONCLUSION

10.1 INTRODUCTION

In this chapter, the findings for all the phases of the study were discussed. The study included a scoping review, document analysis, key informant interviews, a focus group discussion with nursing students, design and development of the framework and testing the draft framework for clinical utility. Recommendations, limitations of the study and conclusion were also presented.

10.2 SUMMARY

Clinical competence examination is one of the critical areas in the assessment of nursing students. It is a pre-requisite for certification to practice as a nurse in Ghana. This study involved developing a framework for assessing clinical competence in Ghana. With this aim in mind, four objectives were outlined to guide the study. The study explored current practices of assessing nursing students' clinical competency, conducted a situational analysis on the current system of assessment of clinical competency in Ghana, developed a framework for assessing the clinical competency of nursing students in Ghana, and evaluated the framework for clinical utility.

The overall goal of the study was to develop an evidence-based framework to guide the assessment of nursing students' clinical competence in Ghana to standardise and improve the quality of clinical assessment in the country. The framework for Assessing the clinical competence of nursing students in Ghana was designed using extensive scientific methods that are reliable, traceable and valid. All the processes involved were well-documented and applicable to many in other jurisdictions. The framework consists of five constructs that have been linked sequentially, with the clinical competency assessment context, followed by the clarity of instructions for students, aligning clinical competency assessment with the nursing education system, design and implementation of assessment system and quality improvement.

The framework has been evaluated and approved by experts in clinical nursing education and assessment in Ghana as relevant, context-specific and applicable in the Ghanaian context.

10.3 MAIN FINDINGS

International best practice, as indicated in the scoping review, dictates that a fair assessment system must be reasonably objective, measure what it is set to measure; produce the same result if it is conducted under similar conditions; be applicable within the context it is developed for; be acceptable to the stakeholders within the context; be transparent and clear; must result in improvement in teaching, learning and practice; and provide feedback to the stakeholders for quality improvement purpose. Any assessment system devoid of these qualities will be fraught with biases and unfairness, which will lead to licensing of incompetent practitioners or denying competent practitioners license to practice with its associated risk to society (Norcini et al., 2011).

Evidence-based practice demands that nursing practice protocols be updated regularly (at least five-yearly) as the nursing practice and patient needs are continually changing (Committee on Patient Safety and Quality Improvement, 2015). The findings of the study indicated this is not done and while the regulatory body is responsible for setting minimum standards, the system of evaluation used is not sufficiently transparent as evidenced by the failure of the NMC to make assessment rubrics available prior to the final examination, to update available documents and to standardise the examination system.

The results of this study showed that there are limited available teaching, learning and assessment resources. Limited resources made it difficult for educators and clinicians to support students to achieve the current requirements for clinical nursing competency (Fawaz et al., 2018). This has serious implications for the quality of training and therefore of nursing care in Ghana.

Recruitment and training of examiners are essential for the validity and reliability of the assessment system. The study found that selection and training of the examiners is not standardized and is, in many respects, lacking. This included training on the psychometric properties of the assessment tools without which inter-rater reliability was compromised.

Certain practices implemented during the clinical competency assessment planning may introduce some form of bias during the examination process, which may affect the examination outcome. Students in the study were found to be contributing money to buy consumables, host their examiners and giving them gifts during the licensing examination may compromise the examination quality as it provides an avenue for bias (Hughes, Mitchell, & Johnston, 2016; Millett, 2016). If the examiners are biased and favour students who have contributed to their welfare during the examination period, the findings of the assessments will not reflect the true competency levels of students and therefore, as with the shortage of resources mentioned in the previous paragraph, compromise the quality of nursing care in future generations of nurses.

Failure to assess students during their interaction with the patients during the preparation of a care plan coupled with the short time (30 minutes) allocated to students for this purpose, creates an opportunity for fabrication of care plans, which again influences the outcome of the examination and makes them unreliable.

The findings from this study showed that Ghana's clinical assessment system is more or less an established system that needs strengthening and improvement in some areas to become a cutting edge (best practice) clinical competence assessment system in the sub-Saharan region. Ghana's clinical competency assessment system must improve and attain a cutting edge status because of the many countries that look up to and learn from Ghana's systems and experiences in the sub-Saharan Africa sub-region (Government of Sierra Leone, 2019) and for the sake of the quality of care on patients in Ghana.

As conceptually defined, this framework will guide all nursing education stakeholders, especially the regulator, to review the current clinical competency assessment system to make it evidence-based and standardized for quality improvement purposes. The National Health System's "Clinical Competency Framework Guidelines" (National Health System (NHS) Southern Health, 2010) defined terminology, listed various levels of competency, stipulated the roles of supervisors, learning resources, listed scoring system and competencies that students need to acquire and the instructions for the assessors. In contrast, this framework covered a broader scope, looking at policy, regulations, curriculum, stakeholder consultations, assessment.

10.4 RESPONSE FROM THE NURSING COUNCIL

In an attempt to determine the clinical utility and feasibility of having the framework developed in this study accepted in Ghana, the researcher presented the draft framework to the Nursing Council for their comments. While not included in the research methods, their feedback is useful and is presented here as part of what may be a limitation of the study as complete buy in will be required. The researcher also considered it fair to present their responses in order to be transparent.

Representatives of the NMC commented that they will work to improve the quality of the assessment system but did not accept some of the findings of the study.

The NMC's leadership maintained that the assessment rubrics (component tasks) are for the examination purpose only and should not be accessible to nursing students and their educators.

Some participants requested for early feedback of their performance in the clinical competency assessment, but the Nursing Council reiterated that providing feedback at the examination centre may be impossible since examiners are not mandated to release the examination outcome to students.

The Nursing Council stated that training for examiners is conducted every two years but acknowledged that there were instances where some examiners were not trained when assigned to examine students. However, they stated that the chief examiners orientate those examiners who do not receive training at the examination station. The researcher however believes that this form of training may not be sufficient for a novice examiner, and therefore, the training must be structured so that no examiner is appointed without formal training.

While the researcher proposes in the framework that an OSCE type evaluation should be used to ensure objectivity, the NMC was not in support of any standardized examination such as an OSCE but reiterated that students are expected to have been taught all the clinical competencies, and must, therefore be able to perform any clinical skills that are assigned to them.

When the findings regarding the practice of students contributing financially to the support of examiners, the NMC responded that they had not mandated any NEIs to collect money from nursing students to host examiners. However, they stated that the institutions should support (accommodate and cater for) examiners. They reported that during a meeting with the nursing institutions' leadership teams and the Ministry of Health representatives, the latter had agreed that the institutions should charge eighteen (18) United States Dollars ($18) apart from paying registration fees to support the council in conducting the examinations.

When the suggestion made in the framework that the students should be observed while they plan to care for their assigned patients, the NMC said that introducing these assessment aspects may be beneficial; however, it would extend the duration of the examination which has financial implications. This in turn would mean that students would have to pay higher examination fees.

The findings from this study showed that although the study site's assessment system is established, there may be a need for some reforms . When this was stated, the head of the Nursing Council stated that the current assessment system has been a success and has served as a benchmark for other countries within the sub-region. However, they are willing to strengthen areas where gaps exist.

10.5 RECOMMENDATIONS

From this study, recommendations on nursing research, nursing practice and nursing education were made as follows;

10.5.1 Recommendations for nursing research

- Upon introduction of this framework, longitudinal studies will be done by post graduate students to determine whether there has been improvement in the structure, processes and outcomes of the assessment system.

- Context-specific research into current approaches in the assessment of clinical competency of nursing students in sub-Saharan Africa needs to be conducted by either the Nursing and Midwifery Council of Ghana, West African College of Nursing, and Ghana College of Nurses and Midwives'.

- Data collected during every licensing examination and stakeholder evaluation should be collated and analysed to inform the Nursing and Midwifery Council of Ghana and NEIs on areas that require strengthening to ensure a quality assessment system.

10.5.2 Recommendations for nursing practice

- The process of identifying patients problems to diagnose and implement nursing care needs to be improved at the health facilities by nurses. Students do not have the confidence to do this as it is not practiced effectively in the clinical areas.

- Nursing care plans should be utilized constantly in the health facilities by nurses so that nursing students can understand and implement them appropriately. Currently, the use of care plan is very rare in most clinical sites where students are sent for clinical practice, therefore being examined on the care plan during licensing examinations may not be feasible for most nursing students.

- Assessing some non-technical and soft skills such as communication and documentation during clinical competency examinations (formative and summative) by NEIs and health facilities will ensure that these skills are practiced at the clinical sites. Making these skills mandatory in the assessment system will ensure its practice at the clinical sites.

10.5.3 Recommendations for nursing education and training

- The logbook for teaching and clinical practice should include expected hours of practice so that nursing students are aware of their expectations. This should be done by the Nursing and Midwifery Council of Ghana.

- The Nursing and Midwifery Council of Ghana must recruit and train examiners of clinical competency to be robust. there must be a continuous training and re-certification at least biennially.

- The Nursing and Midwifery Council of Ghana must ensure that prospective examiners must be recommended by experienced examiners who have a minimum of five years and their skills set must be examined before they are certified and dispatch to examine nursing students.

- Monitoring and accreditation of health facilities used as examination sites must be revamped. The sites must be monitored to ensures that resources are available to enhance practice of nursing competencies before they are re-accredited. The Nursing and Midwifery Council of Ghana should collaborate with hospital managers and principals of NEIs.

- The framework developed in this study should be implemented the Nursing and Midwifery Council of Ghana, hospitals and NEIs with careful monitoring of its successes and constraints.

10.6 LIMITATIONS OF THE STUDY

10.6.1 Methodological limitation

- Even though the researcher selected eight nursing education institutions and eight health facilities used to examine students, this may not be representative of all the hospitals and nursing education institutions in Ghana.

- The non-availability of some of the requested documents made it challenging to analyse how examiners are recruited, trained and prepared for the clinical competence assessment.

- Due to the Covid-19 pandemic, some planned data collection methods had to be changed. RedCap was used to solicit comments from nursing experts on the draft framework to reduce contact during physical interaction among the experts.

- Only twelve of the expected fifteen expert participants were available for the expert review of the draft framework, thus reducing the planned sample size.

- Due to the absence of prior research in the specific context of the study, the researcher relied largely on research findings in other contexts, and in particular from Eurocentric countries which may not reflect the sub-Saharan reality.

- As the researcher relied largely on self-reported data from students and nurse lecturers, some bias may have been present. This may have included a tendency for social desirability.

10.7 CONCLUSION

A sound assessment system must be valid, reliable, transparent, feasible, provide feedback, continually improve, be fair, objective and have an educational impact. Clinical competency assessment systems must be developed on sound empirical evidence, pilot tested, and involve thorough training and evaluation of the examiners. Continuous evaluation of the assessment system is also essential in ensuring the assessment system's quality and relevance. The lack of clinical competency assessment research in sub-Saharan Africa may lead to benchmarking assessment systems on research outside the context. Sub-Saharan Africa is unique. Therefore, a context-specific clinical competency assessment framework is needed to guide clinical competency assessment in the sub-region.

This study sought to develop a framework to assess the clinical competence of nursing students in Ghana to standardise and improve the quality of clinical assessments. Sequential multi-methods design rooted in the pragmatic paradigm were employed to fulfil this purpose.

Although the intention of the clinical competence examination by the Nursing and Midwifery Council is to ensure that only competent nurses are licensed to practice in the country, there are inherent issues of manipulation of the outcomes, inadequate training of examiners, unstandardized assessment process and resource limitation, which compromises the intent of the process. The Nursing Council admitted to not being aware of some of the challenges and pledged to improve the quality, validity, reliability, and fairness of the examination system, and may do this by applying the framework developed for assessing nursing students' clinical competency in Ghana. This will standardize and improve the quality of the clinical competency assessment of nursing students in Ghana.

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ANNEXURES

Annexure A: Approval of research topic

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 027117172119
Tel: 02711 7172076

Reference: Mrs Sandra Benn
E-mail: sandra.benn@wits.ac.za

08 April 2019
Person No: 2164373
PAG

Mrs O Anim-boamah
Department Of Nursing Education And Administration
School Of Nursing, University Of Ghana
P.o. Box Lg 43, Legon,
+233
Ghana

Dear Mrs Oboshie Anim-boamah

Doctor of Philosophy: Approval of Title

We have pleasure in advising that your proposal entitled *Development of a framework for assessment of clinical competence of nursing students in Ghana* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

Annexure B: Ethical approval from Human Research Ethics Committee (Medical)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research & Post Graduate Affairs)

TO: Ms O Anim-Boamah
School of Therapeutic Sciences
Department of Nursing Education
Medical School
University

E-mail: obanimboamah@yahoo.com

CC: Supervisor: Drs SJ Armstrong and C Christmals
<Sue.Armstrong@wits.ac.za>
and <HREC-Medical.ResearchOffice@wits.ac.za>

FROM: Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2019/08/20

REF: *R14/49*

PROTOCOL NO: **M190433** *(This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)*

PROJECT TITLE: *Development of a framework for assessing clinical competence of nursing students in Ghana*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to the Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Ms O Anim-Boamah

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M190433

NAME: (Principal Investigator)	Ms O Anim-Boamah
DEPARTMENT:	School of Therapeutic Sciences Department of Nursing Education Medical School University
PROJECT TITLE:	Development of a framework for assessing clinical competence of nursing students in Ghana
DATE CONSIDERED:	2019/04/26
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Drs SJ Armstrong and C Christmals
APPROVED BY:	Dr CB Penny, Chairperson HREC (Medical)
DATE OF APPROVAL:	2019/08/20

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the 3rd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **April** and will therefore reports and re-certification will be due early in the month of **April** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE CLEARANCE CERTIFICATE NUMBER IN ALL ENQUIRIES

Annexure C: Ghana Health Service Ethics Review Committee Approval

19/137

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
GPS Address: GA-050-3303
Tel: +233-302-681109
Fax + 233-302-685424
Email: ghserc@gmail.com

MyRef. GHS/RDD/ERC/Admin/App 19/137
Your Ref. No.

29th April, 2019

Oboshie Anim-Boamah
Department of Nursing Education
School of Therapeutic Sciences
Wits University

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC 008/04/19**
Project Title	Development of a Framework for Assessment of Clinical Competence of Nursing Students in Ghana
Approval Date	29th April, 2019
Expiry Date	28th April, 2020
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.
- Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra

Annexure D: Permission from principals, head of department, Deans and Directors of Nursing Services for staff

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

28th May 2019.

Nursing Colleges and Universities

Ghana

Dear Deans, HOD, principal, Directors of Nursing Services,

PERMISSION TO INVITE NURSING STUDENTS IN COLLEGES AND UNIVERSITIES IN GHANA FOR A FOCUS GROUP DISCUSSION

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research during which I will develop a framework for assessing clinical competency of nursing students in Ghana. I will line to seek your permission to invite your final year students awaiting their results for a focus group discussion.

I hope my request will be considered and approved.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

Annexure E: Permission form principals, head of department, Deans of NEIs for students

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

28th May 2019.

Nursing Colleges and Universities

Ghana

Dear Deans, HOD, principal,

PERMISSION TO INVITE NURSING STUDENTS IN COLLEGES AND UNIVERSITIES IN GHANA FOR A FOCUS GROUP DISCUSSION

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research during which I will develop a framework for assessing clinical competency of nursing students in Ghana. I will line to seek your permission to invite your final year students awaiting their results for a focus group discussion.

I hope my request will be considered and approved.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

Annexure F: invitation letters to nurse educators, nurse clinicians and nurse managers

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

28th May 2019.

Key Informants,

Clinician/Lecturer/Tutor, Managers,

Dear Sir/Madam,

PERMISSION INTERVIEW KEY INFORMANTS IN A STUDY

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research during which I will develop a framework for assessing clinical competency of nursing students in Ghana.

You have been identified as a Key informant and so I invite you to participate in the study.

I wish my request will be considered.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

Annexure G: Invitation letter to Nursing Experts

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

11th December 2020.

INVITATION TO PARTICIPATE FRAMEWORK DEVELOPMENT

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana. You have been selected as an expert to assess the drafted framework.

Your views are expected on how the drafted framework can be improved to help in assessing clinical competency skills of nursing students objectively.

It will be a workshop that will be held at the conference room of the 37 Military Hospital, Nursing and Midwifery Training College on17th December 2020 at 9am to 2pm GMT.

Please find attached the information sheet. You can contact me by call or email at obanimboamah@yahoo.com for any clarifications.

Although the request is voluntary, I will be grateful if you can honour this invitation so we can all help to improve the clinical competency assessment system for nursing students in Ghana.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

(+233 0240557374/0208232127)

Annexure H: Consent form for key informants' interviews

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCEOF NURSING STUDENTS IN GHANA

Consent form for Key informants

PARTICIPANT'S STATEMENT

I acknowledge that I have read the purpose and contents of the Participants' Information Sheet read and satisfactorily explained to me in a language I understand (English). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of Participant…….. ID Code ……..

Participants' Signature …… Date:…….

I agree that the interview be recorded YES ☐ NO ☐

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…….

Signature …….

Date…….

Annexure I: Consent form for nursing students

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCEOF NURSING STUDENTS IN GHANA

Consent form for Nursing Students

PARTICIPANT'S STATEMENT

I acknowledge that I have read the purpose and contents of the Participants' Information Sheet read and satisfactorily explained to me in a language I understand (English). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of Participant…….. ID Code ……..

Participants' Signature …… Date:…….

I agree that the interview be recorded YES ☐ NO ☐

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…….

Signature ………………………………………………….

Date………………………………………………………….

Annexure J: Consent form for expert group

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCY OF NURSING STUDENTS IN GHANA

Appendix K: Consent form for expert review of framework

PARTICIPANT'S STATEMENT

I acknowledge that I have read the purpose and contents of the Participants' Information Sheet read and satisfactorily explained to me in a language I understand (English). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of Participant…….. ID Code ……..

Participants' Signature …… Date:…….

I agree that the interview be recorded YES ☐ NO ☐

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…….

Signature …….

Date…….

Annexure K: Information sheet for Key informants

INFORMATION SHEET

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

Information Sheet for Key Informants

Introduction: Hello. My name is Mrs. Oboshie Anim-Boamah. I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana ad will like you to participate in the study.

Background and Purpose of research: Currently, nursing students undertaking clinical assessments perform different clinical competencies depending on the problems and nursing orders they identify. I intend to develop a framework for assessment of clinical competency of nursing students in Ghana with the intention of standardizing and improving the quality of clinical assessment.

Nature of research: this is a multi- method study which includes the use of both qualitative and quantitative approaches. I will use interview guide, focus group discussion guide and questionnaires to collect the data. Interviews will be recorded and therefore, your consent will be sought to participate in the study and also to record the interviews.

Participants involvement: nursing tutors, lecturers, students, clinicians, and managers.

Duration /what is involved: I would like to invite you for an interview on clinical assessment of nursing students in Ghana. The interview will take between 40-60 minutes to complete. Your participation is voluntary. I am interested in your opinions and experiences on the subject- so there is no right or wrong answer. You may request for an elaboration of any question, refuse to answer any questions that you do not feel comfortable answering, or you could withdraw from the interview at any point.

I am also asking for your permission to audiotape the interview because I cannot write as fast as you talk. This will enable me to analyze the information you have provided accurately.

Potential Risks: There will be no risks or negative consequences for individuals who wish to participate in the interview

Benefits: There will be no direct benefits or compensation for anyone who completes the interviews. However, your participation will help developing a framework for assessing clinical competence of nursing students in Ghana.

Costs: No cost will be incurred by participants. Transportation and any other cost incurred by participants who commute to the site will be paid by the Principal investigator.

Compensation: there is be no compensation, however, participants will be provided with refreshment after the interviews and discussions

Confidentiality: The interviews will be conducted at a private location chosen by the participant. No participant personal identifiers will be used in the interview. Recorded information from the tapes will be transcribed and transcripts will be given a code and participant name will not be mentioned.

Voluntary participation/withdrawal: Clarify that participation is voluntary and participants have the right to decline to participate and withdraw from the study at any time without penalty and without having to give any reasons.

Outcome and Feedback: Outcomes of the study will help to standardize clinical competence assessment of nursing students in Ghana.

Feedback to participant: Feedback of findings to participants who participate in the expert review.

Funding information: this research is self- funded.

Sharing of participants Information/Data: The recorded tapes and the completed rating tools will be kept under lock and key at the School of Nursing Education, University of Witwatersrand and can only be accessed by the research team for analysis purpose. The tapes and the completed rating tools will be destroyed two years after the publication of the findings or otherwise as prescribed by the Ghana Health Service Ethics Review Committee and the Human Research Ethics committee of the University of the Witwatersrand.

Provision of Information and Consent for participants: You will be provided with copies of the information sheet and consent forms after it has been signed or thumb printed.

If you have any question about this study, you may contact the following Ethics Committees:

Human Research Ethics Committee (HREC) chair,

The University of the Witwatersrand,

Prof C. Penny

Email:Clement.Penny@wits.ac.za

Tel (011) 717-2301

Ghana Health Service Ethics Committee, Administrator

Ms Hannah Frimpong

+233 507041223

If you have questions about the research, you may also contact me, or my supervisors as follows:

Mrs. Oboshie Anim-Boamah	Dr. Sue J. Armstrong	Dr Christmal Christmals
School of Nursing Education	School of Nursing Education	School of Public Health
University of the Witwatersrand	University of the Witwatersrand	University of Witwatersrand
Tel: +233 240557374	Tel: +27(0)11 4884061	Tel: +27(0)11717-2043
oanim-boamah@ug.edu.gh	Sue.Armstrong@wits.ac.za	christmal.christmals@wits.ac.za

Annexure L: Information sheet for Nursing students

INFORMATION SHEET

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

Information sheet for Nursing Students

Introduction: Hello. My name is Mrs. Oboshie Anim-Boamah. I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana ad will like you to participate in the study.

Background and Purpose of research: Currently, nursing students undertaking clinical assessments perform different clinical competencies depending on the problems and nursing orders they identify. I intend to develop a framework for assessment of clinical competency of nursing students in Ghana with the intention of standardizing and improving the quality of clinical assessment.

Nature of research: this is a multi- method study which includes the use of both qualitative and quantitative approaches. I will use interview guide, focus group discussion guide and questionnaires to collect the data. Interviews will be recorded and therefore, your consent will be sought to participate in the study and also to record the interviews.

Participants involvement: nursing tutors, lecturers, students, clinicians, and managers.

Duration /what is involved: I would like to invite you for a focus group discussion on clinical assessment of nursing students in Ghana. The interview will take between 40-60 minutes to complete. Your participation is voluntary. I am interested in your opinions and experiences on the subject- so there is no right or wrong answer. You may request for an elaboration of any question, refuse to answer any questions that you do not feel comfortable answering, or you could withdraw from the interview at any point.

I am also asking for your permission to audiotape the interview because I cannot write as fast as you talk. This will enable me to analyze the information you have provided accurately.

Potential Risks: There will be no risks or negative consequences for individuals who wish to participate in the interview

Benefits: There will be no direct benefits or compensation for anyone who completes the interviews. However, your participation will help developing a framework for assessing clinical competence of nursing students in Ghana.

Costs: No cost will be incurred by participants. Transportation and any other cost incurred by participants who commute to the site will be paid by the Principal investigator.

Compensation: there is be no compensation, however, participants will be provided with refreshment after the interviews and discussions

Confidentiality: The interviews will be conducted at a private location chosen by the participant. No participant personal identifiers will be used in the interview. Recorded information from the tapes will be transcribed and transcripts will be given a code and participant name will not be mentioned.

Voluntary participation/withdrawal: Clarify that participation is voluntary and participants have the right to decline to participate and withdraw from the study at any time without penalty and without having to give any reasons.

Outcome and Feedback: Outcomes of the study will help to standardize clinical competence assessment of nursing students in Ghana.

Feedback to participant: Feedback of findings to participants who participate in the expert review.

Funding information: this research is self- funded.

Sharing of participants Information/Data: The recorded tapes and the completed rating tools will be kept under lock and key at the School of Nursing Education, University of Witwatersrand and can only be accessed by the research team for analysis purpose. The tapes and the completed rating tools will be destroyed two years after the publication of the findings or otherwise as prescribed by the Ghana Health Service Ethics Review Committee and the Human Research Ethics committee of the University of the Witwatersrand.

Provision of Information and Consent for participants: You will be provided with copies of the information sheet and consent forms after it has been signed or thumb printed.

If you have any question about this study, you may contact the following Ethics Committees:

Human Research Ethics Committee (HREC) chair,

The University of the Witwatersrand,

Prof C. Penny

Email:Clement.Penny@wits.ac.za

Tel (011) 717-2301

Ghana Health Service Ethics Committee, Administrator

Ms Hannah Frimpong

+233 507041223

If you have questions about the research, you may also contact me, or my supervisors as follows:

Mrs. Oboshie Anim-Boamah	Dr. Sue J. Armstrong	Dr Christmal Christmals
School of Nursing Education	School of Nursing Education	School of Public Health
University of the Witwatersrand	University of the Witwatersrand	University of Witwatersrand
Tel: +233 240557374	Tel: +27(0)11 4884061	Tel: +27(0)11717-2043
oanim-boamah@ug.edu.gh	Sue.Armstrong@wits.ac.za	christmal.christmals@wits.ac.za

Annexure M: Information sheet for nursing experts

INFORMATION SHEET

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

Information sheet for expert review of framework

Introduction: Hello. My name is Mrs. Oboshie Anim-Boamah. I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana ad will like you to participate in the study.

Background and Purpose of research: Currently, nursing students undertaking clinical assessments perform different clinical competencies depending on the problems and nursing orders they identify. I intend to develop a framework for assessment of clinical competency of nursing students in Ghana with the intention of standardizing and improving the quality of clinical assessment.

Nature of research: this is a multi- method study which includes the use of both qualitative and quantitative approaches. I will use interview guide, focus group discussion guide and questionnaires to collect the data. Interviews will be recorded and therefore, your consent will be sought to participate in the study and also to record the interviews.

Participants involvement: nursing tutors, lecturers, clinicians, and managers.

Duration /what is involved: I would like to invite you for a Delphi workshop on clinical competency assessment of nursing students in Ghana which will last for a day. Your participation is voluntary. I am interested in your opinions and experiences on the subject- so there is no right or wrong answer. You may request for an elaboration of any question, refuse to answer any questions that you do not feel comfortable answering, or you could withdraw from the workshop at any point.

You will be presented with the draft framework for assessment of clinical competency skills of nursing student to make your submissions.

You will also have to vote in case a consensus is not reached on a particular issue.

I am also asking for your permission to audiotape the interview because I cannot write as fast as you talk. This will enable me to analyze the information you have provided accurately.

Potential Risks: There will be no risks or negative consequences for individuals who wish to participate in the interview. **All Covid-19 protocols will be adhered to**.

Benefits: There will be no direct benefits or compensation for anyone who completes the interviews. However, your participation will help in developing a framework for assessing clinical competence of nursing students in Ghana which will improve the skills of nursing students.

Costs: No cost will be incurred by participants. Transportation and any other cost incurred by participants who commute to the site will be paid by the Principal investigator.

Compensation: there is be no compensation, however, participants will be provided with lunch and refreshments after the interviews and discussions.

Confidentiality: The interviews will be conducted at a private location. No participant personal identifiers will be used in the interview. Recorded information from the tapes will be transcribed and transcripts will be given a code and participant name will not be mentioned.

Voluntary participation/withdrawal: Participation is voluntary and participants have the right to decline to participate and withdraw from the study at any time without penalty and without having to give any reasons.

Outcome and Feedback: Outcomes of the study will help to standardize clinical competency skills assessment of nursing students in Ghana.

Feedback to participant: Feedback of findings to participants who participate in the expert review.

Funding information: this research is self- funded.

Sharing of participants Information/Data: The recorded tapes and the completed rating tools will be kept under lock and key at the School of Nursing Education, University of Witwatersrand and can only be accessed by the research team for analysis purpose. The tapes and the completed rating tools will be destroyed two years after the publication of the findings

or otherwise as prescribed by the Ghana Health Service Ethics Review Committee and the Human Research Ethics committee of the University of the Witwatersrand.

Provision of Information and Consent for participants: You will be provided with copies of the information sheet and consent forms after it has been signed or thumb printed.

If you have any question about this study, you may contact the following Ethics Committees:

Human Research Ethics Committee (HREC) chair,

The University of the Witwatersrand,

Prof C. Penny

Email:Clement.Penny@wits.ac.za

Tel (011) 717-2301

Ghana Health Service Ethics Committee, Administrator

Ms Hannah Frimpong

+233 507041223

If you have questions about the research, you may also contact me, or my supervisors as follows:

Mrs. Oboshie Anim-Boamah

School of Nursing Education

University of the Witwatersrand

Tel: +233 240557374

oanim-boamah@ug.edu.gh

Dr. Sue J. Armstrong

School of Nursing Education

University of the Witwatersrand

Tel: +27(0)11 4884061

Sue.Armstrong@wits.ac.za

Dr Christmal Christmals

School of Public Health

University of Witwatersrand

Tel: +27(0)11717-2043

christmal.christmals@wits.ac.za

Annexure N: PRISMA ScR Checklist for Scoping Reviews

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

PRISMA ScR Checklist for Scoping Reviews

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Click here to enter text.
ABSTRACT			
Structured summary	2	Provide a structured summary that includes(as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Click here to enter text.
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Click here to enter text.
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Click here to enter text.
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration	Click here to enter text.

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Click here to enter text.
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Click here to enter text.
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Click here to enter text.
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Click here to enter text.
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Click here to enter text.
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Click here to enter text.
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	Click here to enter text.
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Click here to enter text.
RESULTS			

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Click here to enter text.
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Click here to enter text.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Click here to enter text.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Click here to enter text.
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.	Click here to enter text.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Click here to enter text.
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of	Click here to enter text.

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		the funders of the scoping review.	

Annexure O: Permission letter for Documents of Nursing and Midwifery Council of Ghana

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

28th May 2019.

The Registrar,

Nursing and Midwifery Council of Ghana

Dear Registrar,

PERMISSION TO USE DOCUMENTS OF NURSING AND MIDWIFERY COUNCIL OF GHANA

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana. I wish to request for the following documents for my study;

1. Curriculum for Registered General Nursing
2. Policy document on clinical competency of Registered general nursing
3. Procedure manual
4. Rubrics for assessing clinical competence of nursing student (basic and advanced)
5. Training manual for assessors of registered general nursing

I wish to indicate that the documents will be for research purpose only.

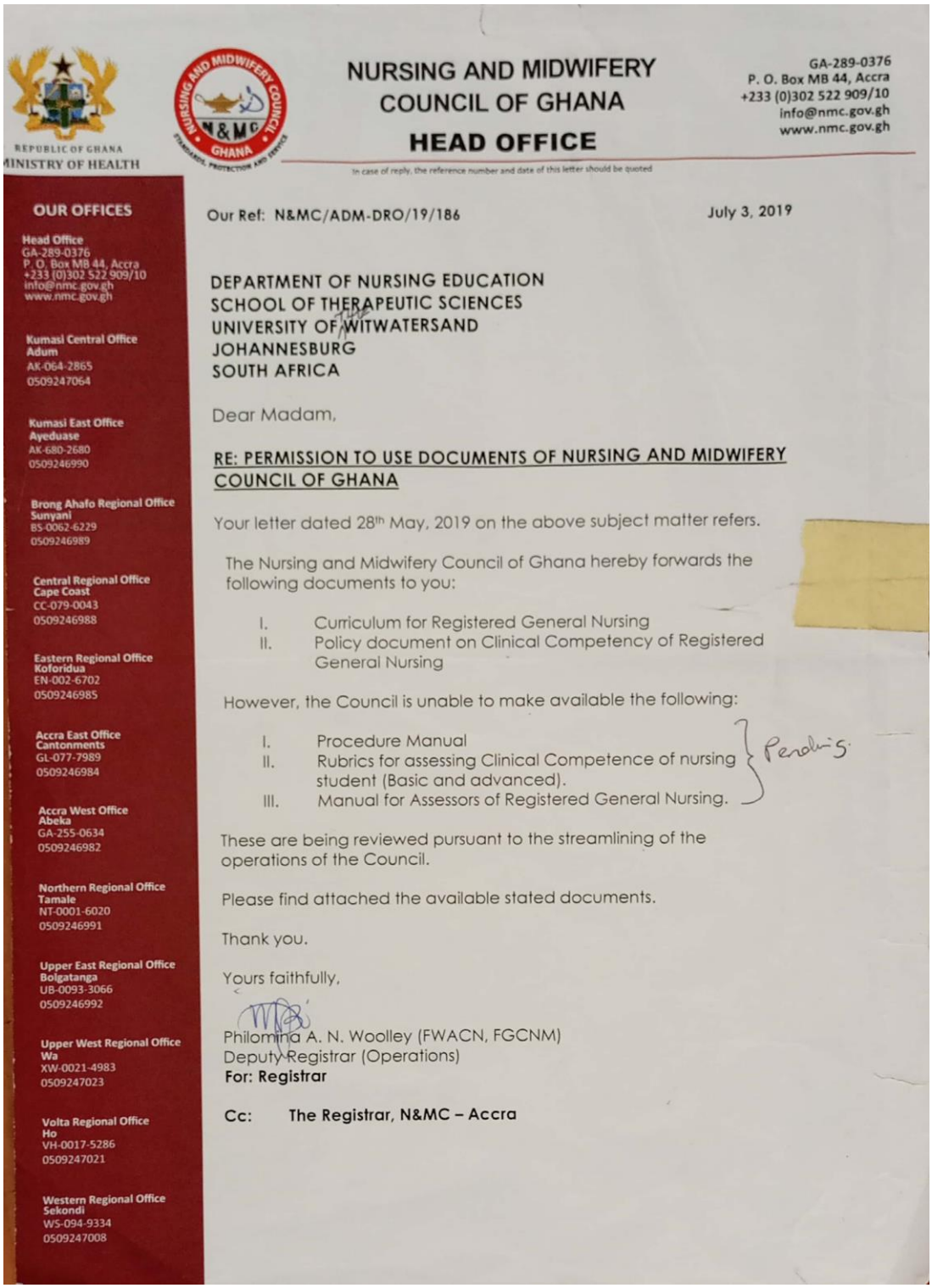
I hope my request will be considered.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

Annexure P: Reply letter from the Nursing and Midwifery Council of Ghana



REPUBLIC OF GHANA
MINISTRY OF HEALTH

NURSING AND MIDWIFERY COUNCIL OF GHANA

HEAD OFFICE

In case of reply, the reference number and date of this letter should be quoted

GA-289-0376
P. O. Box MB 44, Accra
+233 (0)302 522 909/10
info@nmc.gov.gh
www.nmc.gov.gh

OUR OFFICES

Head Office
GA-289-0376
P. O. Box MB 44, Accra
+233 (0)302 522 909/10
info@nmc.gov.gh
www.nmc.gov.gh

Kumasi Central Office
Adum
AK-064-2865
0509247064

Kumasi East Office
Ayeduase
AK-680-2680
0509246990

Brong Ahafo Regional Office
Sunyani
BS-0062-6229
0509246989

Central Regional Office
Cape Coast
CC-079-0043
0509246988

Eastern Regional Office
Koforidua
EN-002-6702
0509246985

Accra East Office
Cantonments
GL-077-7989
0509246984

Accra West Office
Abeka
GA-255-0634
0509246982

Northern Regional Office
Tamale
NT-0001-6020
0509246991

Upper East Regional Office
Bolgatanga
UB-0093-3066
0509246992

Upper West Regional Office
Wa
XW-0021-4983
0509247023

Volta Regional Office
Ho
VH-0017-5286
0509247021

Western Regional Office
Sekondi
WS-094-9334
0509247008

Our Ref: N&MC/ADM-DRO/19/186

July 3, 2019

DEPARTMENT OF NURSING EDUCATION
SCHOOL OF THERAPEUTIC SCIENCES
UNIVERSITY OF WITWATERSAND
JOHANNESBURG
SOUTH AFRICA

Dear Madam,

RE: PERMISSION TO USE DOCUMENTS OF NURSING AND MIDWIFERY COUNCIL OF GHANA

Your letter dated 28th May, 2019 on the above subject matter refers.

The Nursing and Midwifery Council of Ghana hereby forwards the following documents to you:

I. Curriculum for Registered General Nursing
II. Policy document on Clinical Competency of Registered General Nursing

However, the Council is unable to make available the following:

I. Procedure Manual
II. Rubrics for assessing Clinical Competence of nursing student (Basic and advanced).
III. Manual for Assessors of Registered General Nursing.

Pending

These are being reviewed pursuant to the streamlining of the operations of the Council.

Please find attached the available stated documents.

Thank you.

Yours faithfully,

Philomina A. N. Woolley (FWACN, FGCNM)
Deputy Registrar (Operations)
For: Registrar

Cc: The Registrar, N&MC – Accra

Annexure Q: Qualitative document analysis guide

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

1.	Name of document:	
2.	Document type (e.g. law, policy statement, website info, annual report, etc.)	
3.	Source of document:	
4.	Information on clinical assessment	
5.	Remarks	

Annexure R: Semi-structured interview guide for Key informants

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

Semi Structured Interview Guide for Key Informants

1. **Organization / Location …….**

2. **Position/ Designation ……..**

3. **Date of interview …….**

4. **Interviewer's name and contact…….**

5. Result codes

01 = Completed , 02 = Respondent not available, 03 = Respondent refused; 04 = Partially completed 05 = Other**……**

ENABLING CONTEXT

1. **Policies**- Please tell me about the policies you know that govern the conduct of clinical assessment for nursing students in Ghana

Probes: (legislation, academic qualification of students, selection of competencies, clinical skills framework)

2. **Fiscal resources –** please tell me how Nursing and Midwifery Council fund the examination.

Probes: (government, IGF, registration fees, donor support, contribution of students)

3. **Organizational structures**– how are the clinical assessment programme structured?

Probes: (date, venues, assessors, allocation of candidates)

4. **Human resources-** how does the categories of staff working at the Nursing and Midwifery Council improve the work

Probes: (nurses, lawyers, administrative, support staff)

SYSTEM ALIGNMENT

5. **Learning goals and standards-** please can you tell me if what you are taught in the school helps you to meet the standards of a nurse?
6. **Curriculum**– please do you need to augment the content of the curriculum in order to meet the standards of a nurse?
7. Probes: (innovations, timely updates)
8. **Pre- and in-service teacher training:** how are clinical teachers and staff prepared for the clinical examinations?

Probes: (pre-service training, in-service training, training of assessors)

ASSESSMENT QUALITY

9. **Design:** please how can the clinical assessment be designed to make it standardized?

Probes: (design of component tasks, assigning tasks)

10. **Administration:** how is the clinical assessment administered to students?

Probes: (procedures, assessors, critical points)

11. **Analysis:** how are the results of the examination analysed?

Probes: (pass mark, critical points, dissemination of results)

12. **Uses**– how are the results of the clinical assessment used?

Probes: (performance of students, validity of components tasks, quality improvement, training of assessors)

Please is there anything more you will like to add?

Thank you very much

Annexure S: Permission letter to share result with the Registrar of Nursing and Midwifery Council of Ghana

Department of Nursing Education

School of Therapeutic Sciences

University of Witwatersrand

Johannesburg

South Africa.

28th May 2019.

The Registrar,

Nursing and Midwifery Council of Ghana

Dear Registrar,

PERMISSION INTERVIEW REGISTRAR OF NURSING AND MIDWIFERY COUNCIL OF GHANA

I am a doctoral student from the Department of Nursing Education at the University of the Witwatersrand in Johannesburg. I am conducting research on development of a framework for assessing clinical competency of nursing students in Ghana.

I have collected data from key informants and nursing students and may wish to share the preliminary information with you. I believe the data may inform policy decisions in the design of the clinical competency assessment of general nursing student in Ghana.

I hope my request will be considered.

Thank you.

Yours faithfully,

Oboshie Anim-Boamah

Annexure T: Focus group discussion guide

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCEOF NURSING STUDENTS IN GHANA

Focus Group Discussion Guide for Nursing Students

1. **Site ……..**

2. **Year group ……..**

3. **Date of discussion ……**

5. Result codes

01 = Completed , 02 = Respondent not available, 03 = Respondent refused; 04 = Partially completed 05 = Other**……**

ENABLING CONTEXT

13. **Policies**- Please tell me about the policies you know that govern the conduct of clinical assessment for nursing students in Ghana

Probes: (legislation, academic qualification of students, selection of competencies, clinical skills framework)

14. **Fiscal resources –** please tell me how Nursing and Midwifery Council fund the examination.

Probes: (government, IGF, registration fees, donor support, contribution of students)

15. **Organizational structures**– how are the clinical assessment programme structured?

Probes: (date, venues, assessors, allocation of candidates)

16. **Human resources-** how does the categories of staff working at the Nursing and Midwifery Council improve the work

Probes: (nurses, lawyers, administrative, support staff)

SYSTEM ALIGNMENT

17. **Learning goals and standards-** please can you tell me if what you are taught in the school helps you to meet the standards of a nurse?
18. **Curriculum**– please do you need to augment the content of the curriculum in order to meet the standards of a nurse?
19. Probes: (innovations, timely updates)
20. **Pre- and in-service teacher training:** how are clinical teachers and staff prepared for the clinical examinations?

Probes: (pre-service training, in-service training, training of assessors)

ASSESSMENT QUALITY

21. **Design:** please how can the clinical assessment be designed to make it standardized?

Probes: (design of component tasks, assigning tasks)

22. **Administration:** how is the clinical assessment administered to students?

Probes: (procedures, assessors, critical points)

23. **Analysis:** how are the results of the examination analysed?

Probes: (pass mark, critical points, dissemination of results)

24. **Uses**– how are the results of the clinical assessment used?

Probes: (performance of students, validity of components tasks, quality improvement, training of assessors)

Annexure U: Expert review guide- relevance, Context-specificity and Applicability of the framework

TITLE: DEVELOPMENT OF A FRAMEWORK FOR ASSESSMENT OF CLINICAL COMPETENCEOF NURSING STUDENTS IN GHANA

Confidential

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ASSESSMENT OT CLINICAL UTILITY: FRAMEWORK TO ASSESS CLINICAL COMPETENCE OF NURSING STUDENTS IN GHANA

Hello colleagues,

thank you for taking the time to attend this important section.

Please evaluate the framework according to the following sections.

Sincerely,

Oboshie

1)	Designation	◯ Tutor ◯ Clinician ◯ Policymaker
2)	Work experience (in years)	◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9 ◯ 10 ◯ 11 ◯ 12 ◯ 13 ◯ 14 ◯ 15 ◯ 16 ◯ 17 ◯ 18 ◯ 19 ◯ 20+
3)	Number of years as an examiner	◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9 ◯ 10 ◯ 11 ◯ 12 ◯ 13 ◯ 14 ◯ 15 ◯ 16 ◯ 17 ◯ 18 ◯ 19 ◯ 20+
4)	Please input your review comments	_____

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5)	From 1(very poor) to 10(excellent) please rate the relevance of this framework to clinical assessment in Ghana	○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10
6)	From 1(very poor) to 10(excellent) please rate the context specificity of this framework to clinical assessment in Ghana	○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10
7)	From 1(very poor) to 10(excellent) please rate the feasibility of this framework in guiding clinical assessment in Ghana	○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10
8)	Please state the strengths of this framework compared to the current clinical competency assessment in Ghana	_____
9)	Please state the weaknesses of this framework compared to the current clinical competency assessment in Ghana	_____
10)	Any other suggestions to improve the framework more valid and reliable	_____