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BEST CLINICAL NURSING EDUCATION PRACTICES IN SUB-SAHARAN AFRICA: AN INTEGRATIVE LITERATURE REVIEW

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the degree of Master of Science in Nursing

Johannesburg, 2015

DECLARATION

I, Christmal Jonah Kpodo declare that this research report (Human Research Ethics Clearance number **W-CJ-150415-1**) is my own work. It is being submitted for the degree of Master of Science in Nursing in 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 ..... day of ....., 2015

DEDICATION

I dedicate this work to my mum and mentor,

Professor Janet J. Gross

(Moorhead State University, USA, University of Cape Coast, Ghana, West End University College, Ghana, Muni University, Arua-Uganda)

PRESENTATIONS ARISING FROM THIS STUDY

Kpodo, C. J., Thurling, C. H., & Armstrong, S. J. (2015). Best Clinical Nursing Education Practices in SSA. In *First National Three Minutes Thesis Competition* (p. 56). Bloemfontein: UFS Postgraduate School.

Kpodo, C. J., Thurling, C. H., & Armstrong, S. J. (2016). Best Clinical Nursing Education Practices in SSA. In 7th Cross Faculty Graduate Symposium (p.). Johannesburg: University of Witwatersrand.

ABSTRACT

Background: Nursing is practice-based for that reason; nursing education is focused on clinical skills. Clinical nursing education (CNE) programmes in Sub-Saharan Africa (SSA) are either Eurocentric or developed on nursing education tradition and therefore do not produce nurses that effectively meet the peculiar health need of SSA.

Aim: The purpose of this study is to establish research evidence regarding best CNE practices in SSA and to describe the best CNE practices in the SSA.

Methodology: An integrative review was conducted using Ganong's (1987) framework. Forty two (42) articles identified from Science Direct, EBSCO host, PubMed, Wiley Online Library and Google Scholar were included in this study.

Results: The following best clinical nursing education themes were identified and described: *synergy between Nursing Education Institution (NEI) and Clinical Facility*; *effective CNE programme in SSA*; *roles of institutions, clinical instructors and students in clinical teaching and learning*; and *Continuous Professional Development of the clinical instructor*.

Recommendations: It is recommended that NEI's in the SSA implement these best practices in CNE programmes to produce competent nurses that meet the peculiar health needs of the SSA region.

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CHAPTER ONE

ORIENTATION OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Nursing is a practice-based profession which, by definition, means that clinical skills and exposure to the clinical area are essential part of nursing education (Twentyman et al. 2006). Kube (2009) referred to clinical nursing education as the 'lifeblood' of nursing education, stating that the process is unique, in that, the student has to perform nursing activities in live situations compared with non-skill related professions that allow students to recollect, understand, apply, analyse, evaluate or synthesize information in a classroom setting (Hughes & Quinn 2013).

Clinical nursing education involves assisting nursing students to acquire competencies (including knowledge, skills and attitudes) in practice settings or live situations in order to meet the standards set by nursing education institutions and/or professional boards for qualification and/or licensing purposes (Rose & Bes, 2005). Practice settings may include hospitals, clinics, and other filed work sites.

The terminology related to clinical nursing education can be confusing with words such as clinical placement, clinical accompaniment, clinical facilitation, clinical supervision, clinical mentoring, clinical preceptorship, clinical assessment, clinical environment, and clinical simulation which are complex in nature and are often used interchangeably(Hughes & Quinn 2013; Mulder & Uys 2012; Nxumalo 2011; The Nursing Education Stakeholders Group 2012).

As clinical nursing education is so important and takes up a considerable amount of the time required for obtaining a nursing qualification, the effective placement of students is essential to meet their needs. The nature of clinical nursing education is complex due to: the need to

integrate theory and practice, the need to acquire competencies, the variety of required placements as well as the logistical demands of organizing placements. Several checks and balances need to be put in place by various stakeholders to make the clinical nursing education programme effective. These stakeholders include the relevant Nursing Council, the Nursing Education Institution, the clinical facility, the Department of Higher Education and the Department of Health (Department of Health 2011). These checks and balances include programme development, provision of infrastructure, human resources, monitoring and supervision, and programme evaluation (Armstrong et al. 2013). Although, the clinical experience is inherently complex, stressful, episodic, and rigorous, knowledge gained through clinical nursing education is more meaningful and relevant to the learner than that acquired in classroom (Del Prato et al. 2011; Twentyman et al. 2006). Providing opportunities for nursing students within the complex clinical nursing education system presents difficulties for nursing scholars (Kube 2009).

Various authors (De Young, 2006, Ironside & McNelis, 2011 and Tanner, 2006) believe that current clinical education practices are grounded less on research and more on tradition, common sense and utility, and this appears to be particularly so in Sub - Saharan African (SSA). Those programmes that are grounded on research are benchmarked on western research and programmes which might not necessarily be applicable or efficient in the Sub-Saharan African region which has its own peculiar opportunities and challenges. An example of this issue is that there is no evidence of how many hours of clinical placement is needed for effective nursing programmes or for nursing students to reach competence. Neither do we know which clinical nursing education model produces a competent nurse. There is very little evidence about the ideal student/clinical educator ratio within a specific clinical education model or in the context of Sub-Saharan Africa. (De Young 2006; Ironside & McNelis 2011;Tanner 2006).

One of the major historical influences on the traditions of nursing education was the former apprenticeship system of training nurses. The primary purpose of training nurses was to provide sufficient nurses for individual hospitals. As a result, training schools were established at selected hospitals and varied greatly. Searle (1965) states that, "at all times the labour demands took precedence over the learning aspect." From 1922 onwards smaller training schools in South Africa affiliated with larger ones giving rise to what has become known as the "block system' of training in 1937, whereby nurses were withdrawn from the services to attend lectures for a specific period of time. The remaining time continued to be spent providing service in the hospitals, but giving the students an opportunity to apply what they had learned during the block period (Searle 1965). It was only after 1970 that it was truly recognized that whereas the skills gained from experienced nurses who imparted the students through their involvement in care (Eaton 2012; RCN Policy Unit 2007) were important, formal nursing education was essential. It was recognized that classroom teaching would address the associated demands for advanced knowledge to meet the rapidly changing roles of nurses (Buchan & Aiken 2008; Makhuvha et al. 2007; Dolamo & Olubiyi 2013). The legacy of the former system was that student nurses were most often employees in the institutions where they were trained (RCN Policy Unit 2007). Because the schools were originally within the clinical environment, and as students were employees, students did not face any challenges in terms of access to clinical facility for practice. It was only after 1986 that student nurses in South Africa and other Sub-Saharan African countries were employed on the staff establishments of colleges or given bursaries to fund themselves(Searle 1965). This changed the relationship between student and hospital employers which led to tensions between nursing education institutions and hospitals regarding access to clinical training(Searle 1965).

While in some countries there was a natural progression from the formation of Nursing Colleges to moving Nursing Education Institutions (NEI's) into higher education institutions (RCN Policy Unit 2007), movement has been slow in some Sub-Saharan countries. The gap that has arisen between the higher education institutions and the clinical settings need to be bridged using carefully planned and executed clinical nursing education programmes (Mabuda et al. 2008; Nxumalo 2011; RCN Policy Unit 2007). It is impossible for nursing education to be done solely in the higher education institutions, despite the use of complex technological methods such as high fidelity simulations. The clinical aspect of the nursing education programme remains indispensable and irreplaceable (Twentyman et al. 2006). Clinical nursing education is the essence, lifeblood or the heart of nursing education (Chan 2001; Adejumo & Lekalakala-Mokgele 2009; Hughes & Quinn 2013; Midgley 2006).

Huge amounts of funds from the healthcare budgets have been injected into nursing education and training by Sub-Saharan African countries and other funders (The Atlantic Philanthropies 2008; Department of Health 2011). Despite this, Klopper & Uys (2013), in their article on nursing education in Sub-Saharan Africa identify many problems with nursing education in the region such as students being taught by people without advanced degrees (in some countries less than 10% of faculty are doctorally prepared); the failure of the younger generation of nurses to enter nursing education, which will result in a vacuum being left in clinical nursing education as the older faculty retire with their experience and expertise. This vacuum may take decades to replace (Klopper & Uys 2013; World Bank 2009).

The advances in clinical nursing education in Sub-Saharan Africa have not addressed issues such as the global nursing shortage, the growth in nursing science and research, increasing complexity of patient care and changing demographics of both the nursing population and the patients requiring care (Heller et al. 2013; Sun & Larson 2015).

The World Bank report (2009) on tertiary education in Sub-Saharan Africa stated that vacancy rates in Higher Education Institutions were between 25 and 50%. This presupposes that nurse educators are expected to take on at least an extra 25% - 50% on their already full time commitments in order to maintain the standard required for adequate preparation of clinically competent nursing students for practice on graduation. Clinical teaching and assessment is best done by experts and authorities within the field thus the need for educators with advanced degrees (Klopper & Uys 2013). The core of nursing education, and therefore the clinical education aspect of training curricula needs to be developed on solid evidence as health care in Sub-Saharan Africa is nursing based (Sun & Larson 2015).

Polit and Beck (2009) however, reported that only 0.5% of nursing literature published is from Sub-Saharan Africa. 0.5% publications signify poor advancement in clinical education as seen in many Sub-Saharan African countries as advancement in best clinical education practices could only come through clinical research (Sun & Larson 2015).

1.2 JUSTIFICATION OF THE STUDY

Peer reviewed publications give clinical nursing education the needed evidence in practice which leads to advancement in nursing education. The amount of nursing research publications in Sub-Saharan Africa is very small compared to other parts of the world (Sun & Larson 2015). With so few nursing research publications emanating from Sub-Saharan Africa, growth in clinical nursing education within the region will be slow (Adejumo & Lekalakala-Mokgele 2009).

Sub-Saharan Africa is a peculiar continent with a worsening disease profile, frequent outbreaks of communicable diseases such as cholera, Ebola etc., high prevalence and incidence of HIV/AIDS, high poverty rates with associated high rates of malnutrition, and

increasing rates of maternal and child deaths. Sub-Saharan Africa is unique and best practices within the region are therefore different from the rest of the world (Sheer et al. 2008).

This integrative literature review provides the nursing community with an evaluation of the scientific evidence on clinical nursing education practices in Sub-Saharan Africa, and describes best clinical nursing education practices in Sub-Saharan African as identified in literature. This review is very important in that it provides the nurse educators, practitioners and administrators in the Sub-Saharan Africa community with the quality and quantity of pre-registration clinical nursing education research published identifying the best practices in this field.

1.3 PROBLEM STATEMENT

Advances in clinical education in Sub-Saharan Africa has been slow over the past half-century, contributing to inefficiency of nursing programmes and the resultant poor quality of nursing graduates in Sub-Saharan Africa (Eta et al. 2011; World Bank 2009). This is partly due to inadequate clinical nursing education research (Sun & Larson 2015) in SSA which has resulted in educational authorities and managers using European benchmarks, tradition or common sense to develop and implement clinical nursing curricula. If evidence related specifically to clinical nursing education in SSA is sourced, it will be possible to determine best clinical educational practices for SSA specifically and build on existing best practices to improve the quality of clinical nursing education within the region.

1.4 PURPOSE STATEMENT

The purpose of this study was to conduct an integrative literature review on the best clinical nursing education practices in Sub-Saharan Africa, to provide the best evidence in developing and implementing clinical nursing education curricula in Sub-Saharan Africa through the critical analysis of the finding from the review.

1.5 RESEARCH AND REVIEW QUESTIONS

This research is guided by the question: what are the best clinical nursing education practices in Sub-Saharan Africa?

The review question guiding the integrated literature review is:

What are the most effective and feasible pre-registration clinical nursing education practices in Sub-Saharan Africa?

1.6 STUDY OBJECTIVES

The study was guided by two objectives:

i. To review and critically analyse available literature on clinical nursing education practices in Sub-Saharan Africa.
ii. To describe the best clinical nursing education practices in Sub-Saharan Africa.

1.7 TERMINOLOGIES ASSOCIATED WITH CLINICAL NURSING EDUCATION IN SUB-SAHARAN AFRICA.

For the purpose of consistency, definitions used in this study are provided below. When reviewing literature, it is important to recognize that a single word is understood, interpreted and used by different people in different ways (Nxumalo 2011, Rose & Best 2005). These differences in conceptualisation of words creates controversy among nursing scholars (Rose & Best 2005).

1.7.1 Nursing Education

Nursing education is the means by which students are recruited, orientated and guided to acquire the science and art of nursing successfully in an accredited nursing education institution (Nxumalo 2011; Waterson et al. 2006).

1.7.2 Clinical nursing education

Clinical nursing education is the aspect of nursing education that involves the real life, hands-on or practice based teaching and learning activities that takes place within the clinical learning environment (Chabeli & Muller 2004; Eta et al. 2011; Nxumalo 2011). In this study, only pre-registration clinical nursing education practices were considered.

1.7.3 Nursing Education Institution (NEI)

A Nursing education institution is an accredited higher education institution with the mandate to train nurses for a specific registration qualification and licensing by the appropriate nursing council (Jeggels et al. 2013).

For the purpose of this study it may also mean an institution accredited by a professional nursing council to offer nursing courses, but not necessarily at higher education level.

1.7.4 Nurse Educator

For the purpose of this study, a nurse educator is a nurse registered with a recognised nursing council with post registration nursing education qualification, employed by the nursing education institution and is clinically competent in their field of teaching (Chabeli & Muller 2004; Kgafela 2013; Nxumalo 2011).

1.7.5 Clinical placement

Clinical placement is the process in which nursing students are assigned to primary, secondary or tertiary level health care facility for a specified period of time for the purposes of clinical learning and role taking. Clinical placement is governed by a formal arrangement between a nursing education institution and a healthcare or allied healthcare facility (Levett-jones et al. 2015; The Nursing Education Stakeholders Group 2012). Clinical placement offers the student an opportunity to integrate theory into practice, socialize into the nursing profession and to build the knowledge, skills and attitudes essential for professional practice.

1.7.6 Clinical Accompaniment

Clincial accompaniment is intentionally conceived, goal-directed support towards the individual needs of the students through the provision of learning experiences or opportunities that enables the student to progress from novice to a competent practitioner (Kgafela, 2013; Uys et al., 2005,Van Rooyen et al., 2005).

1.7.7 Clinical Facilitator/ Facilitation

A clinical facilitator is a registered nurse with an additional post registration nursing education qualification employed by the clinical facility, with the primary responsibility of guiding students to use effective critical thinking and problem-solving skills in integrating theory to practice in the clinical learning environment (Joubert & De Villiers 2015; Uys &Meyer 2005). Clinical facilitators support both students and qualified nurses in the clinical environment. They teach and guide students to use effective critical thinking and problem-solving skills in integrating theory to practice in the clinical learning environment while ensuring continuous professional development for the qualified staff (Joubert & De Villiers 2015; Uys & Meyer 2005)

1.7.8 Clinical Learning Environment

The term describes a service setting or hospital (Abubu 2010), a unit of hospital (Van Rhyn & Gontsana 2004), or a primary health care facility and/or a community health centre (Magobe et al. 2010) or a highly specialised clinic (Jeggels et al. 2013). The terms 'clinical learning environment', 'hospital environment', 'clinical setting', 'service setting' are used interchangeably (Abubu 2010;Cassimjee et al. 2006; Jeggels et al. 2013). The clinical learning environment, therefore, refers to the *place* (primary, secondary and tertiary health care facility) accredited by the relevant nursing council and the *complex interactions* (patient

care, teaching and learning, assessment and evaluation) that occur and influence students' learning.

1.7.9 Preceptor/Preceptorship

A preceptor is a *specialist nurse* (Cloete & Jeggels 2014) or a *nurse expert* (Dube & Jooste 2006) or an *experienced nurse* (Monareng et al. 2009; The Nursing Education Stakeholders Group 2012) either employed by the clinical facility (Dube & Jooste 2006; Jeggels et al. 2013; Monareng et al. 2009) or the NEI (Cloete & Jeggels 2014; The Nursing Education Stakeholders Group 2012) with the responsibility of assisting, teaching and guiding nursing students to achieve their clinical placement objectives. A preceptor serves as a role model, mentor, supervisor, facilitator, counsellor and resource person to the student nurse (Cloete & Jeggels 2014; Dube & K. Jooste 2006; Monareng et al. 2009; Jeggels et al. 2013)

1.7.10 Clinical Supervisor/Supervision

A clinical supervisor is a staff member of the clinical facility or NEI who provides guidance to students in order to maximize their learning (Kachiwala 2006; The Nursing Education Stakeholders Group 2012). Divergent within this definition is the individual functioning as the clinical supervisor. Kachiwala (2006) believes the individual can be any registered nurse (educator or clinical staff) whereas The Nursing Education Stakeholders Group (2012) specify that they are members of the clinical nursing staff. This review defines the clinical supervisor as any registered nurse, either clinical facility or NEI employee who plays the supervisory role. Clinical supervision is an empowering process in which the student is given the opportunity to experience professional growth under a registered nurse without penalty (Rose & Best 2005). The student practices under the guidance of the supervisor whereas the supervisor is held liable for any harm caused by the student. This puts the supervisor under obligation to ensure quality and safe practice by the student while she or he is under her supervision (Rose & Best 2005).

1.7.11 Mentorship

Mentorship is defined as a trusting, interdependent and personal developmental relationship in which an expert (mentor) guides, counsel, model, and teaches the neophyte (mentee) in his or her quest to become an expert (Joubert & De Villiers 2015; Rikhotso et al. 2014).

1.7.12 Clinical Assessment/Evaluation

Clinical assessment is the process of gathering evidence and making judgments on the students' formative or summative performance against a predetermined standard, criteria and indicators (Armstrong et al. 2013; Le Roux & Khanyile 2011).Clinical assessment is defined in this review as a process of gathering information to measure the level of a nursing student's clinical knowledge, skills and attitudes in order for the assessor, nursing education institution or the licensing and accreditation body to declare the student ready for promotion or fit for practice (Oermann et al. 2009).

1.7.13 Clinical instructor/ instruction

Clinical instructor is a registered nurse, employed by either the nursing education institution or the clinical facility to assist students to integrate theory with practice in the clinical learning environment (Cassimjee et al. 2006; De Villiers et al. 2004; Magobe et al. 2010). Whereas clinical instruction is the processes in which the clinical instructor facilitates the integration of theory with practice both in the nursing education institution and the clinical learning environment (Cassimjee et al. 2006; De Villiers et al. 2004). The term 'clinical instructor' is used as an umbrella word for all individuals involved in the process of clinical teaching and assessment.

1.7.14 Simulation

Simulation in this study is any teaching activity created to expose the student to knowledge, attitudes and behaviours, necessary for nursing practice, prior to clinical placement. It ranges from student role models to high-fidelity simulators (Tyer-Viola et al. 2012; Uys et al. 2014)

1.7.15 Student

A student is defined as any male or female who has successfully enrolled on a preregistration nursing programme for a specified period of time, awaiting registration with a recognised nursing council upon successful completion of the full programme or an exit level (Abubu 2010; Cassimjee et al. 2006; De Villiers et al. 2004; Du Plessis 2004; Jeggels et al. 2013; Kachiwala 2006; Le Roux & Khanyile 2011; Lekalakala-Mokgele & Caka 2015; Magobe et al. 2010; Monareng et al. 2009; Nxumalo 2011; Uys et al. 2005; Van Rhyn & Gontsana 2004;Van Rooyen et al. 2005; Waterson et al. 2006).

In this study, the term *'student'* will refer to *'nursing student', 'student nurse', ' learner', 'pupil enrolled nurse'* and *'preceptee'.*

1.7.16 Clinical Sister/Nurse-in-Charge/Unit Manager

A ward sister, nurse in-charge or unit manager is a registered nurse, employed by the clinical facility to take leadership and management responsibility over a specific clinical ward or unit (Cassimjee et al. 2006) of a primary, secondary or tertiary health care facility.

1.7.17 Professional nurse

This term refers to a person who has successfully completed an accredited nursing programme and has been licensed by the relevant nursing council to practice nursing in a specific geographical location, employed by the health facility with a secondary responsibility of student support (Dube & Jooste 2006; Rikhotso et al. 2014).

1.7.18 Clinical skills

Clinical skills are the essential nursing abilities necessary for quality, safe and cost effective nursing care acquired through clinical nursing education (De Villiers et al. 2004).

1.7.19 Clinical learning experience

Learning experiences refer to the student-patient and student-instructor interactions that take place in response to patients' demands and students placement objectives, resulting in change of student's behaviour (De Villiers et al. 2004; Joubert & De Villiers 2015; Monareng et al. 2009).

1.7.20 Patient

A patient in this study is an individual, family or a community with a healthcare need whether in a health facility or not (The Nursing Education Stakeholders Group 2012).

1.7.21 Clinical Placement Coordinator (CPC)

A clinical placement coordinator is a registered nurse who manages the clinical nursing education programme in a specific NEI based on a negotiated Memorandum of Understanding (MOU)(The Nursing Education Stakeholders Group 2012).

1.7.22 Clinical Teaching Associate (CTA)

The Clinical Teaching Associate is a specialist nurse who is appointed in an honorary capacity by an NEI, based on the MOU between the NEI and the service facility, to enrich the theoretical teaching and assessment of their students and enhance the capacity of the academic staff (The Nursing Education Stakeholders Group 2012).

1.7.23 Clinical training

Clinical training in the context of this study is an organized, clinical activity aimed at imparting nursing knowledge, skills and attitudes to students in order to improve the student's

performance or to help him or her attain a required level of clinical knowledge, skills and behaviours essential for quality nursing practice.

1.7.24 Best practices

Merriam Webster's dictionary (2014) defines best practice as "a procedure that has been shown by research and experience to produce optimal results and is established or proposed as a standard suitable for widespread adoption".

"Best practice" refers to nursing practices that are based on the "best evidence" available from nursing research. The goal of best practices is to apply the most recent, relevant, and helpful nursing interventions, based on research in real-life practice (University of Iowa 2014). In this study, best practices are chosen for their feasibility and effectiveness within Sub-Saharan Africa as recommended by the studies included in the review.

1.7.25 Sub-Saharan Africa

Sub-Saharan Africa consists of all African countries with the exception of Arab Africa (portions of Northern Africa coloured white in the Africa Map in Figure 1.1). Sub-Saharan Africa is shown in the brick red area in Figure 1.1 below (Gaber 2011).

1.7.26 Clinical nursing education practices

Clinical nursing education practices refer to real life, hands-on or practice-based teaching and learning activities that take place within the clinical learning environment.

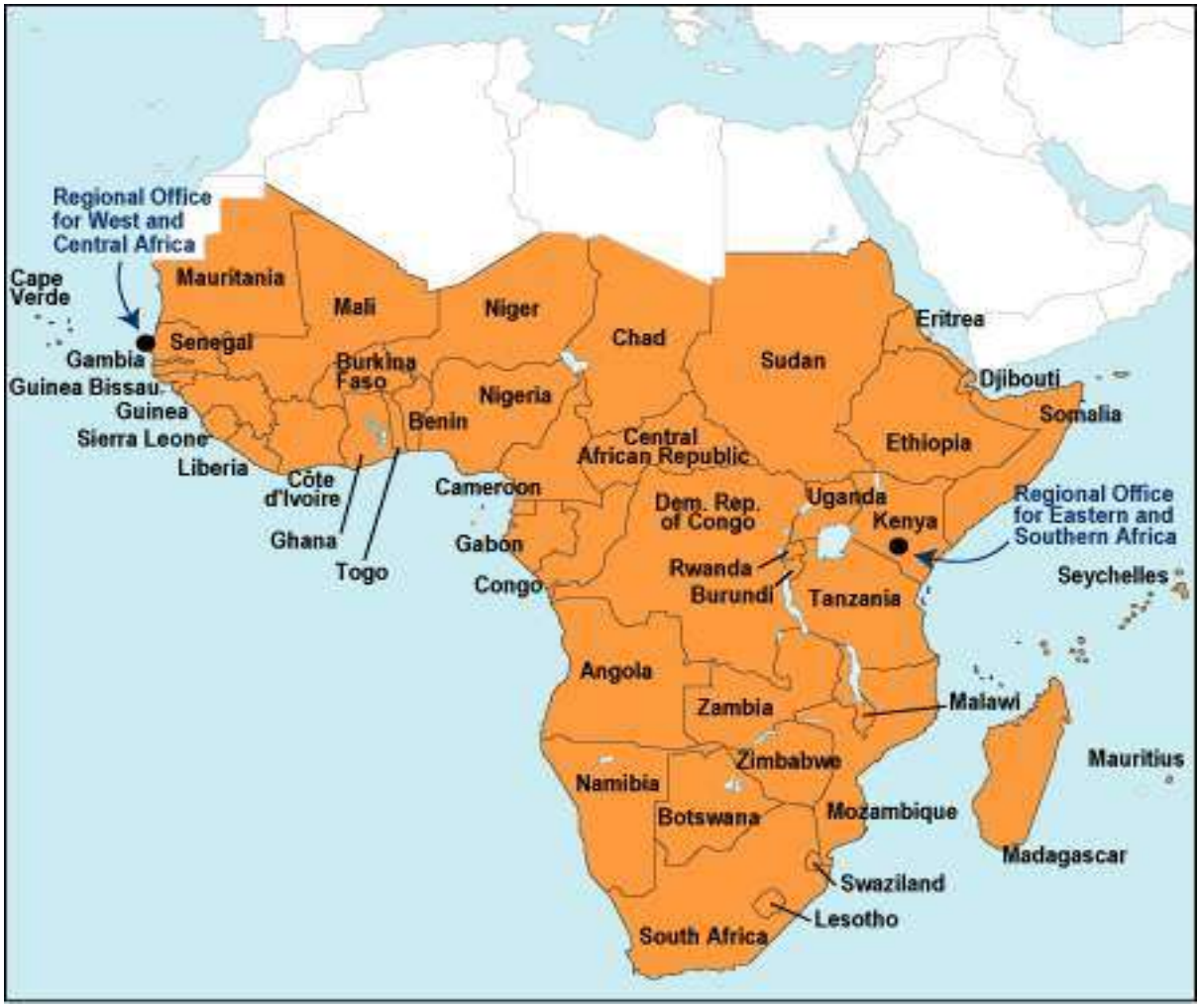


FIGURE 1.1: SUB-SAHARAN AFRICA MAP

1.8 CONCLUSION

Clinical nursing education is vital and indispensable in nursing education. It is very complex consisting of many aspects and situations. Due to its complexity, it is essential for nursing students to be exposed to a variety of real life situations within their training in order to better prepare them for quality practice. Effective and efficient clinical education programmes are necessary as nursing education is moved from the apprenticeship system into higher education where hospitals are less involved in the administration of nursing education institutions.

Sub-Saharan Africa has specific challenges in rolling out effective clinical education programmes due to the fact that research on how best the programme can be developed and

implemented in Sub-Saharan Africa is limited, leading to the adoption of programmes based on tradition, common sense and utility. Those programmes that are developed on research in Sub-Saharan Africa are Eurocentric and do not necessarily address the uniqueness of training nurses in Sub-Saharan Africa. The best clinical nursing education practices in Sub-Saharan Africa are, however, not known. This research seeks to review and analyse available literature on best clinical education practices in Sub-Saharan Africa and describe those practices for implementation in SSA using Ganong's (1987) framework of integrative literature review.

CHAPTER TWO

RESEARCH METHOD

2.1 INTRODUCTION

This chapter explains the integrative research methodology as used in this study. The chapter defines and differentiates an integrative literature review from other review methods and explains the ten stages of Ganong's (1987) framework of integrative literature review.

2.2 INTEGRATIVE REVIEW AND OTHER REVIEW METHODS

Reviews have become very important in the academic and practical nursing community (Twentyman et al. 2006). As nursing specializations increase and the quantity of nursing research expand, the research community is under an obligation to provide evidence for practice that provides an accurate and up-to-date insight of information on areas of practice and research. Reviews help the individual professional to keep up with this obligation, by bringing together and determining the quality and usability of all research carried out in the area of practice (Cartwright 2012; Russell 2005; Sparbel & Anderson 2000; Torraco 2005; Whittemore & Knafl 2005).

Generally, there are 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 type of 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 the results of studies regarding a typical clinical problem to promote evidence based practice in the clinical specialties. The review requires a specific clinical question, well defined methods and a thorough literature search. Systematic reviews

normally use statistical approaches used in meta-analysis when studies included in the review meet the criteria for meta-analyses. Alternatively, a 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 results of multiple studies 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 trustworthiness of the research findings (Whittemore & Knafl 2005).

An integrative review on the other hand is the widest form of literature review. It permits the inclusion of both quantitative and qualitative studies at the same time for a comprehensive understanding of the topic under study. The method is so broad that it includes both theoretical and empirical literature (Sparbel & Anderson 2000; Russell 2005; Torraco 2005; Whittemore & Knafl 2005).

2.3 THE INTEGRATIVE LITERATURE REVIEW METHOD

An integrative review is carried out to: appraise the quality of a scientific research, discover gaps in what is already known, propose the need for future research, make a connection between related areas of work, identify central themes in an area, formulate research questions, identify a theoretical and conceptual frameworks used in the research area, and to explore which research methodology has been successfully used in the research area under study (Torraco 2005; Whittemore & Knafl 2005; Russell 2005).

An integrative literature review is, therefore, a non-experimental design in which the researcher objectively appraises, summarises and makes conclusions about a subject under study. It consists of a systematic search, categorization and analysis (quantitative and / or qualitative synthesis) of past qualitative and quantitative research studies on the subject or phenomenon of interest (LoBiondo-Wood & Haber 2010; Torraco 2005; Sparbel & Anderson 2000). Systematic processes used in the integrative literature review are followed religiously. The integrative literature review methodology was best suited for this study not only because of the advantages stated above and the diversity of nursing research methodology but also on its ability to answer the research questions.

2.4 STAGES OF THE INTEGRATIVE LITERATURE REVIEW

An integrative literature review is important to nursing because of the fact that it uses a variety of studies, published and grey. Nursing is a developing profession in sub-Saharan Africa that is limited in published research therefore; integrative reviews assist the nursing researcher by including grey literature so as to gather all available evidence. Nursing research publications with integrative literature review methodology have increased in the past decade due to its effectiveness of the method in providing evidence for practice in a selected topic area.

There are five conventional stages in an integrative literature review methodology. These stages include: (i) problem formulation or formulation of the research question; (ii) data collection or literature search; (iii) data evaluation; (iv) data analysis and (v) interpretation of analysed data and presentation of report (Randolph 2009; Russell 2005; Torraco 2005; Whittemore & Knafl 2005). Ganong (1987) developed a ten stage approach which is more detailed and is used to guide this study. The stages are listed below and then described in detail in the following section. These stages include:

i. Formulation of the purpose and related research questions.

ii. Delineation of inclusion and exclusion criteria.

iii. Conducting a literature review (*search*).

iv. Development of a data collection tool.

v. Identification of rules of inference for data analysis and interpretation.

vi. Revision of the data collection tool as required.

vii. Reviewing the studies using the data collection tool for information gathering.

viii. Systematic Analysis of the data

ix. Discussion and interpretation of the data.

x. Report the findings.

2.4.1 Formulation of the purpose and related research questions

This is the first stage in an integrative review. It forms the foundation of the review process. A well-defined purpose and research question paves the way for variables to be identified and defined (Whittemore & Knafl 2005) and sets the stage for the subsequent stages to flow smoothly. A clearly defined purpose of the review enables the researcher to limit and operationalize variables included in the review. This provides the reviewer with a distinct focal point and sets the boundaries for the review (Whittemore & Knafl 2005). Sources of research problems which result in research questions and purpose are: casual observation, deductions from theory, related literature review, current social and political issues, practical situations, personal interests and experience, replication of previous studies and contradictory research results (Burns & Grove 2009). A preliminaryliterature review at this stage helps the reviewer to further conceptualize the topic and refine the research question. It helps the researcher to: (i) gather information about a particular field of study (vocabulary, theories, key concepts, best study methodology and history), (ii) identify authorities in the field, (iii) delimit the research problem, (iv) seek new lines of inquiry, (v) avoid fruitless approaches,

(vi) gain methodological insights into the research topic, (vii) identify recommendations for further research, (viii) seek support for grounded theory and (ix) provide a framework for relating new findings to previous findings in the discussion section of a dissertation (Brink et al. 2005; Grove et al. 2013; Polit & Beck 2013; Randolph 2009). Establishing the state of previous research enables the reviewer to establish how the review will advance previous research in the subject area (Randolph 2009). It is a way of fitting the review into the subject area so as to fill in the research gap (Polit & Beck 2013; Randolph 2009).

2.4.1.1 Formulation of the review question

The review question in this study was derived through the researchers' personal interest in clinical nursing education and literature review. The researcher then, through consultation with his supervisors and experts, delineated the review to Sub-Saharan Africa. Attention was paid to the conceptual definition of variables. Operational definitions create uniqueness in the review process and threats to validity may arise in this stage if the operational definitions are too narrow or too broad. A narrow definition may impair the quality of findings as they provide little information on whether the findings apply across various settings whereas a very broad operational definitions makes the reviewer overlook important study details and therefore interprets results incorrectly (Russell 2005; Whittemore & Knafl 2005).

The review question in this study is:

What are the most effective and feasible pre-registration clinical nursing education practices in Sub-Saharan Africa?

2.4.2 Delineation of inclusion and exclusion criteria

Having defined the research purpose and question clearly, the reviewer then determine which articles to be included or excluded from the study. The researcher then used the title, purpose,

research question, sub-headings, outcome measures and characteristics of the study to set the inclusion criteria.

The inclusion criteria was defined clearly so that any article that comes up can either be included or excluded based on the identified criteria without difficulty or controversy between reviewers (Randolph 2009). Articles that do not meet the inclusion criteria were excluded from the review. The inclusion criteria for this review are:

i. Articles published between January 2004 and May 2015.
ii. Articles that meet the search terms.
iii. Articles published in English.
iv. Only articles on pre-registration nursing education were included
v. Expert committee reports, programme evaluation reports, project reports, quantitative (descriptive, correlational, exploratory, comparative, intervention, quasi-experimental and contextual), qualitative (descriptive, exploratory, contextual and phenomenological) and mix method studies conducted among nurses and student nurses in Sub-Saharan Africa, listed in Cochrane Library, Science Direct, EBSCO host, PubMed, Wiley Online Library and Google Scholar databases were considered.
vi. An attempt was made in contacting experts within the area but was unsuccessful.

2.4.3 Literature review (*search*)

A well-defined literature search is important in an integrative review as this stage, if not handled carefully, may introduce a great deal of bias or error into the review process. The ideal literature search for an integrative review must include all relevant literature of both quantitative and qualitative studies. A computerised search is the easiest and most convenient form of literature search but if the search terminologies are inconsistent and poorly combined, about only 50% of the relevant literature may be retrieved (Whittemore &

Knafl 2005). A comprehensive search of databases using all combinations of the search terms in addition to a purposive search based on the review topic is very helpful (Whittemore & Knafl 2005). Other forms of literature search include an ancestry search, journal hand searches, networking, and research registry searches which are very helpful but very difficult to carry out.

Describing the target and accessible population in an integrative review is essential. The target population is the group or elements in the primary research articles about whom the reviewer hopes to generalize the review findings whereas the accessible population is the individuals or groups within the target population that are included in the primary articles available to the reviewer on the review topic (Russell 2005).

In this review, qualitative and quantitative articles published between January 2004 and May 2015 were sampled from Cochrane Library, Science Direct, EBSCO host, PubMed, Wiley Online Library and Google Scholar by means of a computerised search and an ancestry search.

Key terms used were broken down into all their elements. For example, *clinical nursing education* was expanded into: *clinical placement, clinical accompaniment, clinical facilitation, clinical supervision, clinical mentorship, clinical assessment and clinical training,* to make the search exhaustive. A combination of the terms 'clinical education' which includes any of the seven components above with 'best practice' and Sub-Saharan Africa were used to search the above listed databases in this review.

Cooper (1988) cited in Russell (2005) outlined four ways of enhancing validity in data collection and review including: conducting an exhaustive literature search, explicitly defining the data to be collected from studies, stating all selection biases and summarizing the characteristics of human populations included in the study.

2.4.4 Development of a data collection tool

A data collection tool is developed according to the purpose, question and objectives of the study. Two questions to consider while developing the data collection tool are:

- *What is the essence of the review?*
- W*hat components of the included articles are expected to be examined by the reviewer?*

Generally, most reviewers look at the authors and their affiliation (country of origin or institution of work), year of publication, title of the study, conceptual framework, research methodology, population and sample, the journal of publication, title of the study (Maree & Schmollgruber 2014; Russell 2005; Sparbel & Anderson 2000; Whittemore & Knafl 2005).

In this study, the reviewer used Sparbel and Anderson's (2000) data collection tool, with their permission. The tool, as used in this study to review research articles on the topic 'Best clinical nursing education practices in Sub-Saharan Africa' , comprises 15 items as detailed in Table 1.1 blow (see also Appendix A).

TABLE 1.1: DATA COLLECTION TOOL

DATA COLLECTION TOOL	
1. Researcher(s)	
2. Year of study	
3. Country of origin	
4. Purpose of study	
5. Study focus	
6. Conceptual model	

7. Research question/hypothesis	
8. Aspects of clinical nursing education addressed	
9. Type of research design	
10. Type of sample	
11. Number of subjects in study	
12. Instruments/tools used	
13. Validity (addressed)	
14. Reliability (addressed)	
15. Key findings	

2.4.5 Identification of rules of inference for data analysis and interpretation

Because data analysis is very complex and potentially fraught with bias, rules for data analysis must be set before the review begins, to avoid biased interpretation of data. In this research, the five stages of thematic analysis described by Whittemore & Knafl (2005) form the basis of the rules of inference used for this study. The five stages are described in **2.4.8 (**systematic analysis of data) below.

2.4.5.1 Evidence grading and evaluation system

All articles have been evaluated and ranked according to the evidence ranking scale in De Souza et al. (2010). This system ranks articles from Level 1 (meta-analysis of multiple randomized controlled clinical trials) to Level 6 (evidence based on opinions of specialists).No quality assessment was done for the reports (2 project reports, 2 expert committee reports and 2 programme evaluation reports) as the researcher could not locate any specific tool for this purpose. The reports were included based on reviewers' discretion of quality and rigour of the evaluation process.

TABLE 2.1: EVIDENCE GRADING AND EVALUATION SYSTEM

No.	**Research Design**	**Evidence Grading and Evaluation System**
1.	Quantitative articles	The quality of quantitative articles was graded using Mann (1996) from Grade I (Randomised Control Trials (RCT) with subcategories A, B and C) to Grade III (All other studies with sub categories A, B, and C) (Molassiotis et al. 2006:433 cited in Maree & Schmollgruber 2014)
2.	Qualitative articles	The qualitative articles were evaluated using the quality evaluation tool developed by Cesario et al. (1996) classifying articles into QI (Good quality), Q II(fair quality) and QIII (Poor-quality)(Cesario et al. 1996:711cited in Maree & Schmollgruber 2014).
3.	Mixed method studies	Mixed method studies were assessed using the quality of mixed method studies in health service research assessment tool developed by O'Cathain et al. (2008). This assessment tool was only used to include the studies but not to grade them (O'Cathain et al. 2008; Maree & Schmollgruber 2014)

2.4.6 Revision of the data collection tool as required

In this stage, the data collection tool is reviewed if necessary to solicit the needed answers from studies included. After setting the rules for data analysis, the reviewer then takes a second and critical look at the data collection tool (Sparbel & Anderson 2000). This is done to be sure if the data collection tool will solicit the answers needed from the studies included in the review (Ganong 1987). In this review, none of the questions were excluded from the data collection tool as the tool consists of items that generated results to meet the objectives of this review.

2.4.7 Reviewing the studies using the data collection tool for information gathering

The revised data collection tool was then used to extract the information needed from the articles that were included in the review to answer the research question. The qualities of articles included were assessed and their level of evidence graded by the relevant grading and quality assessment system described in Table 2.1.

2.4.8 Systematic analysis of the data

The purpose of data analysis is to have an exhaustive and an unbiased interpretation of included articles, and exploring an innovative way of synthesizing the findings. This involves ordering, coding, categorizing and summarizing of information gathered from primary research articles into an amalgamated conclusion about the research topic (Whittemore & Knafl 2005). This stage is complex and liable to threats of validly if details are not adhered to. The reviewer must clearly define the method of analysis prior to the review (Russell 2005; Whittemore & Knafl 2005). This review employed thematic analysis to analyse the data. Thematic analysis involved a constant comparison of data, in which the extracted data is converted into patterns, themes, variations, and relationships (Whittemore & Knafl 2005).

Whittemore & Knafl (2005) outlined ten (10) elements of thematic data analysis, comprising: noting patterns and themes, seing plausibility, clustering, counting, making contrast and comparison, descerning common and unusual patterns, subsuming particulars into general, noting relationship between variability, finding intervening factors and building a logical chain of evidence. An audit trail is kept on the data analysis process. It is important to be honest and keep the process transparent, explaining all conflicting and spurious relationships (Whittemore & Knafl 2005). The thematic data analysis employed in this study consists of five stages namely data reduction, data display, data comparison, drawing of conclusions and verification. These stages are described below.

2.4.8.1 Data Reduction

Whittemore & Knafl (2005) stated that data can 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, under developed or third world countries), sample characteristics (gender, sex, age, race etc), or on 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 makes it easy to compare articles with each other based on giving characteristics such as concepts, methodology, conceptual framework, definitions etc.

In this review, data was reduced into research design categories (quantitative, qualitative, mixed method and reports) on the data matrix in Table 3.3 below.

2.4.8.2 Data Display

Data in this review was displayed on a matrix for easy visualization of patterns, similarities, and themes (Table 3.3).

2.4.8.3 Data Comparison

This involves examining the displayed data in order to determine themes, patterns and relationships. Concept mapping is used to include identified variables, patterns or themes in data comparison stage. Essential to data comparison and determination of patterns and themes is data display, creativity and critical analysis of data (Whittemore & Knafl 2005). Concept mapping was used in this study.

2.4.8.4 Conclusion and verification

Data analysis is completed by drawing conclusions and verification of findings. This involves drawing of abstract colligation of small sets of information that 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 evidences contradict and the reviewers are not certain on which direction to take, a vote is cast, considering frequency of the conflicting findings (Cooper 1988 cited in Whittemore & Knafl 2005). Possible recommendations are made for further research to clarify conclusions when evidences 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 conclusion drawn.

2.4.9 Discussion and interpretation of the data

This stage involves the drawing of conclusions from the data analysed. It involves the synthesis of analysed data into a new model or view about the phenomenon under study. It is a critical stage of the review process because it enables the reviewer to answer the research question and fulfils the purpose for the review. In this review, best clinical nursing education practices in sub-Saharan Africa have been described.

2.4.10 Report the findings

Reporting the findings make it available for the research, clinical and academic community to use. This integrative review was submitted to the University of Witwatersrand in partial fulfillment of the degree of Master of Science in Nursing Education.

2.5 ETHICAL CONSIDERATIONS

The following considerations were made regarding research ethics in this study:

i. The research proposal was peer reviewed for input from the department of nursing education, School of Therapeutic Sciences, Faculty of Health Sciences, University of Witwatersrand.

ii. Approval was obtained from the Faculty of Health Sciences Postgraduate Research committee, University of Witwatersrand.

iii. Ethical clearance waiver with reference number W-CJ-150415-1 was obtained from the University of Witwatersrand Human Research Ethics Committee (Medical) for this review (Appendix B).

iv. Permission has been acquired from *Wiley Global Permissions* for the use of the data collection tool in this research (Appendix C).

v. License number 3591310535289 has been acquired from *John Wiley and Sons* for the use of Cesario, Morin & Santa-Donato (2002)'s Qualitative Study evaluation tool used in this study (Appendix D).

vi. Permission was granted by Alicia O'Cathain for the use of O'cathain et al (2008) Quality of Mixed Methods Studies in Health Services Research Assessment tool (Appendix E)

2.6 CONCLUSION

Sparbel & Anderson's (2000) version of Ganong's (1987) framework for integrative literature review is comprehensive in gathering, evaluating, analysing and drawing conclusions from available literature.

CHAPTER THREE

DATA COLLECTION AND INCLUSION OF STUDIES

3.1 INTRODUCTION

This chapter presents how the literature search was conducted, the articles retrieved, inclusion/exclusion process, the evidence grading and quality assessment process and the findings extracted from the included articles.

3.2 SEARCH

Qualitative and quantitative articles published between January 2004 and May 2015 were sampled from Cochrane Library, Science Direct, EBSCO host, PubMed, Wiley Online Library and Google Scholar using a computerised database search. The study is in partial fulfillment of a Master of Science in nursing from January 2014-October 2015.The review was expected to cover a decade (2004-2014) but the researchers thought it wise to include articles up till May 2015 as a rule of thumb for integrative reviews is to continue searching until the report is finally written.

A combination of the three broad key terms was used to conduct the search: *Best practices, Clinical nursing education and Sub-Saharan Africa.* The broad key word 'clinical nursing education' was subdivided and was therefore substituted with the terms *'clinical placement, clinical accompaniment, clinical facilitation, clinical supervision, clinical mentoring, clinical preceptorship, clinical assessment, clinical learning environment, and clinical simulation'* in the search. This was done to ensure that all research articles that fall within the scope of clinical nursing education are retrieved. All the identified databases were searched, using the combination key terms 'Best practices AND/OR Sub-Saharan Africa' with each of the other key terms.

3.2.2 Computerized Search

A computerized search was conducted and the articles that were found were scanned for relevance to the topic and retrieved for further scrutiny. Abstracts of article titles that were related to the study were read to decide whether they were suitable for retrieval and subsequent evaluation for inclusion or not. The results of the search process are presented in Figure 3.1 and Table3.1below.

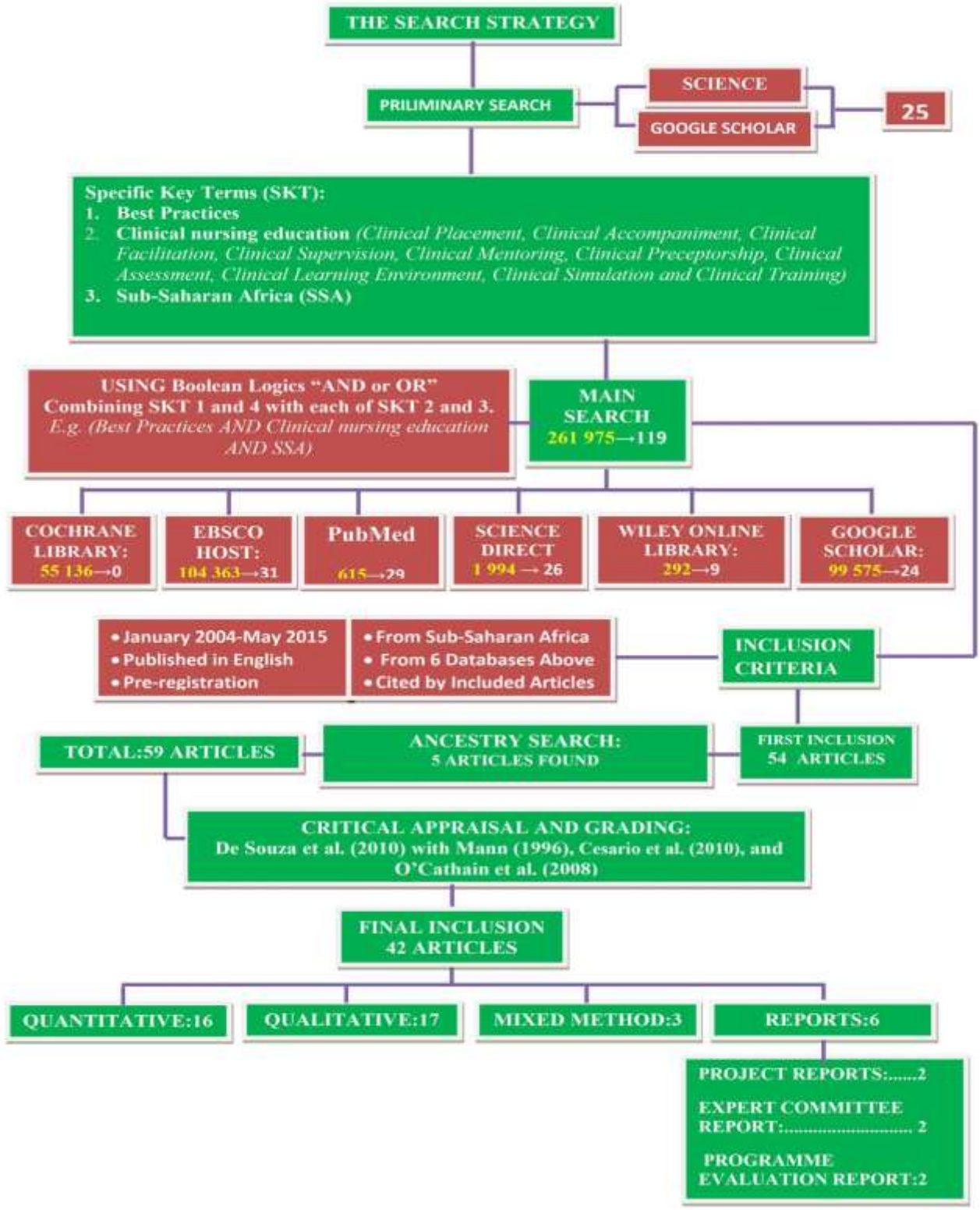


FIGURE 3.1: THE SEARCH STRATEGY

The details of the main search process are presented in table3.1 below.

TABLE 3.1: THE COMPUTERIZED DATABASE SEARCH

DATABASE	KEY WORDS COMBINED	NUMBER OF ARTICLES	NUMBER OF ABSTRACTS READ	NUMBER OF ARTICLES INCLUDED
COCHRANE LIBRARY	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	869	0	0
	Best Practices, Clinical Placement and Sub-Saharan Africa	1093	0	0
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	5814	0	0
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	5815	0	0
	Best Practices, Clinical Supervision and Sub-Saharan Africa	5236	0	0
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	6014	0	0
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	6069	0	0
	Best Practices, Clinical Assessment	5799	0	0
	Best Practices, Clinical Environment and Sub-Saharan Africa	6082	0	0
	Best Practices, Clinical Simulation and Sub-Saharan Africa	5970	0	0
	Best Practices, Clinical Training and Sub-Saharan Africa	6375	0	0
TOTAL		**55136**	**0**	**0**
EBSCO HOST **consisting:** MEDLINE, CINAHL Plus, HEALTH SOURCE: (Nursing/Academic Edition), and ERIC	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	15319	5	11
	Best Practices, Clinical Placement and Sub-Saharan Africa	988	0	0
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	868	0	9
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	13911	0	1
	Best Practices, Clinical Supervision and Sub-Saharan Africa	891	0	3
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	7139	0	2
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	3977	0	1
	Best Practices, Clinical Assessment	15318	0	2
	Best Practices, Clinical Environment and Sub-Saharan Africa	15317	0	1
	Best Practices, Clinical Simulation and Sub-Saharan Africa	15318	0	0
	Best Practices, Clinical Training and Sub-Saharan Africa	15317	0	1
TOTAL		**104363**	**5**	**31**
SCIENCE DIRECT	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	92	3	19
	Best Practices, Clinical Placement and Sub-Saharan Africa	90	1	0
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	17	0	0
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	7	0	1
	Best Practices, Clinical Supervision and Sub-Saharan Africa	3	3	1
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	1	0	1
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	77	0	0
	Best Practices, Clinical Assessment	1	0	0
	Best Practices, Clinical Environment and Sub-Saharan Africa	80	2	2
	Best Practices, Clinical Simulation and Sub-Saharan Africa	172	2	0
	Best Practices, Clinical Training and Sub-Saharan Africa	1454	4	2
TOTAL		**1994**	**15**	**26**
	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	190	10	8
	Best Practices, Clinical Placement and Sub-Saharan Africa	14	9	1
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	12	3	3
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	19	2	0

PUBMED	Best Practices, Clinical Supervision and Sub-Saharan Africa	31	11	2
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	13	8	2
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	7	5	3
	Best Practices, Clinical Assessment	147	13	2
	Best Practices, Clinical Environment and Sub-Saharan Africa	64	6	5
	Best Practices, Clinical Simulation and Sub-Saharan Africa	7	6	1
	Best Practices, Clinical Training and Sub-Saharan Africa	111	17	2
TOTAL		**615**	**86**	**29**
WILEY ONLINE LIBRARY	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	47	0	6
	Best Practices, Clinical Placement and Sub-Saharan Africa	31	0	0
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	2	0	2
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	212	0	0
	Best Practices, Clinical Supervision and Sub-Saharan Africa	0	0	0
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	0	0	0
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	0	0	0
	Best Practices, Clinical Assessment	0	0	0
	Best Practices, Clinical Environment and Sub-Saharan Africa	0	0	0
	Best Practices, Clinical Simulation and Sub-Saharan Africa	0	0	0
	Best Practices, Clinical Training and Sub-Saharan Africa	0	0	1
TOTAL		**292**	**0**	**9**
GOOGLE SCHOLAR	Best Practices, Clinical Nursing Education and Sub-Saharan Africa	16,100	24	18
	Best Practices, Clinical Placement and Sub-Saharan Africa	4650	10	0
	Best Practices, Clinical Accompaniment and Sub-Saharan Africa	333	15	0
	Best Practices, Clinical Facilitation and Sub-Saharan Africa	12000	0	0
	Best Practices, Clinical Supervision and Sub-Saharan Africa	11600	20	1
	Best Practices, Clinical Mentoring and Sub-Saharan Africa	3460	12	0
	Best Practices, Clinical Preceptorship and Sub-Saharan Africa	262	0	0
	Best Practices, Clinical Assessment	16300	0	0
	Best Practices, Clinical Environment and Sub-Saharan Africa	16200	12	4
	Best Practices, Clinical Simulation and Sub-Saharan Africa	2670	0	1
	Best Practices, Clinical Training and Sub-Saharan Africa	16000	5	0
TOTAL		**99575**	**98**	**24**
SUM TOTAL		**261975**	**204**	**119**

3.2.3 The Inclusion and Exclusion Process

The one hundred and nineteen articles retrieved were subjected to scrutiny, applying the inclusion criteria strictly by two independent reviewers (student and first supervisor). The first inclusion and exclusion meeting was held between the researcher and the supervisors.

The second supervisor served as the adjudicator where the student and fist supervisor did not reach consensus on inclusion or exclusion of a particular paper. The abstracts of the articles included were scrutinized against the inclusion and exclusion criteria as well as the conceptual definitions. This was done to check if the inclusion and exclusion criteria were applied appropriately during the search and retrieval process. After the first exclusion meeting, consensus was reached on 54 articles for preliminary inclusion.

3.2.4 The Ancestry Search

An ancestry search was conducted on the 54 articles. This search involved scanning the reference list or bibliography of the articles included to see if there are citations from the articles included that meet the inclusion criteria of the study. Those articles are termed the *ancestors* of the included articles. This search produced five articles which were then searched and retrieved, adding up to 59 articles for final inclusion and exclusion process and subsequent data extraction.

TABLE 3.2: ANCESTRY SEARCH RESULTS

No.	Ancestor	Descendant	Retrieved from (Database)	Remark
1.	Abubu (2010)	Jeggels et al. (2013)	Google Scholar	Included
2.	(Department of Health 2011)	Jeggels et al. (2013)	Google Scholar	Included
3.	Kachiwala (2006)	Msiska (2012)	Google Scholar	Included
4.	Chabeli & Muller (2004)	Kgafela (2013)	Google Scholar	Included
5.	Mongwe (2007)	Kgafela (2013)	Google Scholar	Excluded

All 59 articles were screened, evaluated and data extracted unto the data collection sheet. During this stage, 17 articles were excluded. The final sample was 42 articles.

3.3 DESCRIPTION AND EVALUATION OF ARTICLES INCLUDED

The matrix consists of 16 quantitative articles, 17 qualitative, 3 mixed-method studies and 6 reports (2 project reports, 2 expert committee reports and 2 programme evaluation reports).

All articles have been evaluated and ranked according to the evidence ranking scale in De Souza et al. (2010). This system ranked articles from: Level 1 (meta-analysis of multiple randomized controlled clinical trials); Level 2 (experimental studies); Level 3 (quasi-experimental studies); Level 4(descriptive non-experimental studies or qualitative studies); Level 5 (evidence emanating from case reports or experience) and Level 6 (expert opinions).

The quality of Quantitative articles were graded using Mann' (1996) grading system for quantitative articles (Appendix F)ranging from Grade I (Randomised Control Trials (RCT) with subcategories A, B and C) to Grade III (All other studies with sub categories A, B, and C).The qualitative articles were evaluated using the quality evaluation tool developed by Cesario et al. (1996) classifying articles into QI (good quality), Q II(fair quality) and QIII (poor-quality).

Mixed method studies were assessed using the quality of mixed method studies in health service research assessment tool developed by O'Cathain et al. (2008). This assessment tool was only used to include the studies but not to grade them (Appendix E). The quality of project, expert committee and programme evaluation reports were assessed based on researchers' discretion as no specific quality evaluation tool for these reports was found.

3.4 REASONS FOR EXCLUSION

Apart from the article not meeting the inclusion criteria, the main reason for excluding articles was if the article focused on patient care rather than on nursing eduction. Secondly they were excluded if the population consisted of people other than pre-registration students.

3.5 DATA MATRIX

TABLE 3.3: DATA MATRIX

	QUANTITATIVE ARTICLES **Evidence grading is done by combining the Six general levels of evidence reported in De Souza et al (2010) with Mann (1996) for quantitative studies. (L=level, G=grade and ABC = subdivisions of grades (appendix F)**							
	Author(s) Country (setting)	**Journal & Year**	**Research Design**	**Population and Sample**	**Data Collection and Analysis**	**Area(s) of Clinical Education**	**Findings & Recommendations**	**Level (L) of Evidence & Quality(Q)**
1.	Brysiewicz & Lee **South Africa**	Curationis **(2009)**	Descriptive survey	Convenience sampling (Students) N=31, n=31	Questionnaire Descriptive statistics	Nursing diagnosis	Nine steps process of case presentation makes case presentation easy for teaching and learning.	Level 4, Grade 3B (L4G3B)
2.	Cassimjee et al. **South Africa**	Curationis **(2006).**	Quantitative descriptive survey	Purposive, N=286 n=59	Questionnaire Descriptive statistics	Accompaniment Instruction Supervision	1. Students want longer hours of contact with tutors and instructors. 2. Ward sister is the best person for clinical instruction 3. Roles should be clarified among tutors, instructor and ward sisters.	(L4G3B)
3.	Cloete & Jeggels **South Africa**	Curationis **(2014)**	Descriptive correlational	Convenient, N=60 n= 41	Questionnaire Descriptive statistics	Preceptorship	1. Organised in-service training for preceptors. 2. Revised preceptor roles 3. Make qualified and willing nurses preceptors	(L4G3B)
4.	De Villiers et al. **South Africa.**	Curationis **(2004)**	Quantitative Descriptive	Facilitators N=5, n=5 Students N=53, n=53	Questionnaire, Written unstructured feedback, interviews	Facilitation, Supervision	1. Students prefer group activities. 2. Facilitators should first demonstrate clinical procedures 3. Practicing certain skills should be compulsory while some voluntary	L4G3B
5.	Dube& Jooste **Batswana**	Curationis **(2006)**	Non-Experimental, Explorative, descriptive Quantitative study	Convenient. Preceptors: N=72, n=72 Students: N=444,n=222	Questionnaire. Descriptive and Inferential statistics	Preceptorship Accompaniment	1. 2-23(average 7.82) students assigned to preceptor 2. Preceptors have good professional relationship with the students 3. NEI's must have orientation programmes for preceptors. 4. Preceptors must take leadership development course as a prerequisite 5. Regular seminars and workshops should be organised for preceptor	L4G3B
6.	Julie et al. **South Africa**	Curationis **(2015)**	Quantitative exploratory and Descriptive	Stratified random sampling 34(lecturers, supervisors and academic officers)	Questionnaire Descriptive statistics	Service learning	Nurse educators need service learning training	L4G3B
7.	Kachiwala **Malawi**	Wits University, South Africa **(2006)**	Quantitative descriptive design	Convenient Sampling Students N=84 n= 73	Questionnaire Descriptive statistics	Placement Supervision	1. Students were satisfied with their clinical environment 2. Students were satisfied with relationship with staff 3. Students satisfied with feedback from supervisors but did not get it regularly 4. Educators are not fully available for accompaniment 5. Educators should increase visit periods in the ward 6. NEI must recruit and train clinical supervisors 7. Continues feedback to be given to students on their performance in clinical	L4G3B
8.	Löfmark& Thorell-Ekstrand, **Tanzania**	Nurse education in practice **(2009)**	Quantitative Comparative study	Convenience sampling (Nurses) Tanzania=30 Sweden=68	Questionnaire Descriptive statistics	Supervision Accompaniment	1. Preceptors believed that to be a nurse is to be a role model 2. Preceptors believe nurses have a teaching responsibility 3. Workshop for preceptors should be on-going 4. Workshop had more impact on Tanzanian nurses than Swedish	L4G3B

	&Sweden							
9.	Lekhuleni et al. **South Africa**	Health SA Gesondheid **(2004)**	Quantitative Descriptive Cross-sectional survey	Simple random sampling Students:116 Educators:18 Supervisors:35	Questionnaire Inferential statistics	Accompaniment	1. Student and educators concerned about placement objectives than patient care 2. Educator's accompaniment improves student's clinical learning. 3. Clinical learning is enhanced by improved communication between educators, unit supervisors and students 4. Students must take responsibility for their clinical learning	L4G3A
10	Le roux &Khanyile **South Africa**	Curationis **(2012)**	Descriptive, cross-sectional survey	Stratified random Sampling N=250, n=223	Questionnaire descriptive analysis	Clinical teaching method	1. Students begin to have the feeling of competence in third year 2. Case-based learning should be used at all level of nursing education 3. In-service learning should be organised for educators	L4G3B
11	Monareng et al. **Batswana**	Africa Journal of Nursing & Midwifery **(2009)**	Non-Experimental exploratory descriptive quantitative	Convenient Sampling Preceptors:72 Students:200	Self-administered questionnaire Descriptive and inferential statistics	Preceptorship Accompaniment	1. Preceptor-student Planning sessions to be held for needs assessment 2. Preceptors to concentrate on providing reality based, skill-oriented learning opportunities for students 3. Preceptorship workshops should be organised	L4G3B
12	(Nilsson et al. 2014) **Kenya**	ActaObstetricia et GynecologicaScandinavica **(2014**)	Controlled intervention study(Pre-test and post-test design)	Convenient Sampling Senior nursing students N=35 N=27	Structured Observation Inferential statistics	Technology/Blended learning	1. Clinical performance increase after video training 2. Non-interactive video training can reach the deepest villages to improve care	L2G2B
13	Nxumalo **South Africa**	University of South Africa **(2011)**	Quantitative descriptive explorative	Convenient Sampling N=330, n=132 Students:110 Educators:22	Questionnaire Descriptive and inferential statistics	Accompaniment	Students prefer preceptors and educators to accompany them	L4G3B
14	Tyer-Viola et al. **Zambia**	International Journal of Nursing Education Scholarship **(2012)**	Quasi-experimental design (Pre-test –post test)	Purposive Students N=41 n=34	Questionnaire Descriptive and inferential statistics	Simulation	1. Repeating simulations scenarios improve student learning 2. Improving faculty debriefing helps students in real life situations 3. Simulation increases students satisfaction with learning 4. Simulation scenarios should be affixed with unfolding case studies as students progress	L3G2B
15	Uys& Meyer **South Africa**	Curationis **(2005)**	Quantitative, descriptive,explorative and contextual design.	Purposive Clinical instructor N=110, n=64	Questionnaire Descriptive statistics	Accompaniment Facilitation	1. Critical thinking in clinical accompaniment must be developed 2. Reflection overcomes theory-practice gap 3. Patient case presentation is best for developing critical thinking 4. Group work is an important accompaniment strategy 5. Organize refresher courses for facilitators trained in previous nursing programmes 6. Concrete guidelines to be developed for clinical accompaniment	L4G3B
16	Uys& Treadwell **South Africa**	Curationis **(2014)**	Pre-experimental post-test only design with comparison group	Convenient Students n=36	Structured observation Descriptive statistics	Simulation	Simulation enhanced patient cantered care	L3G2B

	QUALITATIVE ARTICLES **(Evidence grading is done by combining the six general levels of evidence reported in De Souza et al (2010) with Cesario et al.'s (2010) qualitative study rating)-L=level, QI=good quality, QII= fair quality and QIII= poor quality.**							
	Author(s) Country (setting)	**Journal & Year**	**Research Design**	**Population and Sample**	**Data Collection and Analysis**	**Area(s) of Clinical Education**	**Findings & Recommendations**	**Level of Evidence & Quality**
1.	Abubu **South Africa**	University of the Western Cape, South Africa **(2010)**	Qualitative phenomenological explorative study	Purposive First year students n=12	In-depth face-face interviews Thematic analysis	Placement	1. First year clinical placement provided opportunity to practice in real life situations 2. First years must have adequate preparation before placement 3. Students were motivated by role models in hospital 4. Supervisors are employed by NEI to support both in simulation laboratory and clinics 5. Senior students supported the junior ones in clinical practice 6. Debriefing of clinical scenario is encouraged 7. Schools should provide effective clinical support system for students	L4Q1
2.	Chabeli& Muller **South Africa**	Health SA Gesondheid **(2004)**	Qualitative, contextual, explorative and descriptive study	Purposive Nurse educators n=12	Interactive agenda, focus group interviews Thematic analysis	Facilitation Reflective thinking Assessment	1. Action guidelines on reflective thinking must be developed to help educators 2. Questioning, lecture demonstrations, observations, narratives, brainstorming, field trips, simulation (role-play, games, videos) are effective for clinical teaching 3. Direct observation, interviews, self assessment, poster presentation, workbooks, structured observations(e.g. OSCE) are effective for clinical assessment. 4. Reflective journal writing, nursing process and case studies, peer tutoring, concept mapping, group projects, seminars and workshops are good for clinical learning. 5. Peer group assessment, critical incident techniques, portfolio assessment, reflective tutorials are also good for clinical assessment. 6. Involving in clinical conferences, values clarification sessions, research/community-based projects and self directed learning contracts facilitate student learning.	L4Q1
3.	Du Plessis **South Africa**	Health SA Gesondheid **(2004)**	Qualitative, descriptive, explorative and contextual research design	Purposeful convenient Students :44 2nd years:32 3rd years:12	Naive Sketches and focus group interviews Thematic analysis	Supervision Accompaniment	1. Peer group guidance-(for students): a. Facilitates theory-practice integration b. Gave extra time for practice learning c. Prepared students well for exams d. Makes accompaniment relaxed and less threatening e. Improved cohesion and understanding among students. f. Makes hospital adaptation easier for students g. Improved students self confidence	L4QI
4.	Joubert & De Villiers **South Africa**	Curationis **(2015)**	Qualitative descriptive studies	Purposive sampling 3rd year students n=55 Postgraduate students(mentors) n=12	Nominal group interview Multiple-group analysis of Van Breda (2005).	Mentoring Accompaniment	1. **Learning experiences of Mentees** a. Mentors were knowledgeable and competent b. Mentors were enthusiastic and helpful c. Mentoring bridged the theory-practice gap **d.** The mentoring programme is important for learning 2. **Recommendations by mentors and mentees** a. Orientation of participants to their roles, responsibilities and programme outcomes b. There should be enough time for the mentor and student contacts c. There should be a multidisciplinary team approach to clinical teaching	L4QI

							d. Selection of mentors should be voluntary	
5.	Kgafala **South Africa**	University of Pretoria, South Africa **(2006)**	Qualitative, contextual , explorative and descriptive research design	Consecutive sampling Students N=214 n=214	Semi structured self report interview guide Qualitative content analysis	Accompaniment	1. **What is:** a. 4500 hours of placement per programme. b. Best clinical instructor is the nursing educator c. There should be demonstrations before exposure to clinical environment d. Nursing staff welcome students warmly e. Nursing staff developed good working relationship with students f. Effective orientation was given to students g. Professional nurses are willing to teach h. Students enjoyed multidisciplinary team support(doctors, physiotherapist, chaplain and social workers) i. Student to educator ratio is 30:1 2. **What must be:** i. Nurse educator must visit on daily basis ii. Provide more time for clinical practice iii. Allocate specific nurse educator to specific ward iv. Professional nurses should revisit their accompaniment roles v. Clearly communicated learning outcomes to the clinical units vi. Hospitals should allocate discussion rooms for educator-student discussions in hospitals vii. Schools should provide good student transport to-and-fro clinical sites	L4QI
6.	Lekalakala-Mokgele E. &Caka E.M. **South Africa**	Curationis **(2015)**	Qualitative, contextual , explorative and descriptive research design	Purposive and Convenient sampling 2nd year Enrolled Nurses N=30, n=19	Focus Group Discussions Thematic analysis	Clinical learning environment Accompaniment Placement	Self-directed learning and acceptance by hospital staff facilitates students' learning	L4QI
7.	Mabuda et al. **South Africa**	Curationis **(2008)**	Qualitative, explorative descriptive and contextual , research study	Purposive Sampling Final year students n=11	Phenomenological interviews (Thematic analysis)	Placement Accompaniment	1. Students rely on ward sisters for guidance 2. Tutors demonstrated procedures in college using dolls 3. Few unit managers assigned students to challenging tasks: case presentations, post-clinical conferences 4. Students have good relationship with unit managers who completedthe same programme as students.	L4QI
8.	Madumo&Peu **South Africa**	Curationis **(2006)**	Qualitative, explorative and descriptive study	Purposive sampling 3rd year students n=12	Focus group interviews (Thematic analysis)	Environment Accompaniment	1. Student status recognition 2. Intensive accompaniment from educators	L4QI
9.	Magobe et al. **South Africa**	Health SA Gesondheid **(2010)**	Qualitative, explorative descriptive and contextual , research study	Purposive Convenience sampling Clinical instructor=6 students=34	Focus group interviews (Thematic analysis)	Competence Accompaniment	1. There should be continuing professional development programmes for preceptors 2. Nurses must have appropriate qualification to become preceptors	L4QI
10	Mntambo **South Africa**	University of South Africa **(2009)**	Contextual, descriptive and explorative	Purposive sampling 2nd year students And educators	Focus group interviews Thematic analysis	Accompaniment	1. Matrons were nice to students 2. Time of placement was not sufficient for some specialties 3. Students need ward in-charges to personally guide them 4. Students were tolerated in wards without emergency cases: they were seen as hazardous to critically ill patients 5. Accompaniment guidelines are necessary for clinical nursing education,	L4QI

							6. Improve relationship between colleges and hospitals and to improve communication between hospital authorities and students	
11	Msiska et al. **Malawi**	International Journal of Africa Nursing Sciences **(2014)**	Hermeneutic phenomenology	Purposive sampling Students n=30	Conversation interviews Colaizzi's (1978) Phenomenological analysis	Placement Accompaniment	1. Substantial learning took place in the hospital 2. Students were excited to practice on their first placement 3. Students learning were enhanced by following patients throughout admission 4. Some nurses and doctors improve student learning 5. Students play significant role in their own learning 6. Students supported each other 7. Students had good relationship with patients	L4Q1
12	Murathi et al. **South Africa**	Curationis **(2005)**	Qualitative, explorative, descriptive and contextual.	Purposive sampling N=?	phenomenological interview (Thematic analysis)	Accompaniment Facilitation Supervision	Presence of educators improve teaching	L4QI
13	Rikhotso et al. **South Africa**	Curationis **(2014)**	Qualitative, explorative, descriptive and contextual.	Purposive sampling 2nd year students n=23	Focus group interviews Qualitative content analysis	Accompaniment	Good interpersonal relationship between students and preceptors enhances students learning	L4Q1
14	Thus **(Rwanda)**	University of Western Ontario, **(2014)**	Qualitative descriptive study	Convenience sampling Clinical instructor n=21	Interview Kanter's (1993) and Spreitzer's (1995) secondary data analysis was used.	Accompaniment	1. Clinical instructors wish to further their education 2. There was limited information on clinical instructor's roles 3. Clinical instructors believe role modelling, role responsibilities, evaluation, teamwork, collaborative communication, and facilitating student learning are essential in guiding students. 4. Effective communication, respect and individual evaluation help facilitate conflict resolution in clinical education 5. Impact was seen as being able to influence students learning for safe care	L4QI
15	Van Ryhyn.&Gontsana **South Africa**	Curationis **(2004)**	Qualitative, contextual, descriptive and Exploratory study	Purposive convenient sampling Third year nursing students n=8	Interviews Tesch's method of Data analysis(Thematic analysis)	Placement	1. Good orientation of students is needed for effective clinical learning 2. Clearly stated learning objectives is essential for student learning 3. Students need increased clinical exposure 4. Resisting students inputs into management process impedes student learning 5. Adequate communication among staff, management and students improves learning	L4Q1
16	Van Rooyen et al. **South Africa**	Curationis **(2005)**	Qualitative, contextual, descriptive and Exploratory study	Purposive sampling 2nd year students N=59 n=6	Phenomenological interviews Thematic analysis		1. Student nurses created meaning and gained strength in caring for the dying through: a. Praying for self and the patient. b. Own spirituality. c. Believing in heaven/a better life after death.	L4Q1
17	Waterson et al. **South Africa**	Curationis **(2006)**	Qualitative, contextual, descriptive and Exploratory study	Purposive sampling Students=14 And tutors=7	Focus group interviews (Thematic analysis)	Accompaniment Placement	High expectations from the affiliated university regarding standards of nursing education in a nursing college.	L4QI
	MIXED METHOD STUDIES **(Evidence grading is done by combining the six general levels of evidence reported in De Souza et al (2010) withO'Cathain et al's (2008) Quality of Mixed Methods Studies in Health Services Research Assessment tool)**							
1.	Appiagyei et al.	BioMed Central **(2014)**	Mixed Method study	Convenient sampling Nurse educators and administrator	Review & Key informant interview	Challenges in Placement & Accompaniment	1. Students were exposed to the realities of limited resource practices 2. Educator to student ratio ranges from 1:10 to 1:14 to 1:40	L4

	Kenya			n=9	Thematic analysis.			
2.	Eta et al. **Cameroon**	Pan African Medical Journal **(2011)**	Mixed Method study	Quota sampling Clinical educators N=222, n=72	Questionnaire Thematic and descriptive statistics	Accompaniment	1. Students need more time for clinical placement 2. Staff nurse need to update themselves on new evidence in clinical practice 3. Staff nurse need opportunities for further learning	L4
3.	Mulder & Uys **South Africa**	Trends in Nursing **(2012)**	Mixed method descriptive Survey	Purposive sampling Nursing schools within South African universities n=22	Questionnaire Descriptive statistics	Placement Accompaniment	1. Standardize clinical procedures between different healthcare organizations. 2. Clinical practice should focus on best practices. 3. NEI should collaborate with healthcare institutions to identify and appoint appropriate clinical preceptors. 4. NEI should develop short learning programs to develop the knowledge and skills of professional nurses. 5. NEI should involve professional nurses in clinical skills' workshops in order to increase participation in clinical teaching. 6. NEI should create and formalize time periods to allow academics to work in clinical healthcare institutions	L4
	Project Reports, Expert Committee Reports And Programme Evaluation Reports.							
	Author(s) Country (setting)	**Journal & Year**	**Type of article**	**Population and Sample**	**Aim of Report**	**Area(s) of Clinical Education**	**Findings & Recommendations**	**Level of Evidence**
1.	Department of Health **South Africa**	SANC **(2011)**	Expert Committee report	Ministerial task team	To reconstruct and revitalise the Nursing Profession for a Long and Health Life for All South Africans	Placement Accompaniment	1. There should be a committedstructure to implement the clinical education and training programme. 2. Preceptor : student ratios of 1:15-20 for pre-registration students 3. There should be at least 50% practica allocation in curriculum 4. Team clinical teaching is prescribed. **Principles that Support the Clinical Component in the Curriculum are**: 1. Students should learn theory before practica 2. There should be clinical practica for learning and clinical practica for role-taking 3. There should be revision of curriculum every 3-5 4. Use simulations to prepare students for clinical practica 5. Simulation form part of clinical practice for learning. 6. Allocation for clinical practica must be planned jointly between designated *academics/nurse educators from the NEI/HEI* and *the CPC* in the services in a manner that shows programme coherence, continuity and vertical integration of knowledge and skills. 7. Pre-clinical discussions must be held with preceptors to prepare for and brief students on specific expectations. 8. Clinical placement for not less than one month in a clinical area should be implemented for role-taking practica.	L4
2.	Holman et al. . **Malawi**	Annals of Global Health **(2015)**	Programme Evaluation	Clinical mentors	The program goal is to facilitate an environment for improved clinical teaching at Christian Health Association of Malawi (CHAM) colleges.	Mentoring	**Human resource contributions** 1. **Clinical facility must provide:** Clinical Programme Coordinator (CPC) , Clinical preceptors and Clinical supervisors for clinical education programme. 2. **NEI provides:** Educators for the clinical education programme. 3. **Department of health must provide**A Director of Nursing Services (DNS) andClinical placement coordinator for the clinical education programme.	L4

3.	Jeggels et al. **South Africa**	Curationis **(2010)**	Programme evaluation	Convenient sampling Clinical supervisors n=8	To accommodate the contextual changes as a result of the restructuring of the higher education landscape in 2003, the clinical skills training programme at UWC had to be reviewed.	Supervision Simulation	1. Skills lab method was successfully introduced 2. Introduction of new programmes need commitment from faculty 3. NGO's must collaborate with universities to established new programme 4. Review clinical education programmes yearly to include students needs	L4
4.	Jeggels et al. **South Africa**	Curationis **(2013)**	Project report	Purposive sampling Nurses n=54	A preceptorship training programme for nurses was developed in 2009, aimed at improving the clinical teaching expertise of professional nurses.	Preceptorship Accompaniment	1. Preceptorship model of clinical education is useful 2. There should be a consultation between nursing schools and funders during planning of clinical education programmes 3. There must be collaboration between schools and clinical facility in planning and implementing clinical education programmes	L4
5.	Miceli et al. **Uganda**	International journal of infectious diseases **(2012)**	Project report		Integrated Infectious Disease Capacity Building Evaluation (IDCAP) based at the Infectious Diseases Institute at Makerere University	Clinical teaching	1. Three key practices for building routine and adaptive reasoning skills: a. articulating the reasoning process b. practice-embedded learning c. Collective learning in the clinic.	L4
6.	The Nursing education stakeholders group **South Africa**	Trends in Nursing **(2012)**	Expert Committee report	The Nursing Education Stakeholders (NES) Group: CPAS, DENOSA, FUNDISA, NEA, Nurse Managers, PHEPSA, SANC	The purpose of the Summit was to revitalise the nursing profession for a health life for all South Africans.	Clinical education model	1. There should be a system of clinical preceptors ensures a minimum level of clinical teaching and support for students during their clinical practice for role-taking. 2. Clinical Placement Co-ordinator shouldmanages the total clinical teaching system and ensures its functioning and quality. 3. Clinic supervisors must teach and assist students during role taking. 4. Students are only placed in clinical facilities where a certain level of quality of nursing care, based on clearly defined standards, is given. 5. Nurse educatorsare expected to remain clinically competent in their field and be part of the clinical preceptor team. 6. Clinical experts(Clinical Teaching Associates) are recognized and involved in classroom teaching in order to provide clinical role models for students.	L4

CHAPTER FOUR

DATA ANALYSIS

This chapter looked at the first three stages (data reduction, display, and comparison) of the thematic analysis of data extracted and displayed in the data matrix in chapter three.

4.1 DATA REDUCTION AND DISPLAY

The data was reduced into quantitative, qualitative, mixed-method and reports as described in Chapter Three.

4.2 DISTRIBUTION OF STUDIES INCLUDED

Clinical nursing education research publication within Sub-Saharan Africa is not uniform. There were disparities in number of research published across the East, West and Southern Africa. The following session describes the distribution in details.

4.2.1 Geographical distribution of articles included the study

Figure 4.1 below shows that the publication of articles included in this integrative review were skewed towards the Southern part of Sub-Saharan African. Thus 85.7 % of the publications are from Southern Africa, 11.9% from East Africa and 2.4% from West Africa.

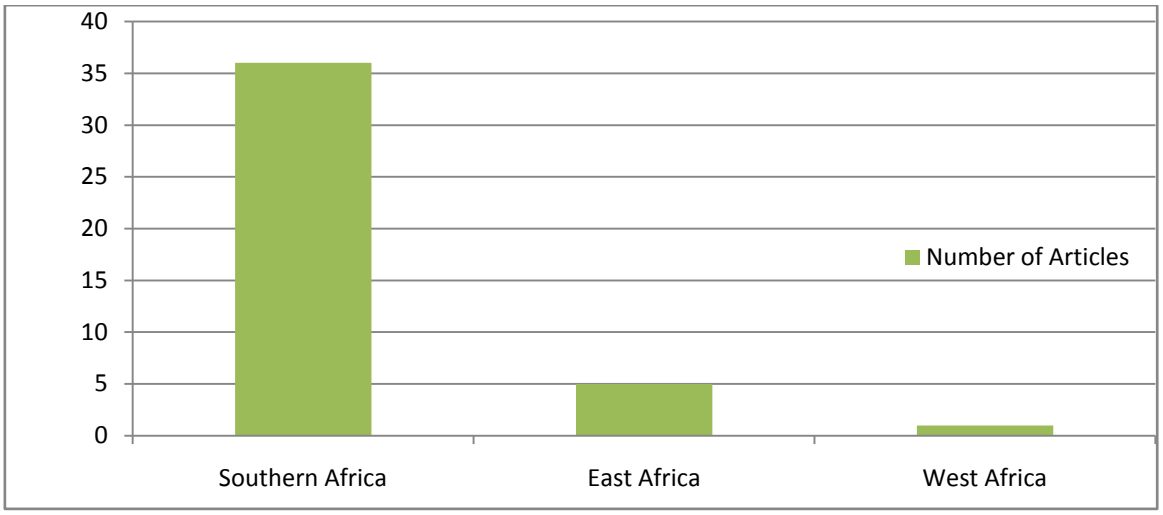


FIGURE 4.1: GEOGRAPHICAL DISTRIBUTION OF ARTICLES INCLUDED

4.2.2 Distribution of publications by year of publication

Figure 4.2 below shows that the publications dropped from six (6) in 2006 to zero (0) in 2007 and rose again until 2012. A drop in publications was evident in 2013 whereas 2014 saw a sharp increase in publications. The drop in publication in 2015 is not a true reflection of publications as this study only reviewed article up till the 30th May, 2015.There was a steady rise of publications from 2004 to 2015.

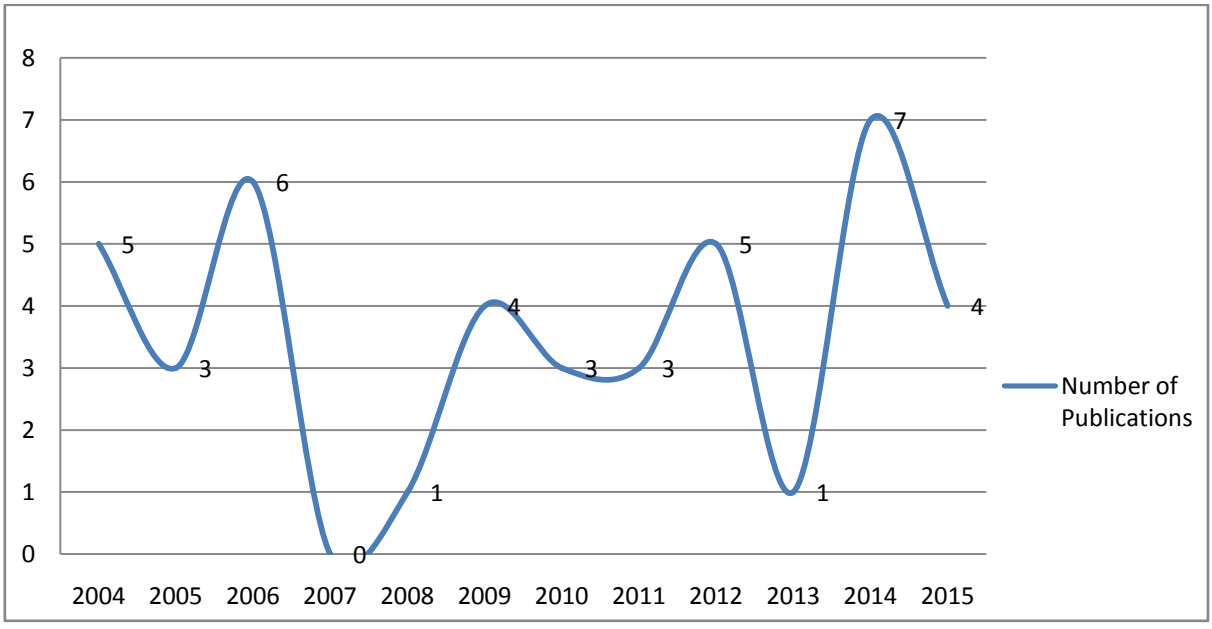


FIGURE 4.2: YEARLY DISTRIBUTION OF PUBLICATIONS

4.2.3 Distribution of articles in journals of publication

Figure 4.3 below, shows that *Curationis*, a peer reviewed journal owned by the Democratic Nursing Organisation of South Africa, has the most publications with 47.6% of articles included in this study, followed by *Health SA Gesondheid* (9.5%), *Trends in Nursing*(4.8%). Theses from the University of South Africa (4.8%), the University of Witwatersrand (2.4%), the University of Western Cape (2.4%), the University of Pretoria and the University of Western Ontario (2.4%) were also included in this study. The remaining articles were listed under *others* in figure 4.3 and consist of one (2.4%) article from each of the following journals: *Nurse Education in Practice, African Journal of Nursing and Midwifery, International Journal of Africa Nursing Science, Biomed Central, Pan African Medical Journal, Annals of Global Health, Acta Obstetricia et Gynecologica Scandinavica, International journal of Nursing Education Scholarship, International Journal of Infectious Disease and South African Nursing Council(a nursing professional body).*

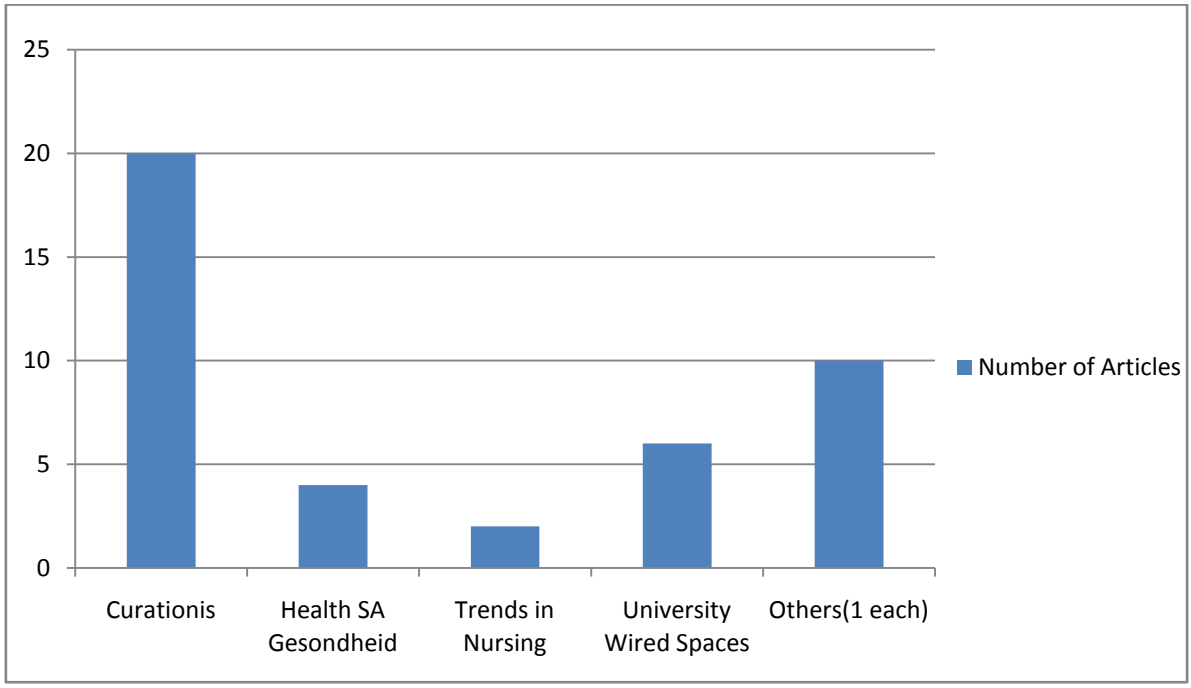


FIGURE 4.3: DISTRIBUTION OF ARTICLES IN JOURNALS OF PUBLICATION

4.2.4 Institutional author collaborations in publications

Of the 42 articles included in this study 35 (83.3%) were multi-authored whereas 16.7% of the articles were sole authored. Sole authored articles are mostly theses published by university wired spaces (see matrix in Chapter Three). Figure 4.4 below shows that, of the thirty-five (35) articles that were multi-authored, thirteen (13) were authored by authors, fourteen (14) by three authors, two (2) by four authors, none (zero) by five authors and six (6) by more than five authors.

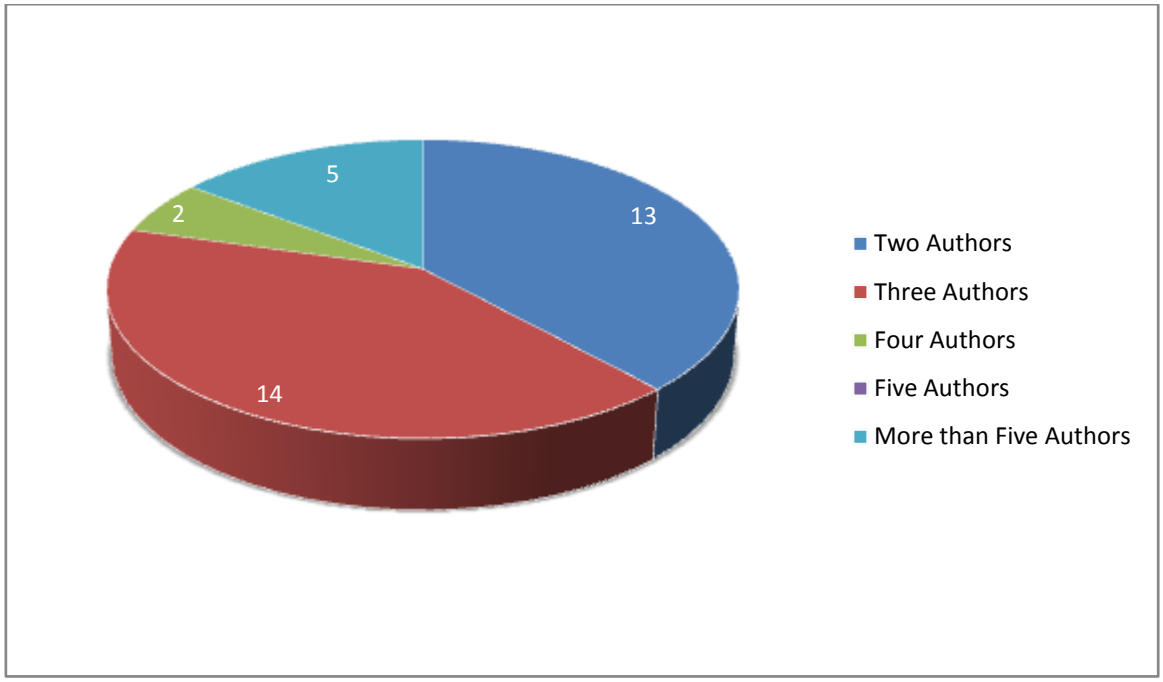


FIGURE 4.4: AUTHOR COLLABORATIONS

From Figure 4.5, out of the 35 multi-authored articles, fourteen (14) were from the same institution whereas thirteen (13) articles were published by authors from two different institutions. Two (2) articles each were published by authors from three and four different institutions whereas four (4) articles were published by authors from more than four institutions.

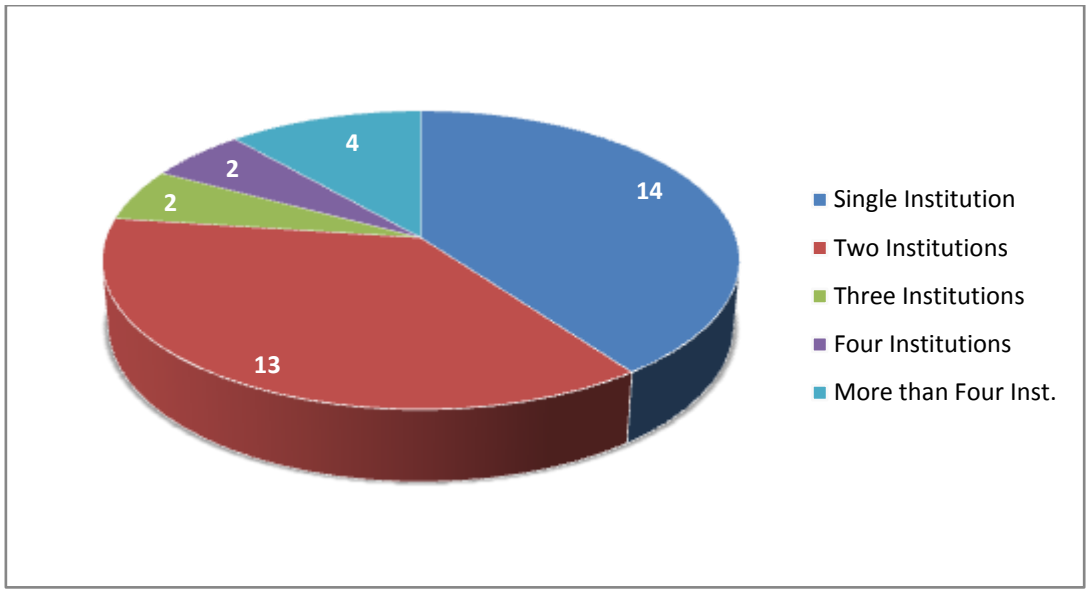


FIGURE 4.5: INSTITUTIONAL COLLABORATION IN AUTHORSHIP OF ARTICLES INCLUDED

Out of the one hundred and sixteen (116) authors that appeared on the articles included in this study, 26 were from institutions outside Sub-Saharan Africa whereas majority (90) came from Sub-Saharan Africa (see Figure 4.6)

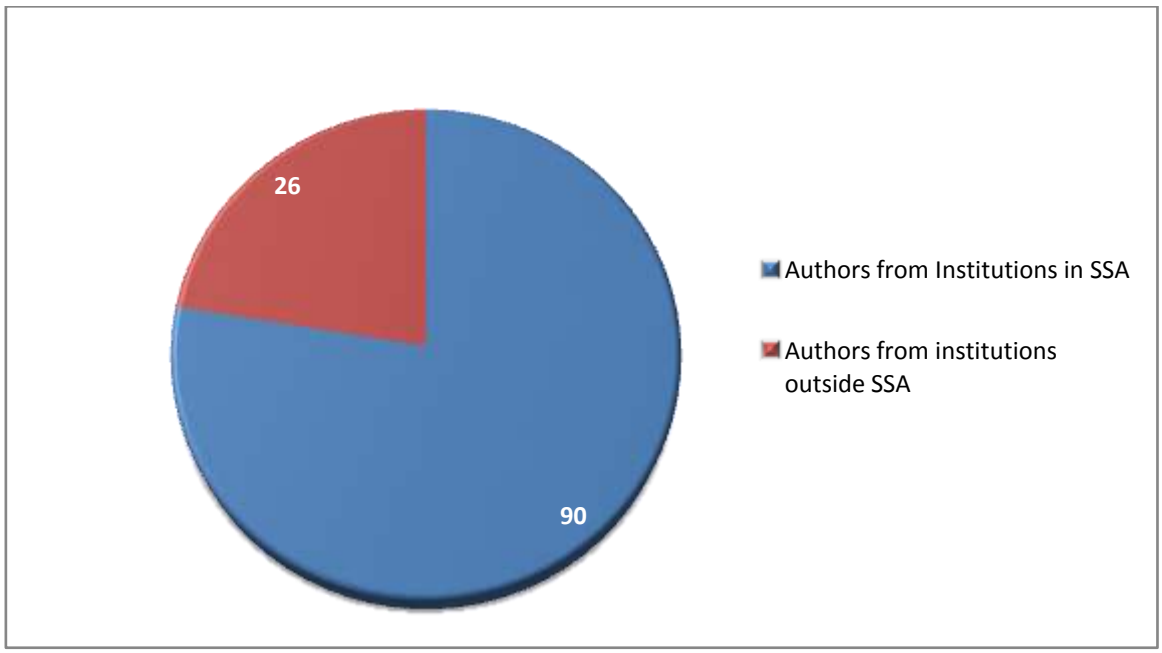


FIGURE 4.6: DISTRIBUTION OF AUTHORS

4.3 THEMES AND SUB-THEMES

Four major themes were identified from the results of this review on best clinical nursing education practices in Sub-Saharan Africa. The identified themes are:

(i) *Having a well-developed clinical education programme in place*

(ii) Synergy *between NEI and clinical facility*

(iii) *Roles of institutions, clinical instructors and students in clinical teaching and learning*

(iv) *Continuous Professional Development of clinical instructors*

TABLE 4.1: THEMES AND SUB-THEMES

The percentages in parenthesis represent the ratio of articles supporting the sub-theme out of the total number of articles included in this study.

No.	THEME	SUB-THEMES AND FREQUENCY OF OCCURRENCE
i.	Having a well-developed clinical education programme in place	1. Sequencing of theory and practica (14.3%) 2. Guidelines for clinical placement (11.9%). 3. Quality preparation of students for clinical placement (11.9%). 4. Adequate instructor/student ratio in clinical facility (9.5%) 5. Adequate time allocation for clinical placement (9.5%) 6. Clinical teaching and assessment methods (33%)
ii.	Synergy between NEI and clinical facility	1. Effective communication among NEI and clinical facility (21.4%). 2. Collaboration in recruitment of preceptors (16.7%). 3. Planning and implementing clinical placement programme together (9.5%)
iii.	Roles of institutions, clinical instructors and students in clinical teaching and learning	1. Roles of the NEI (14.3%) 2. Roles of the clinical facility (7.1%) 3. Roles of the nurse educator (16.7%) 4. Roles of the clinical nursing staff (7.1%) 5. Roles of the assigned preceptor (7.1%). 6. Roles of the students (14.3%)
iv.	Continuous Professional Development of clinical instructors	1. Organizing the Continuous Professional Development Programme (11.9%) 2. Content of Continuous professional Development Programme (23.8%) 3. Motivation for the Continuous Professional Development Programme (23.8%)

4.3.1 Theme 1: Having a well-developed clinical education programme in place

The literature reviewed in this study indicated that one of the most frequently identified best clinical education practices is the presence of a well-developed clinical education programme (77.5% of the 42 articles included). The literature divided the well-developed clinical education programme into sub-themes namely: appropriate sequencing of theory and practica (14.3%); guidelines for clinical placement (11.9%); quality preparation of students for clinical placement (11.9%); adequate instructor/student ratio in clinical facility (9.5%); adequate time allocation for clinical placement (9.5%) and clinical teaching and Assessment (33%).

The literature reviewed indicated that the educational programme should be reviewed either yearly (Jeggels et al. 2010) or three-five yearly (Department of Health 2011) to include students' feedback into the clinical nursing education programme(Van Rhyn & Gontsana 2004).

The clinical education programmes that were well managed implemented the preceptorship model with an experienced Clinical Placement Coordinator (head of the clinical education programme) managing the programme(Department of Health 2011; Jeggels et al. 2013; Mulder & Uys 2012; The Nursing Education Stakeholders Group 2012).

4.3.1.1 Appropriate sequencing of theory and practica

The sequencing of theory and practice was identified in 14.3% of the articles reviewed. Best clinical nursing education programmes should effectively link theory with practice (Department of Health 2011) with students being prepared adequately in a simulation/demonstration laboratory *before* clinical exposure (Abubu 2010; Kgafela 2013). The extracts below throw more light on the appropriate sequencing of theory and practice.

"Practica appropriately linked in time with the theory (e.g. not theory before practice...)" (The Nursing Education Stakeholders Group 2012).

"Participants identified that the basic nursing skills learned in the laboratory was useful and helped them to integrate theory and practice during clinical placements" (Abubu 2010).

"Participants also recommended that the theory/ practice gap be closed..." (Waterson et al. 2006).

Abubu (2010) and Kgafela (2013) found that simulation forms the basis of the preparation and the nurse educator in charge of simulation accompanies students in the clinical environment so that what is taught in the classroom and simulation laboratory matches with what is practiced in the clinical facility (Abubu 2010; Department of Health 2011; Kgafela 2013; Mabuda et al. 2008; The Nursing Education Stakeholders Group 2012; Waterson et al. 2006)

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies)

4.3.1.2 Guidelines for clinical accompaniment

Essential to effective clinical education in Sub-Saharan Africa is the development of guidelines for clinical accompaniment (Magobe et al. 2010; Mntambo 2009; Rikhotso et al. 2014; The Nursing Education Stakeholders Group 2012; Uys & Meyer 2005). The literature reviewed in this study indicated that five articles discussed the importance of clinical accompaniment guidelines to clinical education. The following extracts illustrate this the importance of clinical placement guidelines.

"Clinical facilitators, who accompany students in clinical practice, experience a lack of concrete guidelines that can assist them in the development of students' abilities to think

critically (Chabeli 1998:39). The researcher therefore recommended that concrete guidelines for student accompaniment in clinical practice be drawn up" (Uys & Meyer 2005)**.**

"The main ideas focused on the formulation of guidelines that emphasised the education and training required by all responsible for achieving the objectives of clinical accompaniment" (Mntambo 2009).

"…,will result in effective instruction guidelines in terms of developing students" clinical competencies" (Magobe et al. 2010).

"Proposed guidelines have been formulated for clinical guidance and support of nursing students at the selected rural hospital" (Rikhotso et al. 2014).

Guidelines help the NEI and the clinical facility to work together towards achieving student objectives and goals while in the clinical area. These guidelines also serve as standards against which the performance of the NEI, clinical facility and the clinical instructors are evaluated.

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies)

4.2.1.3 Quality Preparation of Students for Clinical Placement

Eleven percent (11.9%) of articles included in this study corroborated the importance of student preparation prior to clinical placement.

*"**Students should be better prepared prior to clinical postings....."*** (Eta et al. 2011).

"It is recommended that first-year nursing student need to be well prepared for their clinical placement". ".....they should be encouraged to make use of the opportunities to practice basic nursing skills prior to their placement in the hospital" (Abubu 2010).

Simulation is the way of preparing students for clinical practice (Department of Health 2011; Tyer-Viola et al. 2012; Uys et al. 2014). In Mulder and Uys (2012), all eleven of the universities studied use simulation (imitation or enactment of a potential situation) to varying degrees in preparing students for clinical placement. The Department of Health (2011) stated that:

> ***"Preparation for clinical practica is based on simulation and this may form part of the proportion allocated to clinical practice for learning"***(Department of Health 2011).

Repeating simulation situations and giving students enough opportunity to practice improves their learning and decision making in the clinical environment (Tyer-Viola et al. 2012). The extract below highlights this concept.

> ***"Repeating simulation scenarios and improving faculty use of debriefing on what elements are most important may help students to move towards collecting context dependent data to form judgments in real situations"*** (Tyer-Viola et al. 2012).

The studies resulting in this sub-theme range from level 3(quasi-experimental studies) to level 4 (evidence from descriptive/ non-experimental studies).

4.2.1.4 Adequate Instructor / Student Ratio in the Clinical Environment

Four articles indicated that adequate student /clinical instructor ratio is vital for clinical nursing education. The shortage of nurses and nurse educators in the Sub-Saharan Africa resulted in a higher student /preceptor ratio in clinical education programmes compared to published ratios (Appiagyei et al. 2014; Department of Health 2011; Dube & Jooste 2006; Kgafela 2013). As to what the ideal clinical instructor/student ratios are, there are variations in the evidence provided in the extracts below.

"International norms suggest groups of not greater than 15 and ideally teacher to student ratios of 1:10 for pre-registration clinical training and supervision" (Department of Health 2011).

"Comparatively, an ideal ratio of 15:1 would assist the nurse educators in addressing the individual needs of students (Kgafela 2013)**.**

"None of the institutions interviewed had the optimum faculty-to-student ratio of 1:10, recommended by the NCK" (Appiagyei et al. 2014). ***Note:*** *NCK (National Council of Kenya).*

The results in Table 2 show that individual preceptors accompanied from two to 23 students, although most authors advocate a ratio of 1:1" (Dube & Jooste 2006).

The clinical instructor / student ratio in clinical placement ranges from **1:8** (Dube & Jooste 2006) to **1:15-20**(Department of Health 2011), to **1:30** (Kgafela 2013)and **1:(10** or**15** or **42)** (Appiagyei et al. 2014).

The literature included in this study determined that on the average, clinical education programmes in Sub-Saharan Africa allocate 19 students to a single clinical instructor. This is a heavy workload compared to the *ideal* instructor-to-student ratio as stated in the narratives above.

More favourable clinical instructor/ student ratios would however produce the best opportunity for student learning, but the issues of shortages of clinical instructors and increased student enrolments into NEI's in Sub-Saharan Africa (Julie et al. 2015) do not facilitate the favourable instructor/student ratios. However, the literature recommends increasing nursing staff and nurse educator recruitment and training (Appiagyei et al. 2014; Mulder & Uys 2012; Thuss 2014) to reduce the ratio based on student feedbacks (Dube &Jooste 2006; Eta et al. 2011). Appiagyei et al. (2014) reccomended that:

"Interventions should also improve the recruitment and retention of faculty, enhance their access to CPD and provide space for didactic instruction. These investments will support not only an increased quantity of new students, but also the quality of their pre-service education" (Appiagyei et al. 2014).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.1.5 Adequate Time Allocated for Clinical Placement

Allocation of time for clinical placement is one of the difficulties of clinical nursing education programmes in Sub-Saharan Africa as students continually seek more time for clinical placement (Kgafela 2013; Mntambo 2009; Van Rhyn & Gontsana 2004). The review shows that 9.5% of the articles support the importance of adequate allocation of time for clinical placement in order to develop competent and practice ready nurse in Sub-Saharan Africa. This is elaborated below:

"The number of credits in a four-year professional programme is usually about 480 (or 120 credits per annum) and reflects 4800 notional hours of student learning. If one accepts about 3500 hours as the usual number of hours for clinical practice, the clinical teaching model suggests that role-taking practice (WIL) should comprise 40% of the total clinical practice, or 1400 hours. In most schools it is probably significantly higher. However, schools will have to become more accustomed to calculating such proportions, and ensure that their programme falls within the curriculum guidelines" (Mulder & Uys 2012).

"The participants spent approximately 4500 hours of their training in the CLE" (Kgafela 2013).

Four thousand five hundred (4500) hours which constitutes 51.2% of the year has been allocated for clinical placement (Kgafela 2013). The Department of Health's (2011) policy

on clinical education obligates nursing NEI's to allocate a minimum of 50% of the academic year to clinical nursing education whereas 20% of what is allocated for clinical education is used for clinical placement for simulations. The extract below supports the statement above.

*"**Similarly, a ratio of theory to practica that does not undermine the practice base of nursing is vitally important for the preparation of competent nursing professionals. It is therefore recommended that a minimum of 50% of a nursing curriculum be attributed to integrated practica"*** (Department of Health 2011).

More time for clinical placement is, therefore, important in nursing education as nursing is a practice based profession (Cassimjee et al. 2006; Eta et al. 2011; Kgafela 2013; Mntambo 2009; Van Rhyn & Gontsana 2004).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies)

4.2.1.6 Clinical Teaching and Assessment

Clinical teaching and assessment is essential to clinical nursing (Twentyman et al. 2006). The review indicated that 38.0% of the articles included, established the importance of clinical teaching and assessment to clinical nursing education. Various teaching and assessment methods are used in clinical education programmes in Sub-Saharan Africa. Notable among these are: peer group teaching, simulation, patient case studies and presentations, problem based learning, role plays, game and video based learning (Abubu 2010; Brysiewicz & Lee 2009; Chabeli & Muller 2004; Cloete & Jeggels 2014; Lekhuleni et al. 2004; Monareng et al. 2009; Mulder & Uys 2012; Nilsson et al. 2014). Other practices that enhance student learning are clinical conferences, ward rounds and self-directed learning contracts (Chabeli & Muller 2004).

Peer group teaching and guidance is an emerging practice in Sub-Saharan Africa. In peer teaching programmes, senior nursing students support their juniors in clinical simulation laboratories and in the clinical facility (Abubu 2010; Chabeli & Muller 2004; Msiska et al. 2014; Uys & Meyer 2005). Peer teaching fosters good student relation and builds confidence in the senior students (Du Plessis 2004). It therefore helps prepare them for clinical teaching post registration. It allows the junior students to practice and learn in an environment that is friendly and less stressful (Du Plessis 2004).

Simulation is a common clinical education practice in Sub-Saharan Africa. It allows students the opportunity to make mistakes without causing harm to a patient. Simulation increases students satisfaction with learning (Tyer-Viola et al. 2012). Repeating simulated situations improves student learning (Tyer-Viola et al. 2012). Debriefing patient scenarios and care with the students enables them to reflect on their activities to develop critical thinking (Tyer-Viola et al. 2012).

Case presentations are also part of clinical assessment (Uys & Meyer 2005). The nine step patient case study and presentation process makes the case study comprehensive and effective in students' learning (Brysiewicz & Lee 2009). These stages are presented in the extract below.

a. ***"Present a brief description of patient***
b. ***Allow students in your group to pose hypotheses about the possible problems of patient***
c. ***Allow students to ask you data-based questions on these hypotheses***
d. ***Facilitate formulation of revised problem list***
e. ***Allow students to ask more questions***
f. ***Determine if you need additional information***

g. ***Present your list of interventions and rationale for students***

h. ***Determine what data you need to collect to see if the problem was reduced or eliminated***

i. ***In what other clinical situations might this information be useful"*** (Brysiewicz & Lee 2009).

Reflective journals, reflective tutorials and critical incident techniques are clinical teaching and evaluation methods used in a well-developed clinical education programme (Chabeli & Muller 2004). Debriefing of students or continuous feedback from a clinical instructor, as well as students' reflection on the care they provided helps bridge the theory-practice gap by giving the student opportunities to reflect on daily activities and adapt to positive behviours (Abubu 2010; Chabeli & Muller 2004; Uys & Meyer 2005).

Five articles stated the importance of clinical assessment in clinical education. Regular forms of assessment are needed in clinical education (Nxumalo 2011). Direct observation, interviews, self assessment, poster presentation and workbooks are used in assessing students progress and competence (Chabeli & Muller 2004). Prominent among these modes of clinical assessment is Objective Structured Clinical Examination (OSCE) (Chabeli & Muller 2004; Jeggels et al. 2010; Msiska et al. 2014; Nxumalo 2011; Uys et al. 2014).

The studies resulting in this sub-theme ranges from level 2(experimental studies) to level 4 (evidence from descriptive/ non-experimental studies), with Level 4 being the majority.

4.2.2 Theme 2: Synergy between the NEI and the clinical facility

A synergistic relationship between the NEI and the clinical facility is another clinical education practice in Sub-Saharan Africa. The results (22 articles)of this integrative literature review indicated the benefits of synergic collaboration between the NEI and the

clinical facility. Three sub-themes were identified, namely: planning and implantation of placement programme together (9.5%); recruitment of preceptors (16.7%) and effective communication among NEI and clinical facility (21.4%). With nursing education moving into higher education, it is a common practice for nursing education institutions to include leaders from the clinical facility and their staff in planning and implementation of clinical education programmes (Magobe et al. 2010).Without clinical facility involvement, it would be difficult, if not impossible, to implement clinical education programmes. The extracts below substantiate this claim.

"The researchers recommend establishing structured, collaborative relationships and formal partnerships between the PHC clinical practice field and the university. This is to ensure that clinical care and educational outcomes are achieved, including quality control in terms of proper qualifications, recognition and incentives for clinical instructor and preceptors in the PHC clinical practice field" (Magobe et al. 2010). **Note:** PHC (Primary Health Care)

"The college and hospital management should foster collaboration between the college tutors and professional nurses to ensure adequate guidance and support of nursing students" (Rikhotso et al. 2014).

"It is recommended that Malawian nursing faculty should collaborate with various unit matrons and ward sisters and encourage them to motivate clinical nurses to take a positive stance in teaching students" (Msiska et al. 2014).

"Other suggestions were designed to improve relationships between individuals and between the nursing colleges and the various hospital departments to which the student nurses were assigned" (Mntambo 2009).

4.2.2.1 Planning and implementation of placement programme together

The resources within the clinical facility are under the control and legal authority of the hospital management. The NEI only partners the clinical facility to take advantage of their resources in training the students whereas the clinical facility benefits from employing the graduates of that training (Magobe et al. 2010; Mntambo 2009). For the smooth implementation of the clinical education programme, the NEI must involve the clinical facility in the planning and the implementation of the programme(Department of Health 2011).

Of the articles reviewed, 9.5% of the articles confirmed the importance of planning and implementation of clinical education programmes together. Because each clinical facility is often used by several NEI's and access to the facility is granted by the management of the facility, it is beneficial for both parties to plan the clinical placement programme collaboratively (Jeggels et al. 2013). Best clinical nursing education programmes in Sub-Saharan Africa were planned by the nurse managers of the clinical facility and the NEI (Department of Health 2011;Mntambo 2009). Implementation of these clinical nursing education programmes includes holding preceptor –student meetings to assess students' needs at the beginning of placement (Monareng et al. 2009).This has been cited in the quotations below:

"Allocation for clinical practica must be planned jointly between designated academics/nurse educators from the NEI/HEI and the CPC in the services in a manner that shows programme coherence, continuity and vertical integration of knowledge and skills" (Department of Health 2011).

"The academic institution (the nursing college) and the hospital should agree to a joint model that will serve as a master plan for the practice of student nurse accompaniment in clinical settings" (Mntambo 2009)***.***

"This continuing education course has strengthened the relationship between the SoN and the PGWC. It is envisaged that a preceptorship model be developed from this partnership that will enhance the clinical training of students and delivery of services to the consumers of health care" (Jeggels et al. 2013).**Note*:*** PGWC-Provincial Government of the Western Cape; SoN-School of Nursing.

"Thus the education and services that are provided during the course of in-house hospital training, should be jointly planned by the authorities of the hospital and the colleges concerned" (Mntambo 2009).

The studies resulting in this sub-theme range from level 3(quasi-experimental studies) to level 4 (evidence from descriptive/ non-experimental studies).

4.2.2.2 Collaboration in recruitment of preceptors

Nine (9) articles described the recruitment of preceptors as a collaborative process between the NEI and the clinical facility. The appointment of preceptors is one of the major areas where the NEI collaborates with the clinical facility. This is explicitly stated in the extract below**:**

"Collaborate with healthcare institutions to identify and appoint appropriate clinical preceptors" (Mulder & Uys. 2012).

Nurses who meet the required qualification to be preceptors and are willing to take up the post are recruited and trained by the NEI in collaboration with the clinical facility

management (Joubert & De Villiers 2015; Magobe et al. 2010; De Villiers et al. 2004; Thuss 2014). Cloete & Jeggels (2014) stated this clearly in their study as quoted below:

"It is proposed that mainly those professional nurses who show an interest in preceptorship, who have appropriate clinical experiences and who show willingness to the preceptor role, be selected for preceptor training" (Cloete & Jeggels 2014)

"Obviously, recruitment of quality preceptors for students is essential, and providing them with clear expectations, guidelines, and tools to assist them in this process, should make precepting any nursing student, an enjoyable, fulfilling part of their responsibility to the profession" (Nxumalo 2011).

Nurses who were trained in the same nursing qualification programmes in which the students are being trained tend to have good teaching and learning relationship with students therefore make good preceptors (Msiska et al. 2014; Rikhotso et al. 2014). Refresher courses for preceptors trained in previous (lower) nursing qualification programmes assists them to cope with students from new programmes (Uys & Meyer 2005) as stated in the quotation below:

"The researcher therefore recommended that a training course be offered that could fill this void. Such a course could take the format of a refresher course for clinical facilitators who were trained before OBE was instituted" (Uys & Meyer 2005).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.2.3 Effective communication among NEI and Clinical Facility

Eleven articles (making 26.9% of articles included) corroborated the importance of effective communication among the NEI and the clinical facility. Effective communication

among the NEI and the clinical facility is essential for clinical education programmes to be planned and implemented jointly by the two institutions(Department of Health 2011; Jeggels et al. 2013; Kgafela 2013; Lekhuleni et al. 2004; Mntambo 2009). A two-way communication between the NEI and the clinical facility with an assigned preceptor to serve as a link- person between each unit and the NEI makes communication effective (L. a Murathi et al. 2005).

This is illustrated in the extracts below:

"Communication between the nursing college and clinical area should be encouraged in order to address such concerns as those raised by the student nurses relating to the negative attitude of ward staff and their lack of interest in teaching student nurses. Bilateral regular meetings should be planned in advance by the nursing college and clinical area" (Nxumalo 2011).

"The campus should open a means of two-way communication with the clinical units to curb the misinformation delivered to unit managers by students; holding regular meetings with unit managers to discuss some of the problems that occur in the units will promote harmony between the campus and the clinical area" (Murathi et al. 2005).

The importance of learning objectives and outcomes being clearly communicated to all the nursing staff in the clinical facility is to avoid role conflicts and align teaching opportunities at the level of the students (Mabuda et al. 2008; Lekhuleni et al. 2004; Van Rhyn & Gontsana 2004). Communicating the learning objectives clearly will enable every nurse involved in the clinical education process to know their roles and responsibilities which prevents them from either duplication or omission of roles and responsibilities as stated in these quotations below.

"The unit teaching programme should also be known to the teaching staff to avoid clashes between programmes; this will improve consultation for both parties" (Murathi et al. 2005).

"The learning outcomes of the students should be clearly communicated to the professional nurses, so that students are delegated tasks within their scope of practice" (Kgafela 2013).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3 Theme 3: Roles of institutions, clinical instructors and students in clinical teaching and learning

Nineteen articles (42.2% of included articles) indicated the roles of institutions, clinical instructors and students as vital components of clinical education programmes. The best clinical education programmes in Sub-Saharan Africa delineates the obligations of institutions, individuals and groups involved in the development and implementation of the clinical education programme (Cassimjee et al. 2006; Department of Health 2011; Lekhuleni et al. 2004; Thuss 2014).Roles of all clinical instructors, the nurse educators and clinical facility should clearly be defined and communicated carefully to avoid role conflicts (Cassimjee et al. 2006; Department of Health 2011; Lekhuleni et al. 2004; Thuss 2014).

4.2.3.1 Roles of the NEI

Out of the 42 articles reviewed, 6 indicated the roles of the NEI in clinical teaching and learning. The nursing education institution has the responsibility to recruit, motivate and offer opportunities for continuous professional education for clinical instructors and nurse

educators (Abubu 2010; Du Plessis 2004; Kachiwala 2006). This is illustrated in the narratives below:

"In the UWC study the clinical supervisors are the university employees who teach and guide students in the skills lab and as well as in the clinical placement setting" (Abubu 2010).Note: UWC (University of Western Cape)

"Relevant seminars and workshops should be planned and conducted on a regular and continuous basis to re-orientate professional nurses who are already serving as preceptors and to prepare those who are prospective preceptors for the new role. The focus should be on the essential characteristics of a preceptor" (Dube & Jooste 2006).

"Nursing education and practice should ensure that preceptors are provided with the necessary training, support, and resources to help them plan learning opportunities in accordance with preceptorship objectives and expectations" (Monareng et al. 2009).

Appointment, orientation and continuous professional development of preceptors in the clinical unit is a joint responsibility of the NEI and the clinical facility (Dube & Jooste 2006). Other roles of the NEI include the championing of the development, implementation and evaluation of the programmes. The NEI also ensures that the students are placed in only certain clinical facilities with quality practice culture (The Nursing Education Stakeholders Group 2012).

The NEI also plays the critical role of providing some essential resources need for the clinical education programme. A good and efficient transport system should be made available by the NEI to facilitate students' movement from the NEI to the clinical facility and back (Kgafela 2013). It also makes money available for the remuneration of the clinical preceptors as stated in the narratives below:

"Students should be provided and assisted with transport from their institution residence to hospital" (Kgafela 2013).

"Clinical Preceptors should be paid by and report to the NEI" (The Nursing Education Stakeholders Group 2012).

"The financial incentive for contract tutors should continue as it motivates them to prepare better for each session, as it is regarded as a business transaction"(Du Plessis 2004).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3.2 Roles of the clinical facility

The role of the clinical facility in teaching is discussed in 7.1% of the articles included in this study. The clinical facility is obliged to contribute preceptors and clinical teaching associates (clinical experts who are given honorary teaching appointments) (The Nursing Education Stakeholders Group 2012). Clinical teaching associates are provided by the clinical facility to augment the work of the academic staff (The Nursing Education Stakeholders Group 2012).The facility provides discussion room for preceptor-student meetings and clinical conferences (Kgafela 2013). The clinical facility ensures that clinical practices are based on best practices and their staff are up-to-date with those practices (Magobe et al. 2010).

"It is also recommended that managers maintain quality patient care in the PHC clinical practice field by ensuring the availability of continuing education and that PCNs attend these sessions in order to have and maintain up-to-date clinical knowledge and skill in clinical protocols" (Magobe et al. 2010).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3.3 Roles of the nurse educator

Seven (7) out of forty-two (42) articles reviewed indicated that nurse educators' play an important role in clinical teaching and learning. Nurse educators should not remain in the classroom but should accompany students to the clinical facility.

Nurse educators are seen as an essential clinical instructors (Dube & Jooste 2006; Kachiwala 2006; Kgafela 2013; Lekhuleni et al. 2004; Nxumalo 2011) as they are essential in bridging the theory practice gap (Kgafela 2013) and are therefore expected to remain clinically competent (Mulder & Uys 2012; The Nursing Education Stakeholders Group 2012). Nurse educators are assigned to a specific clinical unit (Kachiwala 2006) as well as being available to the students on a daily basis (Kgafela 2013). The narratives below substantiate the results above:

"Academic staff are expected to remain clinically competent in their field of specialization and, to do this, they are expected to do some clinical practice (work, not clinical supervision) every year, and to spend some of their sabbatical time in the clinical field" (Mulder & Uys 2012).

"It can be concluded therefore that the presence of the nurse teacher in the clinical environment can help to check whether the students are doing the correct things or find out if some of the practices have changed and therefore different from what is in the curriculum" (Kachiwala 2006).

"There should be a nurse educator at the CLE on a daily basis to meet the needs of the students" (Kgafela 2013). **Note:** CLE (Clinical Learning Environment)

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3.4 Roles of the clinical nursing staff

Registered nurses play a fundamental role in clinical education as they serve as the population from which the clinical instructor (preceptors, the clinical facilitators, clinical mentors) and clinical teaching associates are recruited (Löfmark & Thorell-Ekstrand 2010). Three (3) articles confirmed the essential roles that nursing staff play in clinical teaching and learning. Registered nurses have clinical teaching responsibilities (Löfmark & Thorell-Ekstrand 2010) and therefore should make themselves available for supervised student practice (Mulder & Uys 2012) under the leadership of the unit manager who is an expert clinical instructor (Mntambo 2009). The narratives below supported the result above:

"Results from this study showed that staff nurses are resources in the clinical education and very well aware of their responsibility in the clinical education But they obviously need more information and attention from the faculty" (Löfmark & Thorell-Ekstrand 2010).

"A greater use should be made of professional nurses who are able to serve as clinical instructor. Such professional nurses should also be employed on a part-time basis by the academic institution at which the student nurses are registered" (Mntambo 2009)

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3.5 Roles of the assigned preceptor

Three (3) articles expounded the roles of the assigned preceptor in clinical teaching and learning. The preceptor serves as a mentor, role model and an advocate to the student (Cloete & Jeggels 2014), as quoted below:

"Most participants in this study (90.3% or n = 37) agreed they were inspired to perform their very best in the role of nurse preceptor, whereas..." (Cloete& Jeggels 2014).**Note:** participants = preceptors

The preceptor accesses students individual needs (Lekalakala-Mokgele & Caka 2015) and shows willingness and commitment in helping the students meet their individual needs (Cloete & Jeggels 2014; Dube & Jooste 2006).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.3.6 Roles of the students

The student as the primary client for clinical education (Armstrong et al. 2015) also has a part to play in her or his training. Six (6) articles out of the 42 included in this study indicated student roles in their clinical learning. As clinical teaching is student directed (Lekalakala-Mokgele & Caka 2015), students should take responsibility for their own learning (Lekhuleni et al. 2004) in the nursing education programmes in Sub-Saharan Africa (see narrative below).

"The Case-based clinical reasoning approach to learning that has been implemented at the school promotes competence and self confidence in learners. It has enhanced a sense of responsibility among learners to be actively involved in their own learning. It also promotes collaborative learning as learners work in groups to solve complicated problems, like they would in a real clinical situation"(Le Roux & Khanyile 2011).

"Enthusiastic facilitators will convey the same enthusiasm to the learners and make their teaching lively and interesting. This motivates the learners to want to be like the facilitator and thus take responsibility for their own learning, to be self-directed, self-monitoring and self- regulating….Learning contracts can be used for final- year students because they have grown in the profession and can take responsibility and ownership for their independent learning and clinical judgment" (Chabeli & Muller 2004).

Students are however motivated by role models in the clinical facility (Abubu 2010). An emerging and interesting role of the student in the clinical education programmes in the Sub-Saharan Africa is peer group teaching and support (Abubu 2010; Chabeli & Muller 2004; Du Plessis 2004; Msiska et al. 2014).The students view peer teaching as an emerging, an interesting and less threatening teaching method. The senior students have the opportunity to provide the junior ones with the necessary learning opportunities while the senior students simultaneously master their skills through teaching others (Abubu 2010; Chabeli & Muller 2004; Du Plessis 2004). In Chabeli & Muller (2004), a participant (student) stated that: "Peer group teaching is good but is not commonly used. Students become free in expressing their mind and how they feel". Peer group teaching is used in exploration and clarification of ideas, problem solving, generating student interest in the topic under discussion and also to assess students comprehensively (Chabeli & Muller 2004). Du Plessis (2004)recommended that "peer group guidance be implemented as a permanently with annual revision".

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.4 Theme 4: Continuous Professional Development (CPD) of Clinical Instructors

Fourteen (16) articles in this integrated literature review demonstrate the importance of Continuous Professional Development of the clinical instructors in clinical education programmes. In an ever-changing world of nursing practice and the advent of Evidence-Based practice, it is essential that recruited nurses and nurse educators are given the opportunity for lifelong professional learning (Uys & Meyer 2005).Three key sub-themes were identified and described with regards to the CPD of the clinical instructors, namely: *organizing the Continuous Professional Development Programme; content of continuous professional development programme; and the motivation for the continuous professional development programme.*

4.2.4.1 Organizing the continuous professional development programme

Five articles included in this study indicated how the CPD should be organized. It was stated that a formalized clinical practice period should be created within the nursing education programme to allow the academics to have continuous clinical practice to keep them up-to-date with new practices and ward policies (Mulder & Uys 2012). The extract below supports the paragraph above.

> ***"Create and formalize time periods, for instance in the academic recess, to allow academics to engage and / or work in clinical healthcare institutions"*** (Mulder & Uys 2012).

Continuous professional development is not a once-off programme but an ongoing programme based on individual, institutional or national needs (Löfmark & Thorell-Ekstrand 2010) and consist of workshops, seminars and short programmes (Jeggels et al. 2013; Monareng et al. 2009; Mulder & Uys 2012).

"Relevant seminars and workshops should be planned and conducted on a regular and continuous basis to re-orientate professional nurses who are already serving as preceptors and to prepare those who are prospective preceptors for the new role. The focus should be on the essential characteristics of a preceptor" (Dube & Jooste 2006).

"Develop short learning programs to develop the knowledge and skills of professional nurses" (Mulder & Uys 2012).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.4.2 Content of continuous professional development programme

Ten (10) articles included in this study related to the recommended content of the continuous development programme.

Various authors (Appiagyei et al. 2014; Cloete & Jeggels 2014; Joubert & De Villiers 2015; Magobe et al. 2010; Monareng et al. 2009; Mulder & Uys 2012) have stated best clinical practices, mentoring, and supervision for the clinical preceptors and academics as the content of the CPD. Other researchers (Dube& Jooste 2006; Löfmark & Thorell-Ekstrand 2010; Mulder & Uys 2012) also highlighted best practices, clinical teaching, leadership and preceptorship as very important contents of CPD in the Sub-Saharan Africa. The following narratives support the paragraph above.

"In-service training of teaching staff should be undertaken on various teaching approaches that stimulate critical thinking and reflective learning in learners, in order to improve nursing competence"(Le Roux & Khanyile 2011).

Organize clinical skill workshops integrating the best practices into clinical teaching (Mulder & Uys 2012)**.**

"Leadership development courses are a prerequisite for effective preceptorship" (Dube & Jooste 2006).

"The researcher therefore recommended that a training course be offered that could fill this void. Such a course could take the format of a refresher course for clinical facilitators who were trained before OBE was instituted" (Uys et al. 2005).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.2.4.3 Motivation for the continuous professional development programme

Ten articles included in this study expressed what motivates the clinical instructors to engage in continuous professional development. Institutional (employer) policies on continuous professional development motivates clinical instructors to participate in CPD(Julie et al. 2015; Le Roux & Khanyile 2011; Mulder & Uys 2012; The Nursing Education Stakeholders Group 2012). The extracts below substantiate the above statements.

"Also, clinical nurse educators need to be kept up-to-date in nursing practice and teaching skills in order for them to adequately coach, guide, supervise and assess student nurses on clinical placements" (Eta et al. 2011).

The level of institutional support influences the clinical instructors' commitment to the CPD programme. Supported preceptors tend to be more committed to teaching than those who do not receive support from their institutions (Cloete & Jeggels 2014). The experienced nurse educators are also expected to provide educational support for the clinical instructors as stated in the narrative below.

"Nursing faculty should also provide educational support to clinical nursing staff to enable them to effectively support student learning" (Msiska et al. 2014).

CPD offer clinical instructors the ability support the student to meet their clinical objectives effectively (Appiagyei et al. 2014; Eta et al. 2011; Holman et al. 2015; Magobe et al. 2010).

The studies resulting in this sub-theme were all of level 4 (evidence from descriptive/ non-experimental studies).

4.4 CONCLUSION

The themes emanating from the literature on best clinical nursing education practices in Sub-Saharan Africa have been described in this chapter. The next chapter will discuss the findings of this review and draw conclusions and recommendations from it.

CHAPTER FIVE

DISCUSSION AND INTERPRETATION, CONCLUSION ANDRECOMMENDATIONS

In this chapter, the results of integrative literature review are discussed. This will include summaries of findings and how they met the research objectives in order to answer the research question so as to fulfill the purpose of this study. Implications of the study with regards to practice, future research, and clinical nursing education in the Sub-Saharan Africa were also addressed in this chapter. Limitations of this study were discussed. The conclusion of the study is also presented.

5.1 DISCUSSIONS AND INTERPRETATION

The purpose of this research was to conduct an integrative literature review to critically evaluate available literature on the best clinical nursing education practices in Sub-Saharan Africa, to provide the best evidence in developing and implementing clinical nursing education curricula in Sub-Saharan Africa through the critical analysis of the finding from the review. The study was conducted with the research question: 'What are the best clinical nursing education practices in Sub-Saharan Africa?' in mind.

5.1.1 Review and critical analyses of available literature on clinical nursing education practices in Sub-Saharan Africa

The articles included in this study are of mixed quality. The quantitative studies reviewed ranges from Level 2 Grade 2B to Level 4 Grade 3B (Maree & Schmollgruber 2014; De Souza & Carvalho 2010). Qualitative studies on the other hand were all of Level 4 QI (good quality) (Maree & Schmollgruber 2014; De Souza & Carvalho 2010). Mixed method studies and reports included in this study are at evidence rating Level 4 which is evidence from descriptive (non-experimental) studies or with a qualitative approach' (De Souza & Carvalho 2010).Contrary to the general notion that nursing research is predominantly

qualitative with weak evidence, there were only one more qualitative articles than quantitative articles included in this study.

The bias of the articles to the southern African sub-region of the Sub-Saharan Africa shows the weak state of publication from the Western and the Eastern parts of Africa. This makes the applicability of the findings in this study questionable in terms of its relevance to East and West Africa. Publications in clinical nursing education are rising steadily in Sub-Saharan Africa. This is a good sign for professional scholarship and nursing autonomy within the SSA. There is good collaboration between scholars and institutions in publications within the SSA. These collaborations enable sharing of knowledge, expertise and resources within the region.

There was some collaboration between scholars from clinical facilities and nursing education institutions-this relationship is significant in improving the clinical nursing education practices within the region.

These articles were helpful in describing the best clinical nursing education practices in Sub-Saharan Africa.

5.1.2 Description of the best clinical education practices in Sub-Saharan Africa based on available literature

From the findings of the study, best clinical nursing education practices in Sub-Saharan Africa can be divided into the three phases: *before clinical placement, during clinical placement* and *after clinical placement* (Figure 5.1).

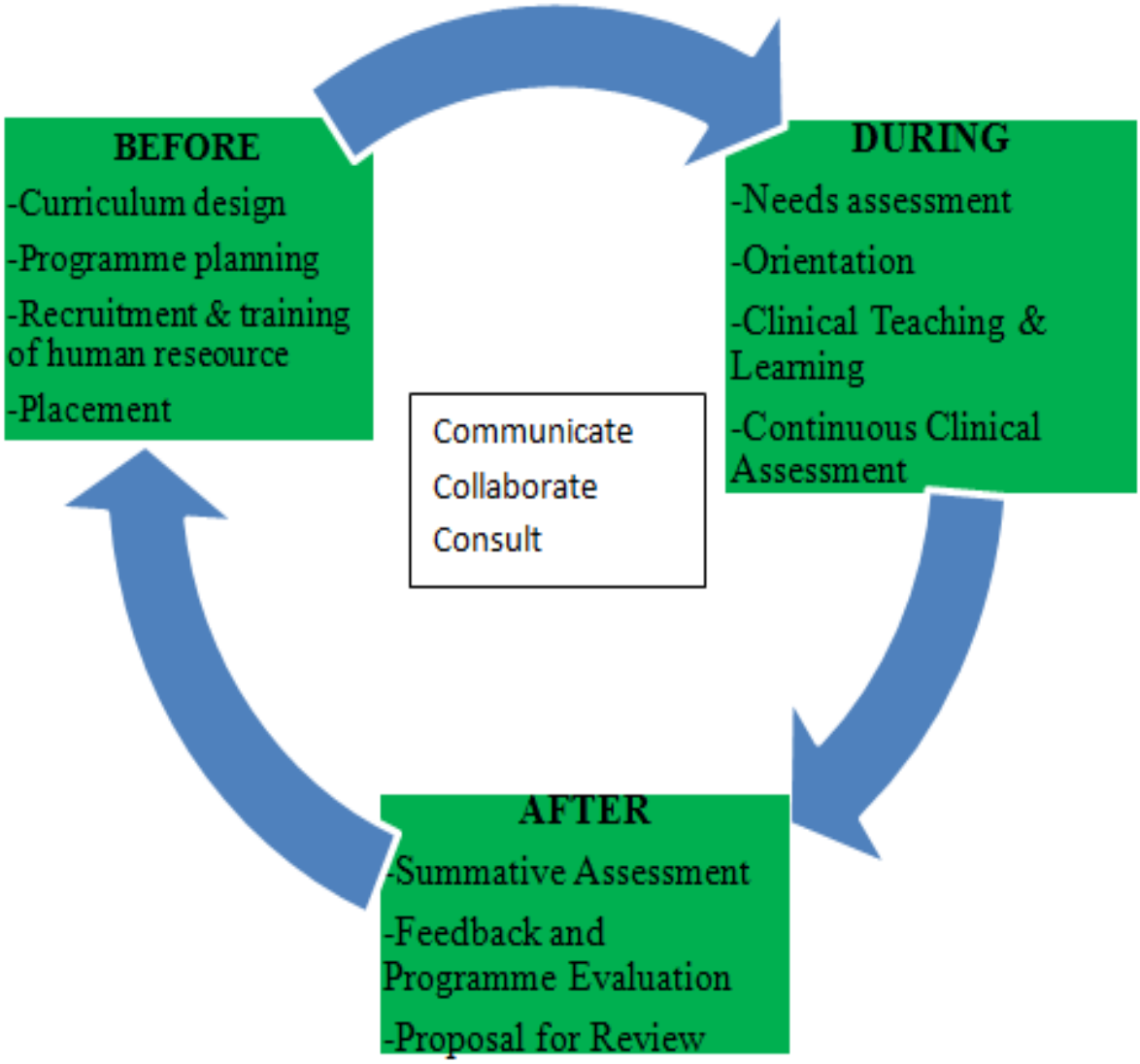


FIGURE 5.1: BEST CLINICAL NURSING EDUCATION PRACTICES IN SSA

5.1.3 Before placement

a. There should be a well-developed programme based on research, contextual experience and tailored towards the job description of the category of nurses being trained.

b. The programme should sequence theory and practice effectively and allocate enough time (between 3500 and 4500 hours per year) for clinical placement.

c. Guidelines should be developed for clinical accompaniment, defining the roles of the NEI, the clinical facility, clinical instructors, and the students.

d. Students should be adequately prepared for clinical placement using demonstrations, simulation; problem based learning, role plays, games and videos.

e. The clinical education program should be developed by the NEI in consultation with the clinical facility.

f. Clinical placement coordinators should be appointed to manage the clinical education programme.

g. Clinical instructors should be recruited, trained on clinical teaching and assessment methods, leadership, reflective thinking, and preceptorship and oriented to the level of theoretical and practical knowledge of the student prior to clinical placement.

h. Transport should be made available for the students to-and-fro the clinical facility

i. Meetings should be organized between the NEI and the clinical facility when allocating students to the wards and units.

j. Learning objectives should be clear, concise and effectively communicated across all levels of the clinical education team.

5.1.4 During clinical placement

a. The management of the clinical facility should ensure evidence-based practice and promote positive practice environment to facilitate student learning.

b. Students should sign self-directed learning contracts at the beginning of placement.

c. The roles of the NEI, clinical facility, clinical instructors and students should be adhered to as defined.

d. Peer group teaching, demonstrations, patient case studies and presentations, clinical conferences, ward rounds, reflective journals and a critical incidence technique should be used in clinical teaching.

e. Regular assessment of students using direct observation, interviews, self-assessment, poster presentation and workbooks to determine student's progress and level of competence should take place.
f. Use Objective structured Clinical Examination (OBSCE) for summative examinations.
g. Use reflective journals and critical incidence techniques to evaluate students' clinical experience and the clinical education process.
h. There should be a constant presence of the nurse educator in the units.

5.1.5 After clinical placement

a. Feedback on the clinical education process should be collected from students, clinical instructors, clinical placement coordinators, unit managers and nurse educators.
b. The clinical education programme should be reviewed in order to inculcate essential information gathered through the feedbacks received.
c. Collaboration should occur with the staff in the clinical facility to organize refresher programmes for the nurse educators and clinical instructors related to the next phase of clinical placement.

5.1.6 Communicate, collaborate and consult

a. The NEI must ensure there is a two way communication between them and the clinical facility. An individual is tasked to represent each institution at the other.
b. The curriculum, learning objectives, roles of the NEI, roles of the clinical facility, roles of the clinical instructors and roles of the students must be clearly communicated among both intuitions.
c. The progress of the students in the clinical facility must be reported to the school continuously.
d. Difficulties and challenges faced by the students within the clinical facility should be communicated to the NEI.

e. Students, clinical instructors and the clinical facility managements' feedback on the clinical education programme should be accurately collected by the NEI.
f. The NEI and the clinical facility collaborate in the design of the programme, recruitment of the clinical instructors, evaluation of the students and the programme.
g. The stakeholders such as the nursing council, the national and provincial accreditation boards, the Department of Higher Education, the Department of Health and other funders, and the community leaders must be consulted in the development and implementation of the clinical education programme.

These practices, as stated above, are similar to those being practiced in America, Europe, Canada and Australia. With the majority of the researchers being Sub-Saharan African and the highest publishing journal from Sub-Saharan Africa, the researcher expected that the findings would be different from the trends in America, Canada, Europe and Australia. The similarity in findings however could be attributed to the long standing Eurocentrism within Sub-Saharan Africa.

While Sub-Saharan Africa is battling with premature deaths, communicable diseases and multi-drug resistant diseases as a result of the poverty and low literacy rates, the western world is dealing with non-communicable diseases, diseases of old age and injuries (WHO 2015). SSA is a resource poor sub-region where the nursing schools are located at distances away from clinical institutions while the nature of roads creates difficulty and risks for students to travel to these clinical facilities for clinical training. Nursing education programmes are expected to be innovative and contextual, to reduce cost and be responsive to the sub-region. It simply means that health worker training within the two regions must take different foci. Copying and implementation or replicating nursing education programmes from the America, Canada, Europe, United Kingdom and Australia in Sub-Saharan Africa without evaluating the programmes and how responsive the nurses

produced from these programmes are to the peculiar health needs of sub-Saharan Africa is a total disfavor to the region by her academics (Jamison et al. 2006; Parsons et al. 2011).

The prescribed best practices from these findings are good but the widespread structural, technological and human resource deficits across the SSA region and the rigidity of the nursing education systems to change, may oppose its implementation. Mostly, documentation of best practice programmes within the sub-region is efficient but their implementation poses challenges. This is not necessarily reflected in the literature. For example, the National Nursing Strategic Plan of South Africa was developed in 2008 and has faced challenges of implementation. The strategy was refined and republished in 2012 but as of 2015, it has not been fully implemented. It is of importance to state that this well-developed nursing strategic plan shows similarities with to *Project 2000* of the United Kingdom.

The Nursing Education institutions (nursing colleges) and the hospitals belong to the same ministry (department) of health and therefore compete for funding. The departments of health in the SSA as funders of nursing education are not primarily interested in research but rather in the production of adequate numbers of nurses to fill the nursing shortage gap in their hospitals. Most funding opportunities that are available for non-degree researches are foreign and are focused on the HIV and other communicable diseases within the SSA(Sun & Larson 2015). The universities that are research intensive do not have many scholars with a specialty research focus to attract large funding. This has led to the push by these universities to increase their student enrollment so as to acquire enough funding from the government departments (Uys et al. 2013). Increasing enrollment increases the educator/student ratio which has a negative impact on research and faculty development.

While subjecting the study findings to peer review, it was discovered that an integrative literature review or other literature review methodologies might not be the best research methods to elicit the best clinical nursing education practices in Sub-Saharan Africa. This is as a result of the bias of research findings and publications towards the western world.

This study could not identify any literature on the evaluation of programmes or their products for responsiveness to the needs of Sub-Saharan Africa region.

5.2 LIMITATIONS

The limitations to this study and its findings are described below:

5.2.1 Time

Research articles published over 10years and five months (January 2004 and after May, 2015) period were used in this review. Publications before January 2004 and after May, 2015 were not included in this study. There is however a potential omission of research articles outside the time scope of the study that might have had impact on the findings of the research.

5.2.2 Scope of databases

The search was conducted in only Cochrane Library, Science Direct, EBSCO host (MEDLINE, CINAHL Plus, ERIC and Health Source-Nursing/Academic Edition), PubMed, Wiley Online Library and Google Scholar. There is a possibility of articles published in other databases could have the potential of influencing the findings in this research.

5.2.3 Language

The studies included in this review were limited to those published in English. With the multilingual (English, French, Afrikaans, Portuguese, etc.) nature of the Sub-Saharan

Africa, there might be some articles published in other languages which were not included in this study.

5.2.4 Generality of findings

Clinical nursing education includes various specific aspects such as clinical accompaniment, clinical preceptorship, clinical instruction, clinical assessment, clinical mentorship, clinical facilitation etc. The findings in this review may not be exhaustive regarding how these specific components of the clinical nursing education are carried out.

5.2.5 Educational scope

The studies included in this review were limited to pre-registration nursing programmes hence the findings might not be applicable to post-registration clinical nursing education programmes.

5.2.6 Evaluation of Scientific knowledge on CNE practices

The study was aimed at providing the nursing community with the evaluation of scientific knowledge on clinical nursing education practices in Sub-Saharan Africa. This could not be achieved at the end of the study due to the low level of evidence included in this study.

5.3 RECOMMENDATIONS

5.3.1 Nursing education

It is recommended that nursing education institutions within Sub-Saharan Africa appraise and inculcate the findings from this study into their clinical nursing education programmes while evaluating the programmes and products on how responsive they are to the peculiar health needs of the sub-region.

5.3.2 Clinical practice

It is recommended that clinical facilities update their practices to relevant and research based to enable students learn the best way in a positive practice environment.

5.3.3 Nursing Administration

It is recommended that Nurse managers provide the necessary guidance, synergistic relation with clinical nursing education institutions to develop, implement and evaluate the clinical nursing education programmes.

5.3.4 Research

Further studies should be conducted on the best post-registration clinical nursing education practices in Sub-Saharan Africa.

Further reviews should be conducted using more databases and include major languages written in SSA to make the findings exhaustive.

Specific reviews should be conducted on the components of clinical nursing education such as clinical accompaniment, clinical mentorship, clinical preceptorship, clinical assessment etc.

The eastern and western parts of Sub-Saharan Africa need to conduct and publish more works on clinical nursing education within their sub-regions.

Further studies should be conducted on how nursing education curriculum could be designed to meet the peculiar health needs of Sub-Saharan Africa.

5.4 CONCLUSIONS AND VERIFICATION

As very important as these practices are to nursing education, the researcher holds the view that they may not be very responsive to the peculiar health needs of Sub-Saharan Africa as they are universal and not unique to Sub-Saharan Africa. This has led the researcher to the conclusion that Eurocentric biases of publications within Sub-Saharan Africa, limits integrative literature review methodology in eliciting the best clinical nursing education practices within the Sub-Saharan Africa.

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APPENDICES

APPENDIX A: SPARBEL AND ANDERSON'S (2000) DATA COLLECTION TOOL

DATA COLLECTION TOOL	
16. Researcher(s)	
17. Year of study	
18. Country of origin	
19. Purpose of study	
20. Study focus	
21. Conceptual model	
22. Research question/hypothesis	
23. Aspects of clinical nursing education addressed	
24. Type of research design	
25. Type of sample	
26. Number of subjects in study	
27. Instruments/tools used	
28. Validity (addressed)	
29. Reliability (addressed)	
30. Key findings:	

Remarks:.....

.....

.....

APPENDIX B: ETHICAL CLEARANCE FROM HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL), UNIVERSITY OF WITWATERSRAND

Human Research Ethics Committee (Medical)

Research Office Secretariat: Senate House Room SH10005, 10th floor. Tel +27 (0)11-717-1252
Medical School Secretariat: Tobias Health Sciences Building, 2nd floor Tel +27 (0)11-717-2700
Private Bag 3, Wits 2050, www.wits.ac.za. Fax +27 (0)11-717-1265

Ref: W-CJ-150415-1 15/04/2015

TO WHOM IT MAY CONCERN:

Waiver: This certifies that the following research does not require clearance from the Human Research Ethics Committee (Medical).

Investigator: **Mr C J Kpodo.**

Project title: **Best clinical nursing practices in Sub-Saharan Africa: an integrative literature review.**

Reason: This study is an analysis of information in the public domain. There are no human participants

UNIVERSITY OF THE WITWATERSRAND
PROF PE CLEATON-JONES
HREC (MEDICAL)
2015 -04- 15
JOHANNESBURG

Professor Peter Cleaton-Jones

Chair: Human Research Ethics Committee (Medical)

Copy – HREC (Medical) Secretariat: Zanele Ndlovu, Langutani Masingi.

APPENDIX C: PERMISSION USE DATA COLLECTION TOOL

From: Wiley Global Permissions <permissions@wiley.com>
To: ChristmalKpodo<869108@students.wits.ac.za>
Date: Wednesday 4 March 2015, 13:17 +0200
Subject: RE: Permission to use Data collection tool.

Dear Christmal,
Thank you for your request.
Permission is granted for you to use the material requested for your research report subject to the usual acknowledgements (author, title of material, title of book/journal, ourselves as publisher) and on the understanding that you will reapply for permission if you wish to distribute or publish your research report commercially.
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Any third party material is expressly excluded from this permission. If any material appears within the article with credit to another source, authorisation from that source must be obtained.
Best Wishes
Emma

From: Christmal Kpodo [mailto: 869108@students.wits.ac.za]
Sent: 25 February 2015 11:29
To: Permission Requests - UK
Subject: Fwd: Permission to use Data collection tool.

I am a Master of Science in Nursing (Nursing Education) student of the University of Witwatersrand, Johannesburg, South Africa.
I am working on "Best Clinical Nursing Education Practices in Sub-Saharan Africa:An integrative literature review" for my research report.

I found your work " Integrated Literature Review of Continuity of Care" by Sparbel& Anderson (2000) scholarly and very interesting and will like to modify your Data collection tool (continuity of Care Data-Collection Tool) for use in my work.
I will be very grateful if you grant me the permission to use your tool.

Christmal Jonah Kpodo
MSc. Nursing (Education)
University of Witwatersrand
Johannesburg, South Africa
+ 27 73 631 4750

APPENDIX D:CESARIO, MORIN & SANTA-DONATO (2002)'S QUALITATIVE STUDY RATING SYSTEM AND PERMISSION FOR IT'S USE.

CATEGORIES / **GRADES**	**0**	**1**	**2**	**3**
1. Descriptive vividness				
2. Analytical preciseness				
3. Theoretical connectedness				
4. Methodological congruence with subcategories 4.1 Rigour in documentation, 4.2 Procedure 4.3 ethics and Confirmability				
5. Heuristic relevance **5.1** Intuitive recognition **5.2** Relationship to the existing body of knowledge **5.3** Applicability				
TOTAL				

A scoring scale of 0 to 3 is used in order to evaluate whether the different criteria were met.

0 = No evidence, 1 = Poor evidence, 2 = Fair evidence, 3 = Good evidence

The paper is the graded on three levels of quality:
QI: Good quality studies meeting 75% to 100% of the total criteria (total score of 22.5 to 30)
Q II: Studies of fair quality meeting 50% to 74% of the total criteria (score of 15 to 22.4)
QIII: Poor-quality studies where less than 50% of the criteria were met (less than a total score of 15).

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Mar 17, 2015

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Number of figures/tables	1
Original Wiley figure/table number(s)	Table 2:Instruction for the evaluation of Qualitative literature
Will you be translating?	No
Title of your thesis / dissertation	Best Clinical Education Practices in Sub-Saharan Africa-An Integrative Literature Review
Expected completion date	Oct 2015
Expected size (number of pages)	50
Requestor Location	Christmal J Kpodo E23 West campus Village 1Jan Smuts Avenue, Braamfontein 2000 Johannesburg, South Africa 0027 Attn: Christmal J Kpodo
Billing Type	Invoice
Billing Address	Christmal J Kpodo E23 West campus Village 1Jan Smuts Avenue, Braamfontein 2000 Johannesburg, South Africa 0027 Attn: Christmal J Kpodo
Total	0.00 USD

APPENDIX E:O'CATHAIN ETAL'S (2008) QUALITY OF MIXED METHODS STUDIES IN HEALTH SERVICES RESEARCH ASSESSMENT TOOL AND PERMISSION FOR ITS USE.

CRITERIA	YES	YES BUT	NO
1. Is the use of mixed methods research justified?			
2. Is the design for mixing methods described?			
a. Priority			
b. Purpose			
c. Sequence			
d. Stage of integration			
3. Is the design clearly communicated?			
4. Is the design appropriate for addressing the research questions?			
5. Has rigor of the design been considered (proposal) or adhered to (report)?			

The finalquality of papers was based on the total scores of each of thecategories, with QI referring to good quality studies meeting75% to 100% of the total criteria (total score of 22.5 to 30); QIIreferring to studies of fair quality meeting 50% to 74% of thetotal criteria (score of 15 to 22.4); and QIII referring to poorqualitystudies where less than 50% of the criteria were met

(less than a total score of 15).

from: **Alicia O'Cathain** <a.ocathain@sheffield.ac.uk>

to: Christmal Kpodo <869108@students.wits.ac.za>

date: 16 March 2015 at 23:27

subject: RE: Permission to use Appraisal tool for mixed method studies

mailed-by: sheffield.ac.uk

: Important mainly because it was sent directly to you.

Hi christmal
I am very happy for you to use gramms. Best wishes Alicia

From: Christmal Kpodo
Sent: 16/03/2015 19:17
To: a.ocathain@sheffield.ac.uk
Subject: Permission to use Appraisal tool for mixed method studies

Hi Alicia,

I am a Master of Science in Nursing (Nursing Education) student of the University of Witwatersrand, Johannesburg, South Africa.

I am working on "Best Clinical Nursing Education Practices in Sub-Saharan Africa:An integrative literature review" for my research report.
I found your work "The quality of mixed methods studies in health services research' scholarly and very interesting and will like to use the criteria you outlined in appraising the quality of mixed method research to review articles to be included in my work.

I will be very grateful if you grant me the permission to use your tool.
Sincerely,
Christmal Jonah Kpodo
MSc. Nursing (Education)
University of Witwatersrand
Johannesburg, South Africa
+27 73 631 4750
+233 24 660 2308

APPENDIX F: MANN'S GRADING SYSTEM FOR QUANTITATIVE RESEARCH ARTICLES

Grade	description	Sub-category A	Sub-category B	Sub-category C
I	Randomised Control Trials (RCT)	RCT with accurate calculated sample size and standard definition of outcome criteria	RCT with standard definition of outcome variables only	RCT with none of the criteria in Subcategory A
II	Prospective studies with a comparison group (Non-randomised trial, observational studies, retrospective studies with controls clarifying confounding variables).	Sample size has been calculated, an accurate standard definition of outcome variables and adjustment for the effects of important variables are included	studies, having at least one of the criteria of a Grade IIA study	Does not exist
III	All other studies	Containing a comparison group, calculated sample size and accurate standard definition of outcome variables.	studies including at least one of the criteria of Grade IIIA	studies, which do not include any of the criteria in IIIA