FACTORS INFLUENCING INTEGRATION OF THEORY INTO PRACTICE IN CLINICAL SKILLS ACQUISITION AMONG REGISTERED NURSING STUDENTS AT LIVINGSTONE SCHOOLS OF NURSING AND MIDWIFERY, ZAMBIA

By

MAYBEL SIMENGOMTHANDAZO MPOFU

RN /RM / BSc. Degree in Nursing

A Dissertation Submitted to the University of Zambia in Partial Fulfilment of the Requirements for the award of the Degree of Master of Science in Nursing Sciences

THE UNIVERSITY OF ZAMBIA

LUSAKA

NOVEMBER, 2017

DECLARATION

I, **Maybel Simengom'thandazo Mpofu**, hereby declare that this dissertation represents my own work and has not been presented either wholly or in part for a Degree at the University of Zambia or any other University. I further declare that all the sources I have cited have been indicated and acknowledged using complete references.

Candidate name: Maybel Simengo'mthandazo Mpofu

Signature (Candidate)……..…..……..

Date…….

Signature (Supervisor)……..…**Date**…….

COPYRIGHT

CERTIFICATE OF COMPLETION OF DISSERTATION

I, **Doctor Marjorie Kabinga- Makukula,** having supervised and read this dissertation is satisfied that this is the original work of the author under whose name it is being presented. I confirm that the work has been completed satisfactorily and approve it for final submission.

Signature/ Supervisor…….……

Date…….……..

Head of

Department……

Date…….

Department……

CERTIFICATE OF APPROVAL

This dissertation of MAYBEL SIMENGOM'THANDAZO MPOFU on FACTORS INFLUENCING INTEGRATION OF THEORY INTO PRACTICE IN CLINICAL SKILLS ACQUISITION AMONG REGISTERED NURSING STUDENTS AT LIVINGSTONE SCHOOLS OF NURSING AND MIDWIFERY, ZAMBIA has been approved in partial fulfilment of the requirements for the award of the Degree of Master of Science in Nursing by the University of Zambia.

Examiner I

Name: ……

Signature……..……**Date**……..

Examiner II

Name: ……..

Signature……..**Date**……...……

Examiner III

Name: ……..

Signature……...……**Date**……

DEDICATION

To my best friend and husband Ignatius Francis Ngabwe, your unconditional love, encouragement, patience and perseverance have contributed to my success.

Mum, you have always been my mentor.

To my nieces and daughters: Titibele, Bahle, Patisile, Nompumelelo, Nkosinathi and Nokuthula you endured so many days and nights without mum, your loneliness helped me to work hard. I love you so much.

ACKNOWLEDGEMENTS

I would like to thank Dr. Kabinga Makukula and Ms. Ruth Wahila for their knowledge and time as they supervised my work, and the support they have continuously given me throughout this project. Thank you for your patience and for allowing me to disturb your work at any time

My appreciation also goes to the entire faculty in the School of Nursing Sciences as well as my colleagues for their input. Thank you so much for the support that you have given me during this course.

I am so grateful to the Ministry of Health for the support throughout the period of study.

Thanks to the Medical Superintendents and Principal Tutors, for Livingstone Central and Kabwe General Hospitals, Livingstone and Kabwe Schools of Nursing for allowing me to conduct this study from their facilities. I thank the Nursing Tutors for their support.

To the nursing students: This project was a success because of you, and I am very grateful.

My gratitude goes to my family for their everlasting love, endurance and encouragement throughout the process of conducting this study.

I am eternally grateful to my Lord Jesus Christ for His abounding love and grace; enabling me to do all things through Him as He strengthens me.

Lastly, my sincere gratitude goes to all who contributed to the success of this project.

ABSTRACT

Understanding of any factor that may affect the skills acquisition of nursing students in the clinical area is essential to ensure that maximum benefits are gained from this aspect of nursing education. Factors which influenced integration of theory into practice in clinical skills acquisition among students at a school of nursing located in Zambia were studied. The aim of the study was to explore factors which influenced integration of theory into practice in clinical skills acquisition among nursing students at a school of nursing located in Zambia.

A mixed method using descriptive cross-sectional with stratified random sampling and descriptive qualitative study with purposeful sampling methods were used. Data were collected using a 47-item self-administered questionnaire and 2 FGDs and analysed using SPSS version 23 and qualitative content analysis. Chi- square and Binary Logistic regression was used to test for significant associations.

90 students for quantitative and 17 students in 2FGD groups participated in the study. The mean age was 23.8± 4.08 (95% CI,) (range 19-40 years) and most of the respondents were female (73.3%). Student related factors (OR= 5.055, p< 0.001) influenced significantly the integration of theory into practice. The majority of the students, identified Theoretical knowledge and practice (OR= 69.507, p< 001), sequencing clinical allocation with core competencies (OR= 409.749, p< 004), documentation (OR= 3.393, p< 0.40) and explaining of objectives (OR= 5.320, p<0.42) as having the greatest influence on integration of theory into practice in clinical skills acquisition. Furthermore availability of resources, attitude of staff and follow up by nurse tutors were identified themes that influenced integration of theory into practice.

Student involvement, availability of resources and follow up by educators were identified as being influential to theory integration and clinical skills acquisition. These factors and other identified factors should inform the preparation of nursing students, in clinical skills acquisition.

Key words: Integration of theory, clinical environment; clinical supervision; Clinical skills acquisition; clinical practice

TABLE OF CONTENTS

Page Numbers

DECLARATION……. i

COPYRIGHT……..… ii

CERTIFICATE of COMPLETION of DISSERTATION……. iii

CERTIFICATE OF APPROVAL……. iv

DEDICATION…… v

ACKNOWLEDGEMENTS……..……. vi

ABSTRACT……. vii

TABLE OF CONTENTS……... viii

LIST OF TABLES……..…….. xiii

LIST OF FIGURES…….. xiv

LIST OF APPENDICES …….. xv

ACRONYMS……... xvi

CHAPTER ONE: INTRODUCTION

1.1 Background information…… 1

1.2 Statement of the problem…… 4

1.3 Justification……...……. 6

1.4 Theoretical Framework……..……..7

1.5 Research question…… 13

1.6 Research objectives…… 13

1.7 Hypothesis…….... 13

1.8 Conceptual definition of terms…… 14

1.9 Operational definition of terms……14

1.10 Research variables and cut-off points……15

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction……..…….. 17

2.2 Overview of Clinical Education …… 17

2.3 Environmental Factors…….….. 18

2.4 Student Related Factors…….. 21

2.5 Clinical supervision……. 24

2.6 Relationship among variables……. 28

2.7 Relationship between students related factors, clinical supervision and Environment and integration of theory into practice…… 29

2.8 Conclusion……... 30

CHAPTER THREE: METHODOLOGY

3.1 Introduction……. 31

3.2 Study design……... 31

3.3 Research setting……... 31

3.4 Study Population…… .32

3.4.1 Target population ……....32

3.4.2 Accessible population…….33

3.5 Sample selection……33

3.5.1 Quantitative method ……..…… 33

3.5.2 Qualitative method ……..…….. 33

3.5.3 Inclusion criteria……34

3.5.4 Exclusion criteria…….…….... 35

3.5.5 Sample size……..…….……35

3.6 Data collection tools…….…… 35

3.6.1 Quantitative tool Self-administered Questionnaire…….,,…….35

3.6.2 Qualitative tool -Focus Group Guide……..…….. 36

3.6.3 Quantitative Data ……..36

3.7 Data collection techniques…… 36

3.7.1 Data collection technique for quantitative data…… 38

3.7.2 Data collection technique for qualitative data…….. 39

3.8 Pilot study ……..……. 40

3.9 Ethical consideration……. 41

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction…… 42

4.2 Data analysis…….. 42

4.2.1 Quantitative data…….. 42

4.2.2 Qualitative data…… 42

4.3 Data presentation…… 43

4.3.1 Social demographic characteristics of participants…….. 43

4.3.2 Factors influencing integration of theory into practice in clinical skills acquisition …… 44

4.3.3 Clinical environment factors ……. 49

4.3.4 Student related factors …….. 51

4.3.5 Clinical supervision factors …….. 56

4.3.6 Relationship between dependent and independent variables … 58

4.3.7 Binary Logistic Regression- determining Factors influencing integration of theory into practice in clinical skills acquisition ..…… 66

4.3.8 Factors influencing and hindering integration of theory into practice in clinical skills Acquisition-…….. …… 68

4.4 Focus group discussions …….. 72

4.4.1 Clinical Environment……. 74

4.4.2 Clinical Supervision……... 75
4.4.3 Student related factors……. 76
4.4.4. Solutions proposed to done by the nurse educators and clinical Instructors……..……. 76
4.4.5 Solutions proposed to be done by the nursing students .. 78

4.5 Conclusion ……. 79

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Introduction…… 80
5.2 Socio demographic characteristics of respondents…… 80
5.3. Integration of theory into practice …… 80
5.3.1 Theory taught in the classroom and the practice in the clinical area 81
5.3.2 Sequencing clinical allocation and core competencies …… 81
5.3.3. Explained Objectives to the nursing students and clinical staff 82
5.4 Variables influencing integration of theory into practice ……. 82
5.4.1 Clinical environment …… 83
5.4.2 Student Related Factors …… 86
5.4.3 Clinical supervision …… 88
5.5: Application of the Framework …… 93
5.6: Strengths of this Study …… 93
5.7 Limitations of the study……. 93
5.8 Implications to nursing…….. 93
5.8.1 Implications to nursing education ……..…… 93
5.8.2 Implications to nursing administration…… 93

5.8.3 Implications to nursing practice……... 94

5.8.4 Implications to nursing research……. 94

5.9 Conclusion ……..... 94

5. 10 Recommendations…… 95

5.10.1: Recommendation to the Nurse Educators …… 96

5.10.2: Recommendations to the Nursing School Management … 96

5.10.3: Recommendations to the Ministry of Health ……. 96

5.10.4: Recommendations for Further Research …….. 96

5.11 Dissemination and utilization of findings……. 96

REFERENCES…… 97

LIST OF TABLES

Table 1: 1 Progression results for year one, two and hospital mock exam…… 04

Table1: 2 Individual performances of nursing students ……. 05

Table 1: 3 Variables, cut off points and indicators…… 16

Table 4:1 Socio demographic characteristics of the study population…… 44

Table 4: 2 Summary of responses on integration of theory into practice …… 50

Table 4: 3 Responses on clinical environment ……..…… 51

Table 4: 4 Clinical supervision factors……..…… 59

Table 4: 5 Integration of theory into practice in relation to level of training …… 61

Table 4: 6 Relationship between Integration of theory and Student related factors 62

Table 4: 7 Relationship between Integration of theory and Student related variables. 63

Table 4: 8 Relationships between Integration of theory and Clinical Supervision 64

Table 4: 9 Relationships between Integration of theory and Clinical Supervision Variables ……. 65

Table 4: 10 Relationship between Integration of theory and Clinical Environment- Cross tabulation ……..…… 66

Table 4: 11 Relationship between Integration of theory and Clinical Environment variables cross tabulations …… 67

Table 4: 12 Binary Logistic Regression determining relationship Between Integration of theory and Independent variables …….. 68

Table 4: 13 Binary Logistic Regression of variables influencing Integration of theory into practice …… 69

Table 4: 14 Themes, categories and subcategories …….……. 73

LIST OF FIGURES

Figure 1: 1a Adapted from Vygosky's social constructivism theory……. 10

Figure 1: 1b Adapted from Benner's model …….. 10

Figure 4: 1 Prescribed learning materials ……. 46

Figure 4: 2 Student's views on procedures demonstrated before clinical placements … 47

Figure 4: 3 Explanations of clinical skills ……. 47

Figure 4: 4 Sequencing of theory into practice ……. 48

Figure 4: 5 Application of theory into practice by the clinical staff …… 49

Figure 4: 6 Approaches of performing procedures according to what was taught and How they were practiced in the clinical practice …… 50

Figure 4: 7 Summaries for clinical environment factors ……. 53

Figure 4: 8 Availability of clinical staff support ……. 54

Figure 4: 9 Nurse Educators' control on nursing students during clinical practice 54

Figure 4: 10 Willingness of clinical staff to teach nursing students ……... 55

Figure 4: 11 Availability of clinical instructors in clinical area ……. 55

Figure 4: 12 Relationship between nurse educators and clinical staff …… 56

Figure 4: 13 Involvement of students in peer education …… 57

Figure 4: 14 Nursing students' engagement in reflection …….. 57

Figure 4: 15 Summaries of student related factors …… 58

Figure 4: 16 Summaries of Clinical supervision …… 60

LIST OF APPENDICES

Appendix 1: Participant Information Sheet ……..…… 102

Appendix II: Informed Consent Form (Quantitative data) …….. 104

Appendix III: Self-administered questionnaire...…… 105

Appendix IV: Participant Information sheet (Qualitative data) …… 110

Appendix V: Informed consent form (Qualitative data) …… 112

Appendix VI: Focus group discussion …….. 113

ACRONYMS

CLES +T –Clinical Learning Environment Supervision + Teaching

FGD - Focus Group Discussion

GNC - General Nursing Council

OR - Odds Ratio

MOH - Ministry of Health

UNZABREC –University of Zambia Biomedical Research Ethics Committee

ZPD - Zone of Proximal Development

CHAPTER ONE

INTRODUCTION

1.1 Background

Clinical skills acquisition is important in the care of patients as it promotes quality of care. The emphasis on provision of evidence based practice in nursing makes it imperative that the nursing students be equipped with knowledge that will prepare them to ably practice in different health care settings as qualified nurses. The aim of this study was to explore factors that influence integration of theory into practice in clinical skills acquisition among nursing students.

Nursing education involves both theoretical and practical training processes (Elcigil and Sari, 2007; Zamanzadeh et al., 2012) and students are expected to gain the knowledge and competencies of one stage before progressing to the next level of training, and be qualified as nurses. Considering that nursing is a competence-based profession (Kaphagawani and Useh, 2013; Tiwari et al., 2005), clinical learning is an important component of nursing education. During clinical learning, students are exposed to and interact with the clinical environment which includes clinical wards, clinics, nurses, doctors, patients and their families, and clinical instructors (Dagdaran et al., 2012). The clinical environment enhances transfer of theoretical knowledge into practice and ultimately improves provision of quality care. The knowledge gained makes it easy for the students to provide care adequately according to their level of competencies. According to Taniyama et al. (2012), clinical knowledge, critical thinking for troubleshooting, and confidence in decision making among nursing students can be augmented by applying the knowledge acquired in school to clinical practice. Hence, in order to provide high-quality nursing care to patients, students need to learn both the theoretical knowledge as well as practical skills (Emmanuel and Price- Miller, 2013).

The integration of theory into practice in nursing education has long been considered as complex and as a subject of much controversy (Ousey and Gallagher, 2007). Nursing education demands equipping nursing students with knowledge and clinical skills in order to fill the nurse's role in the health care team. Clinical education being a critical part of the nursing curriculum (Changiz et al., 2012) provides the opportunity for students to apply the theory learned in the classroom to the real world of nursing (Tiwari et al., 2005).

Acquisition of clinical skills is achieved through clinical learning. Clinical learning is the means by which nursing students learn to apply the theory of nursing, facilitating integration of theoretical knowledge and practical skills in the clinical setting which becomes the art and science of nursing (Mabuda et al., 2008). This is provided within the clinical area where students are allocated. Clinical placements offer students the opportunities to make connections between theory and practice in the workplace, thereby facilitating the transition from being a student to a competent graduate nurse.

The relationship between nursing students and faculty, clinical staff and the clinical environment including the student engagements, affects skills acquisition in nursing practice. When these factors are provided for and adequate support is given to the students, they are likely to integrate the theory into practice. The learning process could be influenced by the clinical learning environment. Studies conducted in Australia showed that a support structure, including the support of nurses and clinical lecturers during clinical education, was of great importance to students' learning process (Bourgeois et al., 2011). It has also been attested that clinical practice conducted in a variety of settings promotes comprehensive active learning of students through practice (Taniyama et al., 2012).

Evidence from literature suggests that there is a theory to practice gap, which has been of concern for a long time in nursing education and this has had an impact on students' learning of clinical skills (Kaphagawani and Useh, 2013; Dagdaran et al., 2012). Theory practice gap is defined as a discrepancy between what students are taught in a classroom setting, which is the theoretical aspect of nursing and what they experience whilst on placement in the clinical area, also known as the practice of nursing (Hussein and Osuji, 2017). Some studies postulate that the gap could be attributed to the fact that nursing education is facing a rapid changing health care landscape, shifting student and patient demographics, an explosion of technology, and the globalization of health care (Dagdaran et al., 2012). Furthermore the gap between theory and practice has been a critical issue in medical and nursing education (Scully, 2011; Dlamini, 2011) and past studies have shown that the gap between theory and practice is a result from the non existence of integration between theory and practice (Mahmud, 2013). Therefore, there is need to identify factors that influence integration, and refocus the training so as to enable the students acquire the skills that are necessary for them to perform adequately.

It has been observed that experiences, including application of theory to practice, effective mentoring and constructive feedback positively influence clinical learning (Mabuda et al., 2008). Equally, a conducive and supportive learning environment for nursing students depend on the availability of placement support systems, such as supervision, mentorship, preceptor ship and relationships between the nursing students, faculty and the clinical staff (Kristofferzon, 2012). However, it has been noted that other factors affecting integration of theory into practice in other countries such as Iran include the nurse/patient ratio, heavy workload, and performing non nursing duties (Cheraghi et al., 2012). Furthermore shortage of staff to mentor, supervise and support students have been identified in Swaziland, Malawi and Zambia as hindering the student clinical learning, as students become a second hand to performing nursing duties (Dlamini, 2011; Msiska, Smith & Fawcett, 2014 & Ministry of Health, 2015). According to the Ministry of Health (MOH), Zambia continues to face a critical shortage of registered nurses with a deficit of 57% and this shortage has a resultant effect on the clinical learning of nursing students (MoH, 2010).

Several efforts have been made to enhance clinical learning and acquisition of clinical skills among nursing students. The General Nursing Council (GNC) of Zambia in collaboration with the MoH has reviewed the nursing curriculum in order to strengthen the clinical component of nurse training. Moreover, continued professional development programmes for nurse tutors have been implemented to orient them to new updates in nursing practice and education so that they can provide quality classroom and clinical teaching.

Currently there is no empirical evidence about the factors that influence the integration of theory into practice and a theory practice gap exist among nursing students in Zambia. Therefore there is need for the researcher to conduct the study in order to gain more knowledge on the subject and improve the quality of clinical education and clinical practice among nursing students.

1.2 Statement of the problem

Despite the strategies put in place by the GNC and MoH to enhance learning and facilitate integration of theory into practice to promote cognitive, psychomotor and affective skills acquisition among nursing students, it has been observed that there has been continued poor performance of clinical skills in various nursing schools including Livingstone School of Nursing.

According to the MoH (2007), performance assessment standard indicator for achieving the goal in academic excellence is 85%. Furthermore the GNC (2013) stipulates that for a nursing student to pass with an honour grade, one must score 85% or above. However, Livingstone School of Nursing has not been able to achieve the set goal. It has been observed in the past years that no nursing student has passed with an honour and mostly the overall performance for the school has been between 50% and 69%. Below is the presentation of the performance of nursing students during examinations.

Table 1: 1 Progression results for year one, two and hospital mock exam

Programme	**REGISTERED NURSING**								
Level of Training	**GNC final Examination June 2015**			**End of Second Year for July 2013 Intake - Year 2015**			**HOSPITAL MOCK –JULY 2013 INTAKE- Year 2016**		
Paper	**Paper I**	**Paper II**	**Practical**	**Paper I**	**Paper II**	**Practical**	**Paper I**	**Paper II**	**Practical**
85 –100%	0	0	0	0	0	0	0	0	0
75 – 84%	2	1	2	0	0	1	0	0	4
70 – 74%	5	3	6	1	2	0	0	0	4
65 – 69%	7	11	6	3	6	6	1	3	8
60 – 64%	10	11	10	6	10	5	10	4	11
55 – 59%	13	7	15	15	14	12	5	9	7

50 – 54%	8	14	8	18	13	18	12	14	6
45 - 49%	2	4	1	8	8	10	8	8	3
40 – 44%	3	1	1	9	8	11	6	7	3
0- 39%	0	0	0	12	11	9	8	7	3
TOTAL	50	52	49	72	72	72	51	51	52

Source: General Nursing Council and Livingstone School of Nursing Report, 2015/ 2016.

Based on the students results presented in table 1:1, it is observed that those students who performed very well in theory did not perform very well in the practical exams. The average performance of the students could indicate inability of the nursing students to relate the theoretical knowledge to practice, resulting in inadequate clinical skills acquisition. Furthermore during progressive examinations there has been no marginal improvement despite having been allocated to the clinical area for longer periods of time. It was also postulated that those who failed theory equally performed poorly in practical examinations. Below are the progressive results of the nursing students who had highest scores in theory and practice and those who had lowest scores in theory and practice.

Table 1: 2 Results for highest scores in theory and practice and the lowest scores in theory and practice

Highest scored results	**End of second year exams July 2013 Intake**			**Hospital mock July 2013 Intake**		
	Paper I %	**Paper II %**	**Practical (%)**	**Paper I %**	**Paper II %**	**Practical %**
1.	73	67	60	66	59	62
2.	68	60	55	64	60	68
3.	65	70	58	61	69	66
4.	54	62	61	64	59	62
5.	65	56	55	64	50	60
6.	64	72	66	63	69	71

7.	63	57	50	61	60	78
Lowest scored results						
1.	**21**	**27**	**36**	**32**	**31**	62
2.	**27**	**29**	**43**	**34**	**30**	**35**
3.	**28**	**24**	**39**	**34**	**41**	**44**
4.	**30**	**28**	**40**	**38**	**34**	52
5.	**30**	**25**	**44**	**37**	54	**44**

Source: Livingstone School of Nursing, 2016

According to Papathanasiou (2013) nursing's continuing purpose is to provide holistic care, which presupposes an unswerving co-existence of theoretical knowledge, values and principles collectively with practical applications and technical details. The results indicate that there could be distancing of theoretical knowledge from practice in clinical skills acquisition and the practice of nursing students and nurses is inadequate. Henceforth the life of the patient could be at risk as they will provide low quality health care.

In view of the need for competent and skilled registered nurses, the curriculum has been revised based on the scope of practice. More hours have been allocated to the clinical practice compared to the classroom learning hours (GNC, 2014) to ensure that the nursing students have adequate time to practice and gain the skill. Competence based practice, which will enhance skills and competency development among nurses and promote competent supervision and support to the nursing students has also been introduced. Nevertheless, despite these efforts little is known on whether there is a theory to practice gap, in the integration of theory to practice among student nurses in clinical skills acquisition.

1.3 Justification

Literature shows that there has been a separation of theoretical knowledge from the practical dimension of nursing (Maben et al., 2004 and Scully, 2011). Equipping nursing students with clinical skills and knowledge corresponds with the demands of the nurse's role as the primary goal of nursing education (Bloomfield and Jones, 2013). Learning takes place when students apply what they have learnt in the classroom situation and practiced in the skills laboratory into the reality of nursing (Kaphagawani and Useh, 2013). Hence, exploring and identifying

factors that influence integration of theory into practice among nursing students is essential as these plays a major role in clinical education.

With reference to Brown, (2012) and D'souza (2013), environmental, student related, pedagogical atmosphere and clinical supervision are crucial in the clinical learning experiences for nursing students.

It is envisaged that the study findings will be essential in nursing education in Zambia because they will be utilised to create awareness of the factors that facilitate or contribute to the integration of theory into practice. The findings may form the basis of the process of reviewing the curriculum on nursing education.

Recommendations will also be made that may further enable the relevant key players in nursing education in the country to take action that will help improve nursing practice, augment the production of competent and proficient professional nurses, thus the health care system may be improved. The nursing students may benefit from the findings of this study as the knowledge obtained may improve not only their practice but also clarify their appreciation of nursing as a profession. Furthermore the findings will also serve as a reference for further research on nursing education issues since limited studies have been conducted in Zambia.

1.4 Theoretical Framework

The study was guided by the Social Constructivism Theory by Lev Vygotsky (1896- 1934) and Benner's Model of learning. The Theory and Model explain the nature of nursing students' learning and factors that influence their learning as they progressed in their training; from a novice to being competent while being required to interact within a social context of the environment, and how they are able to integrate theory into practice. The Theory emphasizes the understanding of new education by the learner, as well as main emphasis on active learner-centred approaches (Kala et al., 2009). It posits that individual experiences influence the acquisition of knowledge within the context of learners' environment. The way the learners interact, they are able to construct their own knowledge and understanding of a topic and that they discover the basic principles for themselves.

Social Constructivism Theory is a sociological premise of awareness that emphasises on how individuals come to create and employ learning skills in socially mediated settings (Thomas, et al, 2014). The learner becomes actively involved in creating meaning from diverse encounters (Chambers, et al., 2013). These socially mediated settings and knowledge are built and constructed through involvement of others and further provides the opportunity for students to assess and modify their knowledge as they interact with others and be involved in developing new knowledge (Santrock, 2006).

However nursing students' learning could be affected by staff attitudes, and inadequate staffing compared to the patient load, and hence they will focus more on patient care and less on teaching students. The social learning interaction allows students to undertake a greater comprehension and gain new insights. The learning styles that students use promotes the integration of theory and practice. Some of the strategies the student were to use could include self-reflective activities through questioning and tasks oriented approach which teaches learners how to connect their existing information with new knowledge (Kala et al., 2009).

Learning also occurs through the use of the "More knowledgeable others" (MKO). This refers to anyone who has a better understanding or high skills than the learner, with respect to a particular activity, process or concept. As the nursing students are attached to specific clinical allocations they need a more knowledgeable other to teach them procedures specific for that allocation such as the nurse educator, clinical instructor, the ward sister and the fellow students who are their seniors and peer. The MKO uses appropriate teaching strategies to promote integration of theory into practice such as demonstration, modelling and case studies.

The other component proposed by Vygotsky (1962) is the zone of proximal development (ZPD). This is what is expected of the student in relation to what should be achieved through the guidance of the educator who could be the tutor, clinical instructor and/ or the peer. These are considered to be more knowledgeable than the nursing student. This could be achieved through the student's ability to solving the problem independently and the level of learning that has to be achieved.

The specific objectives that are to be achieved are going to be set according to competencies that have been set. This leads to planning and implementation of assessment strategies that were used to note whether integration had taken place or not. It also uses scaffolding, which has been defined as the process by which a teacher provides students with a temporal outline and support for education and the students attempt to understand new ideas and complete new responsibilities (Chambers et al., 2013). The learner gains support from the nurse educators, clinical instructors and fellow nursing students. It promotes exchange of ideas and awareness between the tutor and the student and this should be done through dialogue (Chen et al., 2009). Normally the support is temporal and specific for the ZPD that has been developed and when the student starts integrating, scaffolding is gradually removed and finally terminated when the student gains understanding of the activities that they were learning. During this period learning takes place between the ZPD. The collective exchange of information that is occurring will be the starting point on which the internalization process takes place (Chen et al., 2009).

These experiences are based on the cultural background and values that the learner should have learnt in the past. From these past experiences, it assumes that the learner builds up their own meanings and understanding of a topic (Dumchin, 2010). The focus is on the individual's learning that takes place because of their interactions within a particular social context (Thomas, et al., 2014). In other words, students learn best by trying to make sense of something on their own with the instructor as a guide. The nursing students' learning evolves through five levels of development adopted from Benner's Model.

Figure 1: 1a Adapted from Vygoski's social constructivism theory

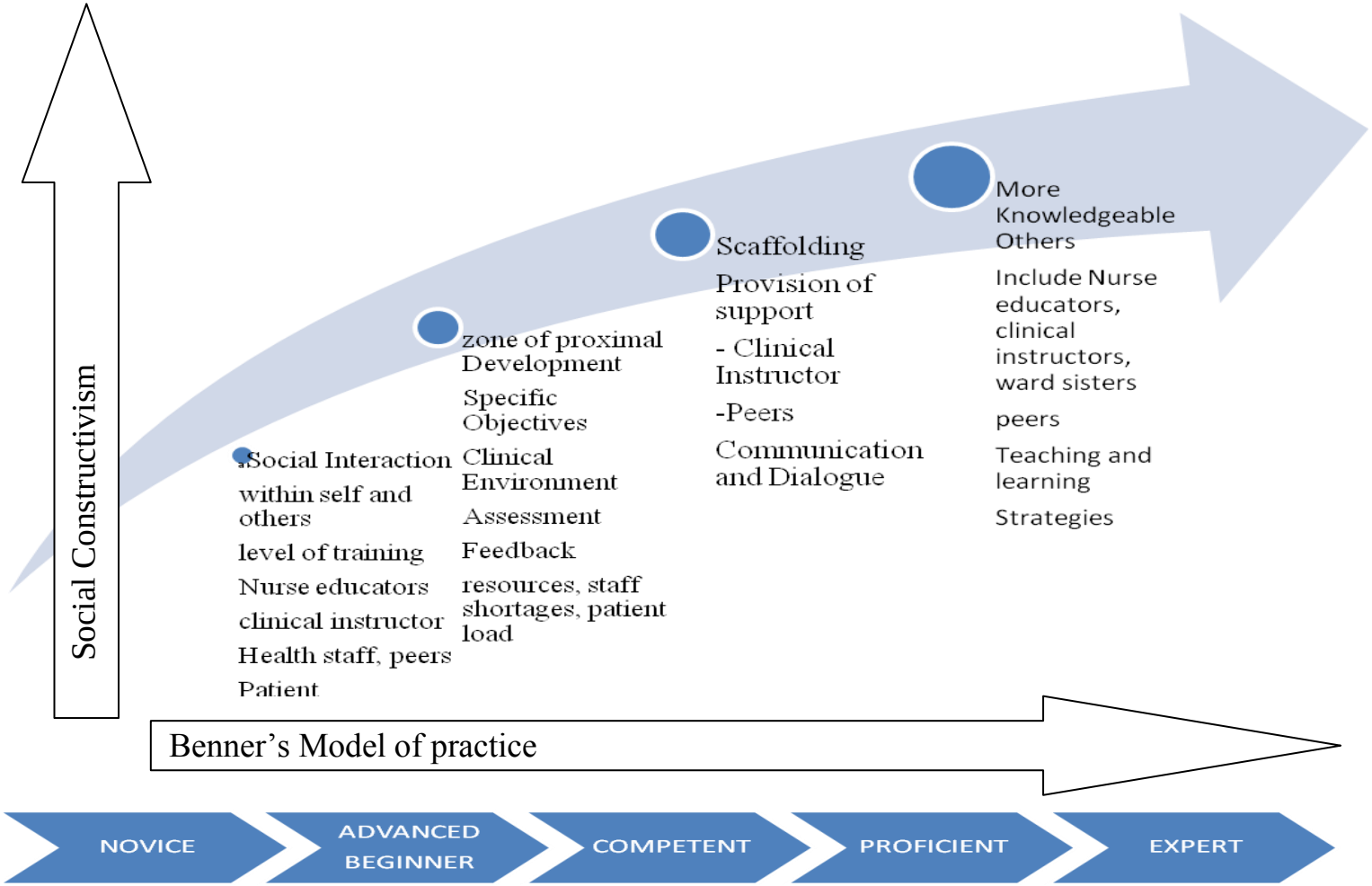

Figure 1: 1b Adapted from Benner's Model

According to Benner (1984), first and foremost, theoretical knowledge plays an important role in nursing practice: The knowledge is provided according to a specific level of learning in a systematic process that should be translated to the clinical practice. The Model provides a methodical and structured framework for the process of acquiring competencies (Dumchin, 2010). Benner identifies five levels which are; novice, advanced beginner, competent, proficient, and expert (Benner, 1984):

- **Novice**

  In the novice stage a person follows rules that do not consider the surrounding circumstances of the environment and feels no responsibility for anything other than following the guidelines. According to Dumchin (2010), the move from novice to expert is characterised by the shift from following clear explanation of all activities without leaving out anything behind to interactive contextually resolve behaviour. That is to say at the beginning of training all students regardless of their previous experiences, are considered novice because they do not have or have minimum previous knowledge of nursing practice. The nursing student goes to the clinical placement with the basic knowledge of subjects like anatomy, physiology, fundamentals of nursing, sociology and others, hence they will now build on this knowledge and experiences to learn and gain new experiences.

- **Advanced beginner**

  The nursing student begins applying a little bit good enough performance acquired from the guidance they received during the novice stage. However they still require monitoring and tutoring in order for them to be able to integrate theory into practice. They are still developing new skills and competencies.

- **Competent**

  The learner recognizes the patterns of learning and with the help of the more knowledgeable others, decides the appropriate action for the situation. The nursing student starts developing new rules and plans of care based on the initial knowledge they were taught and they are able to execute the planned activities with minimal supervision. It can be further espoused that the student has had the opportunity to practice what they have been taught theoretically.

During this stage the nursing student also graduates from being a student and now becomes a qualified nurse.

- **Proficient**

  The nurse at this stage as a newly qualified possesses deep understanding of the situation. They develop critical thinking and decision making based on what is obtaining and decide the most appropriate intervention for the given circumstances. During provision of care they enhance a holistic approach to the managing of environment and the service.

- **Expert**

  The nurse no longer uses the imperative instruction saying, they utilise intuition in understanding the situation. The nurse has lots of experience from prolonged exposure to the specific environment and uses deep understanding of total situation. The competencies are learned from most simple to complex as the learner moves from novice to expert through the levels of knowledge and skills acquisition (Dumchin, 2010).

The clinical practice hence must be planned in such a way that it ensures that the level of the skills acquired or understanding of the theoretical knowledge and competencies to be achieved are relating to the specific level of training in order to provide a firm ground for proficient, certain, consistent and safe clinical practice (Dumchin, 2010). In many situations most nursing students tend to graduate after they have gained minimum competency to work with the patient before they can reach the level of expert (McHugh and Lake, 2010).

The clinical instructor and nurse educators need to help the student apply the theoretical knowledge into practice. Nonetheless, as the nursing student moves from novice to competency, there are certain factors that are either facilitating or preventing them from applying theoretical knowledge into clinical practice. The factors can be identified through the use of Social Constructivism and observations of the nursing students as they are assessed based on their level of training and stage of Benner's Model. The factors could be environmental, that is clinical environment, health staff, and attitude of staff towards nursing students and clinical learning, lack of resources, issues of tutors, patient load, clinical supervision and learning styles.

If these factors are well blended, integration of theory and practice will take place and nursing students will acquire the required skills. If not there will be no integration leading to failure to acquire skills. The Social Constructivism Theory therefore helps in identifying factors that influence their learning and integration of theory into practice.

1.5 Research Question

What are the factors that influence integration of theory into practice in clinical skills acquisition among nursing students?

1.6 General Objective

The general objective of the study was to explore factors that influence integration of theory into practice in clinical skills acquisition among nursing students at Livingstone School of Nursing.

1.6.1 Specific Objectives

The objectives of the study were to;

1. Explore environmental factors that influence integration of theory into practice
2. Determine student related factors that influence integration of theory into practice
3. Establish the association between integration of theory into practice and clinical supervision.

1.7 Hypotheses

1.7.1 Null Hypothesis

There was no association between integration of theory into practice in clinical skills acquisition and the following factors;

- Clinical environment
    - Availability of resources
    - Staffing levels
    - Attitude of nursing staff
- Student related factors
    - Learning styles

- Relationship between teaching staff and nursing student
- Relationship between clinical staff and nursing student
- Communication
- Level of training

- Clinical supervision
  - Nursing process use
  - Explanation of objectives
  - Feedback system

1.8 Conceptual definition of terms

1.8.1 Integration of Theory into Practice – It is the connecting of knowledge and skills learned in the classroom with practice and implementation in clinical placements (Mahmud, 2013).

1.8.2 Clinical supervision-It is a process through which the clinical supervisor enables the progression of a novice (the learner) in the direction of becoming a knowledgeable professional, through the process of preserving and upholding care standards, practice-focused professional relationships and contemplation on practice (Mahmud, 2013; Pillay & Msthali, 2008)

1.8.3 Assessment strategies- The exercise of discernment on the quality of students' work as a way of supporting learning and appraising its outcomes (Higher Education Quality Council in Sandy 2014)

1.8.4 Learning styles- These are different approaches used to impart knowledge such as case reports, self directed learning and trial and error, (Dagdaran, et al., 2012)

1.8.5 Communication – It is the process of exchanging gathered facts and the course of action of making and conveying meanings between two or more individuals (Baghgechi, et al., 2011).

1.8.6 Clinical Environment- the surrounding forces and external motivation that affect an individual student (Bloom, 1965 in Bourgeios, et al., 2010)

1.9 Operational definition of terms

1.9.2 Integration of theory into practice- This is the translation of what is learnt in the classroom or the theoretical knowledge in the practice of the nursing skills

1.9.3 Clinical supervision – it is the process of ensuring that nursing students acquire the intended skills, competencies and knowledge to practice as nurses through the guidance of the qualified member of staff

1.9.4 Clinical learning environment - These are the different settings in which the nursing students acquire knowledge and skills which includes the attitude of clinical staff towards nursing students, patient load, availability of resources and learning strategies that are employed.

1.9.5 Communication- The interaction occurring between nursing students and the knowledgeable others, thus enabling exchange of information

1.9.6 Pedagogical factors-These are factors that focus on the nature of the content and information, learning and teaching strategies and what is learning

1.9.7 Assessment strategies- These are the strategies used to ascertain the competencies and skills gained by nursing students, which maybe done formatively at the end of each activity and also summative when the specific allocation ends.

1.9.8 Learning styles- These are methods of interacting and preparing knowledge using specific steps or actions.

1.10 Variables

1.11.1 Dependent variables

The following was the dependent variable

1.10.2.1 Integration of theory to practice

The following were the independent variables

- Clinical supervision
    - Assessment strategies
    - Feedback system
- Student Related Factors
    - Learning styles
    - Relationship between teaching staff and nursing student
    - Relationship between clinical staff and nursing student
    - Communication

- Clinical Environment
    - Availability of resources
    - Staffing levels

Table 1: 3 Variables, cut-off points and indicators

Variables	**Indicators**	**Scale measurement/ Cut-off points**	**Question Number**
Dependent Variable Integration of Theory	Adequate	Agree	Question 1-9
	Inadequate	Disagree	
Independent Variables **Clinical Supervision**	Very Adequate	Agree	Question10, 11,12
o Documentation	Adequate	Not sure	
	Inadequate	Disagree	
o Feedback system	Very Adequate	Agree	Question 14- 17
	Adequate	Note sure	
	Inadequate	Disagree	
Student Related Factors	Very appropriate	Agree	Question 31, 32
o Learning styles	Appropriate	Not sure	
	Inappropriate	Disagree	
o Relationship between teaching staff, clinical staff and nursing student	Very good	Agree	Question 26 - 29
	Good	Not sure	
	Poor	Disagree	
Clinical Environmental factors	Very Adequate	Agree	Question 40- 42
o Availability of resources	Adequate	Not sure	
	Inadequate	Disagree	
o Staffing levels	Very adequate	Agree	Question 39
	Adequate	Not sure	
	Inadequate	Disagree	

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two presents the related literature that was reviewed on the subject of integration of theory into practice in clinical skills acquisition by nursing students. Literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection, critical analysis, and written description of existing information on a topic (Polit and Beck, 2003). The chapter begins by giving an overview of clinical education, followed by literature on factors that influence integration of theory into practice and concludes by summarising the gaps in the literature. Sources of literature for this study included published articles from computerized database such as Google scholar and PubMed to access Medline data base, textbooks, GNC documents and MoH documents. The main search terms used were clinical skills acquisition, clinical environment, clinical supervision and integration of theory into practice.

2.2 Overview of clinical education

The nursing curriculum consists of clinical and theoretical courses that complement each other. It is directed towards preparing professional and competent nurses who would apply their knowledge and skills throughout their work process (Akhu- Zaheya, et al., 2015). The curriculum covers both classroom and clinical learning as they both share equal importance and competencies are clearly articulated and organized throughout the course outline, from the easiest to hardest as the learner moves through the levels of knowledge and skills acquisition. The ability of the nursing students to perform competently in the clinical setting and advance professionally needs clinical education (Ibid). Clinical education has always been an important aspect of nursing education (Sharif and Masoumi, 2005; Tiwari et al., 2005 and D'souza, et al., 2013). It is a platform that is used to put into practice what has been learnt in class. Studies done in Iran have shown that clinical learning provides a student with the prospect of integrating the theoretical knowledge gained in class into practice (Zamanzadeh, et al., 2012). With repeated practice the nursing student develops the skills which are later expressed as competences.

Learning in the clinical environment provides the real world context for nursing students to develop the knowledge, skills, attitudes and values of a registered nurse. Initially all nursing students are considered novices upon commencing the nursing training because they do not have or have very minimal previous knowledge on clinical practice and progress to advanced beginner, competent, proficient and expert (Dumchin, 2010). The highest level is achieved with continuous practice in similar environment which has been observed among qualified nurses (Ibid). The literature described the influence of factors such as environmental factors, student related factors, as well as the clinical supervision (Mahmoud, 2014) had on clinical learning. Therefore this literature review focused on identifying these factors and how they influenced the integration of theory into practice.

2.3 Environmental factors

2.3.1 Clinical Environment

Clinical nursing education takes place in a clinical learning environment (CLE). Papastavrou et al. (2010) described the clinical environment as the conditions, forces and external stimuli that affect the individual student. The transition from the theoretical setting to the clinical practice site is commonly a time of apprehension for nursing students, particularly on their first placement (Croxon and Maginnis, 2007). From the learning point of view, a clinical placement is the location where manual dexterity, knowledge and affective behaviours are established in response to the classroom learning that has taken place (Bjϕrk, 2013). Additionally the clinical environment has competing demands, within which senior nurses ensure nursing students acquire the cognitive, skills and critical thinking approaches. These include adopting the speech, values, standards and adaptation to the nursing profession (Tiwali, et al., 2005). As stated by Msiska et al. (2014), learning in such an environment can be multifaceted.

However, the clinical environment can be unpredictable without specific order and overburdening (Cheraghi, et al., 2010), and it can enhance feelings of not being protected among nursing students (Changizi et al., (2012). Consequently such environments raises stress and anxiety levels among nursing students. Therefore, the nursing students have to learn to apply their theoretical knowledge to the clinical work in their first placements to new environments while being observed by their clinical instructors and their peers (Ratanasiripong et al., 2012).

It was also observed by Sharif and Masoumi (2005) and Ratanasiripong, et al. (2012) that lack of clinical experience, inadequate support, unfamiliar areas, difficult patients, fear of making mistakes and being evaluated by faculty members are anxiety producing situations. Hence it has been argued that anxiety is a major contributor to poor knowledge transfer due to nursing students' fear of the unknown, as well as a sense of lack of knowledge and uncertainty about the professional role of the nurse (Emmanuel and Pryce-Miller, 2013 and Humphreys, 2013). The mentioned factors and several others have been associated with the knowledge and clinical practice skills acquisition within the clinical learning environment.

2.3.2 Staffing Levels

There has been a substantial shortage of nursing staff noted globally (Eman et al., 2012). In order to become competent practitioners, nursing students need to be guided and supervised. As stated by Kapaghawani and Useh (2013), lack of supervision may lead to nursing students learning incorrect procedures, lack of competency and lack of interest in the nursing profession as they feel frustrated in their work. Besides, a clinical setting rich in learning experiences, but lacking a supportive environment, discourages the learners in seeking experience and results in the loss of learning and growth opportunities (Mabuda et al., 2008). Similarly Lamont, et al. (2013), noted that negative influences on satisfactory clinical placements have been identified as limited participation in patient care, not being included in ward activities, and inadequate support of clinical staff which could be attributed to inadequate staff.

In a study done in Malawi, findings were that nursing students practice in clinical settings was characterised by severe nursing shortages (Msiska et al., 2014), which had a negative impact on both clinical teaching and learning (Ibid). In a similar study done in Malawi by Katete (2014) 91% of Registered Nurses (RN) observed that shortage of staff and workload prevented them from teaching nursing students in the clinical Area. Another study revealed that a shortage of staff affected the conduciveness of clinical learning environments (Mabuda et al., 2008). This hindered nursing students from acquiring new knowledge.

2.3.3 Staff attitude

Attitude plays a key function in regulating human behaviour towards attaining goals, valuable development of multifaceted knowledge and being mindful of its magnitude about the learning environment (Awuah- Peasah et al., 2013). According to Dagdaran et al. (2012), when nursing staff have adequate information and good attitude towards students and interact appropriately, it promotes improved students' clinical performance.

In a study done in Norway, it was postulated that staff nurses who lacked motivation and had bad attitudes were unable to supervise nursing students and thus hindered students learning (Dale, 2013). However, it has been observed that there is an increase in negative attitudes exhibited by staff nurses and nursing students towards the nursing profession. This has been attributed to increased unimpressive workload, lack of rest and inadequate remuneration (Awuah- peasah et al., 2013 and Magobe et al., 2010). Furthermore the negative attitudes resulted in low spirits in performing nursing duties, role modelling to students as well as teaching students. This has progressively contributed to poor performance and lack of competencies in nursing students (Magobe et al., 2010).

2.3.4 Availability of Resources

Modern trends in skilled learning stress the importance of embodying the realities of clinical environments to academic training. Papathanasiou et al. (2013) posits that recent difficult economic developments pose a warning to holistic approaches, as the elements of cost-effectiveness and cost-cutting procedures tend to compel a new way of providing care, where saving resources is the ultimate goal. Hence this affects the need for adequate clinical practice for nursing students.

Furthermore, lack of clinical equipment and gross lack of supplies can be stressful to a nursing student in the clinical placement. According to a study done in Iran, it was observed that nursing students experienced a lot of anxiety due to insufficient medical surgical supplies in the hospital (Motlag et al., 2012). In a similar study done in South Africa and Malawi, nurses were unable to develop competences due to lack of equipment and most clinical allocations assigned to nursing students had inadequate supplies and equipment making it hard for the clinical staff to guide the students in their learning (Mabuda et al., 2008 ; Msiska et al., 2014).

2.4 Student related factors

2.4.1 Relationship with Nurse Educators and Clinical Instructors

Nurse educators, clinical instructors and mentors all play a role in ensuring that students learn and acquire skills necessary for them to perform as nurses. The role of clinical educators is to establish a favourable environment so that educational encounters can be conducted through direct instruction on student-conducted patient care and skills laboratory education (Taniyama, et al., 2012).

Additionally clinical nurse educators also are role models for students. According to Scully (2011) role modelling, socialising to the culture of the unit and assistance in the establishment of workplace relationships as well as education are among the roles of clinical educators. Studies done in Sweden have revealed that supportive learning environment including visits from nurse educators improves student learning outcomes (Kristofferzon, et al., 2012; Scully, 2011). The visit by nurse educators also motivated students to carry out preparatory work and discuss learning outcomes (Kristofferzon, et al., 2012). This multifaceted crucial role includes supporting, directing, motivating, facilitating, problem-solving, troubleshooting, advocating and monitoring (Ibid). However nurse tutors have found that other responsibilities such as classroom teaching and research requires to be attended to as well. Furthermore nurse educators need to update themselves with new knowledge if they have to be effective (Barrett, 2007). Hence nurse educators have had fewer encounters with nursing students while in the clinical placements. This has further confounded the ability of nursing students to apply what they learn theoretically into clinical practice.

2.4.2. Relationship with health clinical staff and the patient

While immersed in the 'messiness' and complexity of practice, students have opportunities to communicate with patients and their families, observe and learn from role models, and practise their skills under supervision (Levett-Jones and Lathleen, 2007). The health team encourages and provides professional and social support that helps students to be socialised in the environment they are practicing in. A welcoming, approachable and friendly demeanour coupled with a willingness to teach are proposed as attributes that existing placements for staff require to enable a constructive learning environment, (Lamont et al., 2013) and thus create a sense of belongingness.

In a study done in Iran, nursing students believed that having a good and adequate relationship, especially with patients and the medical team was very essential in promoting learning, (Zamanzadeh et al., 2012). Similar studies done have shown that the belief that nursing students were accepted and valued as students was a significant motivator for their learning, (Motlag, et al., 2012; Levett-Jones and Lathleen, 2007). Students need support and guidance from the staff to bridge theory and practice gap, (Thrysoe, et al., 2010), and to be integrated in the community by sharing and building communication and familiarity (Henderson et al., 2006). However it has been observed that members of staff are not available to provide the recommended attention to students. Several factors prevent staff nurses from competently performing this duty, including insufficient time, insufficient staffing levels, the need to prioritize patient care, and inadequate staff training (Taniyama, et al., 2012).

2.4.3 Relationship with Fellow Students

Through interaction students learn to interrogate issues, share ideas, clarify differences and construct new understandings, (Gillies and Boyle, 2010). Student interaction also leads to opportunities for improving communication skills, and more importantly, to collective problem solving (Earl, 2009).

2.4.4 Communication

Communication is the process of exchanging information and the process of generating and transmitting meanings between two or more individuals (Baghgechi, et al., 2011). The nursing students need to interact with the patient, their significant others and the medical team. Nursing students should be able to communicate with accuracy, clarity and efficiency with patients and their families through interpretation of facial expressions, affect and body language (Ibid). Inadequate communication between such institutions can produce tension and lead to less co-operation, thereby affecting students' opportunities to learn during their placement (Birsholt, et al., 2013). The nurse tutor and clinical Instructor should have good interpersonal relations and good communication skills. These will help to facilitate transfer of knowledge into practice.

When a student is introduced to the clinical practice they need to be socialised to the clinical environment and the work going on. Poor professional socialisation has not only proven to create increased anxiety levels in students, but also places a barrier between the theory they are taught and how they are permitted to apply it in the clinical setting, hence contributing to the phenomenon of the theory-practice gap (Maben et al., 2006; Sharif & Masoumi, 2005).

2.4.5 Level of Training

The level of training of a student offers different challenges and affects how the student will adapt to the given situation. According to Collins (2007), a nursing student has to adjust to the environment situations before they can start learning. These environments can be challenging and stressful so much that the student may fail to cope.

In a study done by Sharif and Masoumi (2005), among second, third and fourth year nursing students, second year nursing students had greater deal of anxiety than the third year nursing students. Initially they experienced more anxiety as a result of feeling incompetent, and lacking professional nursing skills and knowledge to take care of various patients in the clinical setting, (Sharif and Masoumi, 2005). Therefore there is need to prepare nursing students according to individual needs for them to benefit from each level of placement. It must also be remembered that required competencies in nursing are developed at the entry level, specialty level and at the advanced practice level (Atanga et al., 2014). Valuable clinical time should this be utilized effectively and productively as planned by the nurse educators and according to the expected competencies and level of training (D'souza, et al., 2013).

2.4.6 Learning styles

Teachers need to take into consideration individual learning styles in order for integration of theory to practice to take place. Nursing students are not homogenous in relation to their learning capabilities. According to Frankel (2009), there are differences such as, what stimulates someone to learn, personal attributes and the basic knowledge and understanding of what is to be learned. He further argues that their ability to reason influences them to learn easily or to delay their learning. Therefore learning styles are important and individual needs have to be considered if learning has to be successful (Dagdaran et al., 2013). The teacher guides the nursing student into use of methods that are appropriate for each given experience.

Hope et al. (2010) argues that nursing students gain knowledge by utilization of active performances and also rehearsing what has been taught. Frankel (2009) further states that visual learning and practice styles are some of the learning styles that need to be utilised. Therefore it is imperative that a variety of methods are considered as we prepare the nursing students.

2.5. Clinical supervision

Supervision has been defined as a pedagogical human growth process, where the participants raise questions, explore, explain and organize care experiences from a point of view that is well thought-out and holistic in a professional context (Amsrud et al., 2015). Furthermore, Brunero and Stein-Parbury, (2011) alludes to clinical supervision as a process of professional support and learning in which, nurses are assisted in developing their practice through regular discussion time with experienced and knowledgeable colleagues.

According to Abbidin (2008), clinical supervision consists of three important processes, that is; monitoring process, the support process and the learning process. Studies done in Norway, have asserted that the theory of supervision is used with a unifying connotation and includes different aspects of supporting nursing students in their clinical learning, e.g. teaching practical skills, assessing and facilitating learning, supporting the nursing students in obtaining clinical knowledge, giving feedback, facilitating the fusion of theory and practice, role modelling and engaging in critical reflection with the student (Skaalvik, Normann, & Henriksen, 2009). Amsrud et al. (2015) posits that clinical supervision focuses on, facilitating students' learning and strengthening students' professionalism. Clinical supervision provides an avenue for nurses to demonstrate active support for each other as professional colleagues.

Therefore there is need to enhance supervision in the clinical area as it promotes team work and promotes sharing of ideas among nursing students. Through sharing and understanding they come to realise that they are 'not alone' in their feelings and perceptions, thus providing reassurance and validation. Consequently it is needed to look at different perspectives that clinical supervision has been viewed in integration of theory into practice and improvement of clinical skills acquisition.

2.5.1 Pedagogical Factors

The clinical environment is complex and rapidly changing, with a variety of new settings and roles in which nurses must be prepared to apply the knowledge they have learnt, (Zamanzadeh, et al., 2012).This thus, demands a new approach to teaching and learning. According to Chambers et al. (2013), if nurse education is to truly prepare nurses to function in such an environment, then the aim of nurse education has to change from learning what is known towards educating for the unknown future and the focus should be on active learning (Baghchegai, et al., 2011).

A variety of strategies and styles of learning for nursing student placements are used to meet a number of ideals for placement (Bourgeois, 2011). Many methods are being developed. For example, simulation, cooperative learning, case studies, reflection and discovery learning. These methods guides nursing students to explore what can work best for them. Some of the other strategies that have been used for learning include peer learning. Peer learning refers to 1st and 3rd year nursing students learning with and from each other, collaborating, sharing ideas, knowledge and experiences during clinical placements (Brynildsen et al., 2014).

Peer learning can help novice nursing students to deal more effectively with the challenges during initial clinical placements, increase their confidence in clinical practice and develop their knowledge, skills and attitudes (Brynildsen et al., 2014). It also allows the individual student to bring their own experience to the learning process (Baghchegai et al., 2011).

This was emphasised in Zamzaden et al. (2012) study in Iran, they identified utilization of different strategies such as socio cultural based and scaffolding to promote integration of theory into practice. Social culturally learning is a learner-centred and self-directed model of learning with more active participation of learners. . However these strategies need to be appropriately applied in order to augment learning and promote integration through incorporating other strategies.

There has been a challenge in the implementation of these strategies as was observed by Dale (2013) in Norway that nurses who were knowledgeable and had the appropriate qualifications promoted quality learning experiences. It was also observed that some supervisors and junior nurses who had inadequate knowledge in these new approaches did not have the competency and skill of the appropriate strategy to use in the clinical setting

According to Cheraghi. et al, (2012) nurses in the wards are inclined to follow the routine approaches, which may further widen the gap. It is important to ensure that persons responsible for clinical teaching are adequately prepared for the obligation. This will enable adequate supervision of nursing students in integration of theory into practice in clinical skills acquisition. Therefore there is need to evaluate the ability of the student to integrate theory into practice using such strategies and other learning approaches in the clinical area.

.

2.5.2 Assessment

Assessment has always been an integral part of learning, as teaching and assessment are integral parts of one learning process (Atanga, et al., 2014). It is defined as the exercise of judgement on the quality of students' work as a way of supporting learning and appraising its outcome (Sandy 2014). Assessment provides a more holistic picture of a student's performances or student's abilities and capabilities making him/her competent (Ibid). It also helps in providing information on whether the methods used for learning and teaching are the appropriate ones. A study done in Ireland showed that nursing students' constructs of learning, were primarily dependent on their interpretation of the demands of the assessment tasks (Tiwari, et al., 2005).

It follows that if students perceive the assessment tasks as something that require only low cognitive activities such as factual recall, they are more inclined to rote learn specific facts or pieces of disconnected information and reproduce them at the time of the assessment (Tiwari et al., 2005). It is therefore important for educators and supervisors to maintain a holistic approach in assessing in order to avoid superficial learning and provide a more holistic picture of the students' performances or students' abilities and capabilities, thus making him/her competent (Atanga et al., 2014).

The assessment done in nursing is composed of written and practical examinations. The written examination includes essay questions. In a similar study done in Malaysia, paramedicals that includes nurses also have a written component of examination in form of essays. According to Mahmud (2013), essay examinations involve several levels such as knowledge, understanding, application, synthesis and assessment. In the assessment of competence, the mentor seeks to assess practical\technical skills, communication/interpersonal skills, organizational skills, knowledge base, safe practice, critical thinking skills, and ability to function as a team member (Atanga et al., 2014).

Thus students need to be able to integrate both aspects of theory and practice. Some studies done have also suggested that evaluation of performance was an anxiety-producing situation for nursing students, and the high levels of anxiety generated could hinder their learning (Mahmud, 2013). There is need therefore to select assessment methods that are appropriate and yet producing low levels of anxiety.

2.5.3 Feedback

Feedback is an important factor in nursing students' learning as it helps to identify the nursing students learning needs and the best learning styles which help in acquiring knowledge and skill. When on clinical placements, nursing students receive feedback on their real world performance and are guided to reflect on their lived experiences as individuals and nurses (Levett-Jones and Lathleen, 2007). Feedback is provided by clinical instructors, mentors, preceptors and nurse educators (Kapaghawani and Useh, 2013). Skills acquisition is one element of attaining competence in nursing and this can be achieved through the interaction of classroom education, clinical supervision and the constant feedback and reflection tailored to the individual student's need based on their self-motivated identification (Scully, 2011).

2.5.4 Student Engagement

Student Engagement can be defined as students' willingness to carry on regardless of hurdles and encounters in the clinical environment, and to keenly take part in the clinical learning process (D'souza et al., 2013).Students come from diverse backgrounds, mature males and females (Wall et al., 2014), and those with basic nursing studies who are upgrading. In order for the students to be engaged they need to be provided with the support that will meet their different diverse groups (D'souza et al., 2013). Therefore nurse educators need to employ the different students' group using technology and innovative approaches to teaching that are experiential and building upon the essential professional knowledge and skills, (Wall et al., 2014).

Furthermore, there is need to provide a clinical environment that enhances engagement for the novice nursing students and the advanced beginning student. This can be achieved through engaging nursing students in self directed learning. Self directed learning is an essential vehicle for nursing students to develop self directed learning skills and a dedication to lifelong learning. It increases their capacity for knowledge in dynamic and challenging work environments (Levett-Jones and Lathleen, 2007).

Similar studies have posited that engaging students in their learning increases their ability in critical thinking and problem solving (D'souza et al., 2013). The aim of clinical education is to develop in the student the professional skills and knowledge needed in life-long learning and critical thinking, to construct self-confidence as a nurse, and to ensure that the nurse is able to make his/her own decisions and be self-governing (Papp et al., 2003). Critical thinking has been defined as a mental process of actively and skilfully perception, analysis, synthesis and evaluation of collected information through observation, experience and communication that leads to a decision for action (Papathanasiou et al., 2014). Critical thinking in nursing is an essential component of professional accountability and quality nursing care as it promotes good patient outcomes. It also promotes good decision making which enhances solving of problems. When nursing students utilise these attributes then they are able to learn and integrate new concepts and gain new knowledge.

The intention of clinical supervision in nursing students' learning includes maintaining and promoting care standards, practice resolute professional relationships and reflecting on high quality of practice with an experienced practitioner (Amsrud et al., 2015). Therefore nurses need to be prepared for their future professional practice with tools in the form of knowledge; skills and attitudes, enabling them to continuously improve the quality and safety of care, and provide the required supervision for nursing students be able to integrate theory into practice.

2.6. Relationship among variables

Learning in the clinical setting is intrinsically complex because its primary concern is patient care and not student education. This implies that patient needs take precedence over a student's learning needs and sometimes this can compromise students' learning (Msiska et al., 2014). This is compounded by the ward learning environment which has a lot of stimuli making it hard for a student to identify potential learning opportunities and obviously nursing students feel overwhelmed (Papp et al., 2003). Studies done have shown that experiences, including application of theory to practice, effective mentoring and constructive feedback positively influence learning (Kapaghawani et al., 2013). Feedback helps students to gain confidence as through feedback students know their strength and progress (Kapaghawani et al., 2013).However shortages of staff makes giving of feedback a challenge. The registered nurses who are supposed to observe and assess the nursing students are pre occupied with provision of nursing care.

This leads to non availability of time to give the much needed feedback. It has also been postulated that poor relationships with clinical staff, lack of support from educators and lack of challenging learning opportunities are some of the negative experiences that may also affect students' learning (Kapaghawani et al., 2013). Therefore there is need to consider these factors when planning clinical placement and learning for nursing students

Assessment stands as an important aspect because it provides a reflection on the effectiveness of curriculum implementation (Mahmud, 2013). It has been observed that evaluation of performance is an anxiety-producing situation for nursing students and the high levels of anxiety generated could hinder their learning (Tiwali et al., 2005). Some studies done have concluded that there is a need for teachers to become aware of the kind of learning strategies that various forms of instruction and assessment tend to evoke in students (Tiwari et al., 2005). Furthermore Tiwari et al. (2005) also described how learning could be compromised when students were evaluated for a grade. Therefore the assessment criteria need to examine the aspect of how a student can connect between theory and practice (Mahmud, 2013).

2.7. Relationship between students related factors, pedagogical and environment and integration of theory into practice

The quality of nursing education depends largely on the quality of the clinical experience planned in the nursing curriculum (D'Souza, et al., 2013). The integration of theory and practice is, however, a multi-factorial problem of which environment, student relationships and pedagogical atmosphere are among others are impacting on it (Benner et al., 2004; Bergjan and Hertel, 2012; De swardt, 2010).

Relationships relating to the people who the student interacts with, such as professional nurse practitioners, clinical instructors, nurse educators, mentors and preceptors, may either support or impede the learning and practice of the students (Maben et al., 2006 ; Mahmud 2012). There is no doubt that collaboration between classroom teachers and clinical educators would be invaluable to create an environment of continuity and lower anxiety for the nursing student through familiarity (Scully, 2011). Lecturers are important individuals in the learning process. According to Mahmud (2012), lecturers are not only teaching theory in the lecture room, but they also teach and perform clinical observations in the learning of the nursing students.

Furthermore, Corlett et al. (2003), points out that the implementation of theory and practice can become more effective if the lecturers involved in theory teaching at the nursing school also teach and supervise their students during clinical practice. This helps in ensuring that the competencies planned in curriculum are achieved and the skill is acquired through the integration of theory into practice. However Ousey and Gallagher (2007), observes that it is not the learning of the skills but the inability of the students to transfer classroom learning to the clinical environment that leads to inability to integrate.

Studies done indicate that students want to function in learning groups and maintain open lines of communication with their trainers (Henderson et al., 2006a ; Levett-Jones et al., 2007) in order for them to learn and acquire the skill. For the lecturers to know whether integration has occurred competencies can be assessed using various evaluation techniques such as tests, quizzes, assignments, online discussions. The inability of nursing students to integrate theory into practice as a result of lack of practice derails the students' ability to learn the skills (Wall et al., 2014). Therefore, there is need to consider these factors and those that affect the clinical skills acquisition in the Zambian nursing schools with emphasis on Livingstone school of nursing.

2. 8 Conclusion

Clinical education is an integral part of nursing education. It covers the application of what has been learnt in the classroom and applying it in the real ward situation and on the actual patient. The literature review explored different factors that can influence integration of theory and practical skill acquisition in the clinical practice. The factors that were looked at were the clinical environment, clinical supervision and student related factors. The literature review revealed that theory practice gap exists , and that the clinical environment, clinical supervision and student related factors may influence the integration of theory into practice as well as clinical skills acquisition among nursing students. Despite there being a plethora of studies on clinical education, there is limited information on factors that influence the integration of theory into practice in Zambia.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the research design, the study setting, study population, ethical consideration and sampling methods that were used to answer the research questions. The data collection tools, data collection technique and data analysis methods, validity and reliability, pre-test are also stated.

3.2 Study design

A mixed methods approach using concurrent transformative design (Creswell, et al 2003) was applied in this research. Mixed methods follow a pragmatic worldview which combines both quantitative and qualitative approaches (Johnson and Onwuegbuzie, 2004). A mixed methods research design involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority and involve the integration of the data at one or more stages in the process of research (Creswell et al, 2003).

A cross sectional descriptive survey was used for the quantitative approach. This is when a record of views of the population is taken at one point in time (Cohen et al, 2007). This study design was selected for this study because it is not so expensive and is less time consuming considering that the study had to be conducted within the limited academic time and resources. The study design permitted the researcher collects information from nursing students without manipulating the study environment. A descriptive qualitative design for the qualitative approach was used as it gave an in- depth meaning to the topic being researched on. It also provided comprehensive summaries of the phenomenon or of events in everyday language within the premises of naturalistic inquiry as the researcher could not penetrate the data in any interpretive depth, (Polit and Hungler, 2013 and Sandelowski, 2000).

3.3 Research setting

The study was conducted at Livingstone Schools of Nursing and Midwifery. The School is located within Livingstone Central Hospital in Livingstone district; it is about 481 km south from Lusaka.

It was opened in 1950 and was training enrolled nurses but started offering a diploma in nursing in 1999. Currently, the School offers the diploma programme in nursing using two approaches, that is, face to face direct teaching and E Learning through distance education. One intake is recruited every year and there are three intakes in training at each given time. That is first year, second year and third year students. There is a theory block for specific courses according to level of training followed by clinical placements for the same courses that were taught. The School also offers a certificate in midwifery. Livingstone Central hospital provides most of the clinical placement for nursing students apart from some primary health care activities. These are undertaken in Livingstone urban district health centres and rural attachments which are Macha, Chikuni and Mwandi Mission Hospitals. These sites were chosen as they provide adequate opportunities for practicing in primary health care.

3.4 Study population

The population included all nursing students who had been enrolled in both the face-to-face and E- Learning registered nursing programs at Livingstone Schools of Nursing and Midwifery irrespective of the mode of training and level of training

3.4.1 Target population

The target population included all nursing students in the face to face regular programme using traditional method of learning who had been in training for more than three months and in the clinical area for at least four weeks including all the three intakes of training. They were chosen for the study because they were taught face to face and were supervised by the teaching and clinical staff within hospital of which generalizations of the study was to be made. These nursing students were able to provide necessary information on the factors that could influence integration of theory into practice in clinical skills acquisition. This gave the researcher the opportunity to collect information from the direct nursing students who also had similar characteristics of interest for study by the researcher. The target population for the qualitative study focused only on the second year and third year students who had been in training for longer and had passed through in both general wards and some speciality wards.

3.5 Sample selection

3.5.1 Quantitative method

Probability sampling was used. Stratified random sampling was used to select subjects based on their level of training. It was done by grouping the nursing students according to their level of training, that is; first year, second year and third year students. Then simple random sampling was used to select the students who participated in the study in relation to the calculated sample size. Small and identical pieces of paper with numbers written on them were prepared. The numbers represented the nursing students as listed on the sampling frame. The pieces of paper were then mixed thoroughly together by shaking the box. Then one piece of paper was blindfold picked at a time without replacement until the required sample size for the study was reached. The method ensured that each nursing student had an equal chance of being included in the sample and this was feasible in terms of time, human, financial and material resources.

3.5.2 Qualitative data sampling

Purposive sampling also known as judgmental or theoretical sampling was used. The sampling method helped the researcher to get nursing students who have had enough experiences from both theoretical and practical learning settings. The students had been to most general wards and some speciality wards. Therefore they had been engaged in the clinical environment for a longer period of time.

3.5.3 Inclusion criteria

The following were included in the study as they met the inclusion criteria set by the researcher.

1. All nursing students aged 18 years and above who had been in training for more than three months and had been in the clinical area at least in one clinical allocation for a minimum period of four (4) weeks at the time of the study
2. Had been allocated to the clinical area at the time of the study or previously.
3. Those students who were available at the time of the study and were willing to participate.

4. For the focus group discussion, the student were in their second or third year of training

3.5.4 Exclusion criteria

Those who did not meet the inclusion criteria set by the researcher were excluded from the study.

1. All students who were not willing to participate and had not given consent.
2. Those students who had been in the clinical area for less than four weeks.
3. Any student who would have been in training for less than three months.
4. The first year nursing students for the focus group discussions
5. Students using the E learning method of learning and students from other nursing training institutions who would be found doing their clinical attachment at the time of the study.

3.5.5 Sample size

Sample size is the number of participants in a sample, (Khadam and Bhalerao, 2010). The sample size was calculated manually using formula (Krejcie &Morgan, 1970) for determining small sample size. The total population for nursing students pursuing a diploma in registered nursing in the regular approach were 117.

$$S = \frac{x^2 NP (1-P)}{d^2 (N-1) + x^2 P (1-P)}$$

S = the required sample size

N = Population size

X = Z value (e.g. 1.96 for 95% confident level)

P = Population proportion (expressed as decimal) (assumed to be 0.5(50%)

d= Degree of accuracy (5%) expressed as a proportion (0.05); it is the margin of error

$$\text{Sample size} = \frac{1.96^2 \; 117 \; 0.5 \; (1- 0.5)}{.05^2 \; (117-1) + 1.96^2 (0.5) \; (1- 0.5)}$$

$$= \frac{3.8416\ (58.5)\ (0.5)}{(2.5X10^{-03}) + 3.8416(0.5)\ (1- 0.5)} = 90$$

The total number of the respondents was 90 and they were sampled proportionally according to year of intake using the following formula:

$$\text{Number of respondents} = \frac{K \text{ X Total sample}}{\text{Total Population}}$$

K = the number of students per intake

Third year students $= \frac{63 \text{ X } 90}{117} = 49$ Second year students $= \frac{34 \text{ X } 90}{117} = 26$

First year students $= \frac{20 \text{ X } 90}{117} = 15$

The total number was 49 third year nursing students, 26 second year nursing students and 15 first year nursing students respectively for quantitative data. This promoted adequate presentation from all groups.

For the focus group discussion they were 9 and 8 per group making a total of 17 participants for the two focus group discussion sessions. They were also grouped according to the level of training to ensure those with similar characteristics or homogenous group were together.

3.6 Data collection tools

3.6.1 Quantitative Tool

Self Administered Questionnaire (Appendix III)

A self-administered questionnaire adapted from the clinical learning environment and teaching scale, which measures the clinical learning environment of students and their integration of theory into practice (Dlamini, 2011 and Saarikoski, 2008) was used to collect data from the respondents. It was designed using a five point Likert scale to rate the views of participants ranging from ‘strongly agree’, ‘agree’, ‘not sure’, and ‘disagree’ to ‘strongly disagree’.

The scale was further collapsed to two for the dependent variable and three levels for the independent variables. This was to facilitate analysis of the relationships between variables. The questionnaire was divided into three parts. Part one comprised questions on the

demographic characteristics of the participants which included gender, age, program and level of training. The second part of the questionnaire comprised items on possible factors influencing integration of theory into practice. They were 9 responses on integration of theory, 11 responses on clinical supervision, 8 responses on clinical environment and 7 responses on student interaction. Part three consisted of open-ended questions, which looked for descriptions or suggestions of what students thought could be done by both students, and faculty to integrate theory into practice in nursing education.

3.6.2 Qualitative Tool

3.6.2.1 Focus Group Discussion (Appendix VI)

To collect qualitative data, a focus group discussion guide was used. The focused group discussion (FGD) guide included questions. The other sections consisted of questions eliciting information on factors influencing integration of theory into practice in clinical skills acquisition. The total of two (2) focus group discussions was conducted in one of the classroom. The discussion lasted about 35 minutes and comprised of eight (8) to nine (9) participants in each group respectively. (Group A) comprised of nine (9) third year nursing students, in the final year of training. Six (6) of them were females except for three (3) who were males. Group B comprised of eight (8) discussants who were second year nursing students. Six (6) of the respondents were female while two (2) were males. All the eight (8) respondents had just completed their speciality allocation and were in block for the second year classroom allocation.

3.6.3 Quantitative data

3.6.3.1 Validity

Construct and content validity were measured by checking items in the data collection tool against the objectives of the study and the concepts in the conceptual framework, to establish if all elements being investigated were measured. Questions were constructed in a simple, clear and precise way in order to give respondents chance to give clear and precise answers which brought out factors that influenced integration of theory into practice.

The questionnaire was adapted from the clinical learning environment and teaching scale thus it had, already been tested. It has been used in the United Kingdom (UK) and Swaziland with reliability of Cronbach's alpha coefficient for the CLES+T categories ranging from .77 to .96 and correlation coefficient at 0.74, respectively (Saarikoski, 2008; Dlamini, 2011). Combination of qualitative and quantitative methodologies were used to examine complex concepts. Furthermore positive questions were used in the questionnaire to avoid the mistake of negative coding in data analysis. The instrument was pretested using pilot study held at Kabwe Schools of Nursing And Midwifery.

3.6.3.2 Reliability

Pretesting of the instrument was done through a pilot study to check whether the instruments were able to bring out consistent information about factors influencing integration of theory into practice in clinical skills acquisition. An adjustment as was necessary was done to the data collection tool. The questionnaire was organized in a way that the questions were harmonized, accurate, clear, and simple to avoid vagueness and misinterpretations.

3.6.4 Qualitative data

3.6.4.1Trustworthiness

Trustworthiness was established using the criteria of dependability, conformability, transferability and credibility (Graneheim and Lundman, 2004).

3.6.4.2 Credibility

Credibility refers to confidence on how well data and processes of analysis address the intended focus (Graneheim and Lundman, 2004). Credibility was achieved through planning of the study with those who were knowledgeable and prolonged engagement with the participants. Similar questions were used for all the participants. The data was also confirmed by the participants at the end of each interview session. This helped in confirming the information and corrections of any errors in the data collected during interview.

3.6.4.3 Dependability

Dependability is defined as an inquiry that provides its audience with evidence that if the study was to be replicated with the same respondents, in a similar context, similar findings will be revealed (McFarland, 2009).

This was achieved by recording the FGDs and transcribing and recording the interview data verbatim to ensure representation of participant information.

3.6.4.4 Confirmability

Confirmability which refers to objectivity of the researcher (McFarland, 2009), explained how the findings was supported by the collected data. This involved repeated reading of data to identify relationships between the responses, categories and the whole text. It was further guaranteed by the assistant who assisted with audio recording and the records were kept for audit trail.

3.6.4.5 Transferability

Transferability has been defined as the extent to which the findings can be transferred to other settings or groups (Polit and Beck, 2003). According to Granheim and Lundman, (2003) transferability can be achieved through giving a clear and distinct description of culture and context, selection and characteristics of participants, data collection and process of analyses. Transferability was ensured through evaluation of the work as it developed through the use of a reflective journal. A journal is written information kept by the researcher in order to reflect on, tentatively interpret and plan data collection (Wallendorf and Belk, 1989). It helped in detecting influences of the researcher's personal frame of mind, biases, and tentative interpretations on the data that was gathered.

3.7 Data collection technique

The data was collected from the nursing students in the classroom that was prepared for the same. The researcher ensured that privacy was maintained by only allowing those participating in the study to be present.

3.7.1 Data collection technique for quantitative data

Data was collected from the nursing students from December to January 2017. A self administered questionnaire was distributed to each nursing student at a time in a classroom for participants' privacy. Nursing students who were in their first, second and third year were approached to request for their participation in the study. Then self introduction to the participants was done to make them less anxious and create a working rapport. The purpose of the study was explained to participants for them to give informed consent.

Questions were read out to the participants and clarifications on questions not fully understood were done before signing of the consent form. Consent, both verbal and written was obtained before giving the questionnaire. Confidentiality was assured with the use of unique identification codes and not names. The participants were informed that participation was voluntary and that they were free to decline participation or withdraw from the study at any point, without giving any explanations or fear of penalty. The participants were allowed to complete the form on their own and return them within 24 hours. None of the participants who met the inclusion criteria declined to return the questionnaire.

3.7.2 Data collection technique for qualitative data

Focus Group Discussions were conducted for the second year and third year students in a private classroom or area that was provided for by the researcher. The focus group discussions are interviews with groups of 6 to 10 participants whose opinions and experiences are solicited simultaneously (Burns & Grove, 2009). The FGDs were conducted in a noisy free and private environment. All the respondents were nursing students currently pursuing their studies at the training institution. The discussions comprised of eight (8) to nine (9) participants in each group respectively. The first group (Group A) of nine (9) comprised third year nursing students aged 19-24 years who were currently in their final year of training. Six (6) of them were females except for three (3) who were males. The second group (Group B) comprised of eight (8) discussants who were second year were nursing students aged between 19 and 23 years. Six (6) of the respondents were female while two (2) were males. Permission from the participants was obtained prior to data collection. The purpose, nature, beliefs and risks of the study were explained to the participants including on how the findings were going to be utilized. Permission to use the tape recorder was sought from the participants.

All participants were given information regarding direct and indirect benefits from the study. Participants were given time to go through the information sheet (appendix IV) and thereafter signed the consent form. Assurances were given that all the information that was provided by the participants was treated with confidentiality. Participants were availed with the consent form (appendix V) on which they appended their signatures as endorsement to participate in the study.

The researcher moderated the discussions and asked the questions accordingly. A recorder was used to record audio information during the entire discussions and the research assistant took notes of the discussion and other behaviours observed. Before each discussion begun, the researcher would introduce herself to the respondents and asked them general questions about their school experiences and activities they were involved in. This was to make the participants be at ease.

Respondents were then assigned numbers to ease discussions because their names were withheld to maintain confidentiality. Permission was sought from the respondents to begin the discussions, and they were all encouraged to participate. The discussions were conducted in English as medium of communication. Using the focus group discussion guide, the researcher initiated the discussion by introducing the topic for discussion and asked participants to discuss freely, and the researcher moderated the discussion. Talkative participants were thanked for their contributions but were asked to give chance to the quiet ones to also express their views so that the discussions were not dominated by the same participants. The discussions lasted for 30 to 45 minutes each. At the end of the discussion, participants were given chance to ask questions which were answered. Each participant was thanked at the end of the discussion. The total of two (2) focus group discussions was conducted. The number of FGDs held was not predetermined. The discussions lasted for 30 to 45 minutes for each group. The researcher conducted the FGDS until a saturation point was reached. The saturation point was decided upon as no new information was coming from the discussions.

3. 8 Pilot study

A pilot study was done with nursing students at Kabwe Schools of Nursing and Midwifery.
The participants included first, second and third year nursing students. They were 10% of the actual study totalling 9 respondents. The participants were grouped according to the year of study and simple random sampling was used to select three from each intake of first, second and third year nursing students. They helped the researcher identify any part that needed modification.

One FGD comprising of 6 students was done with second and third year students. The pilot study was done too detect any errors in the questionnaire for the main study, Assess the duration of each FGD, assess the appropriateness and clarity of questions.

After the pre-test, adjustments were made to the self administered questionnaire and the FGD guide as need arose. Thus the researcher was able to make necessary revisions prior to the study.

3.9 Ethical consideration

Ethical approval was sought from the University of Zambia Biomedical Research Ethics Committee (UNZABREC). A written permission was sought from the Medical Superintendents for Kabwe General Hospital and Livingstone Central Hospital respectively, as well as Principal Tutors for both Kabwe School of Nursing and Livingstone School of Nursing respectively. The purpose of the study was explained using the content in the participant information sheet and a written consent was obtained from each participant before collecting data. Those who consented were asked to sign the consent form, which was explained fully to them. Study participants were told that they were free to withdraw from the study at any time without suffering any consequences.

Giving of Questionnaires and FGDs were conducted in privacy where only the participants and the research were free to enter. Confidentiality was ensured by guarding against unauthorized access to the data, the data was secured and audio data was erased from the tape after completion of the research. Anonymity was maintained by numbering the participants and by destroying the names attached to the numbers after the research. The participants were informed that participation in the study was purely on voluntary basis and no form of payment or incentives were to be provided.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter described how data was analysed and presented findings of the study conducted on factors influencing integration of theory into practice in clinical skills acquisition among nursing students at Livingstone School of Nursing, Zambia.

4.2 Data analysis

4.2.1 Quantitative data

After data was collected, the questionnaires were checked for completeness, consistency, legibility and accuracy. Categorization of the open-ended questions, which involved reading through all responses and grouping answers that belonged together, was done. This enabled the researcher to report percentage of respondents giving answers that fell in each category. Codes were assigned to each category, entered and analysed using SPSS version 23.0 software. Confidence interval was set at 95%. A 5% level of significance was set, and only p values of 0.05 or less were considered statistically significant. The Chi-Square test and logistic regression were used to test for association between the dependent variable and independent variables, which were integration of theory into practice, clinical environment, student related factors and clinical supervision.

4.2.2 Qualitative data

Content analysis, which involved classifying words in a text into a few categories chosen because of their theoretical importance (Burns and Grove, 2009) was used to analyse data. After each FGD, the recorded information from the recorder was played to the participants to check if there were any changes that study participants wanted to make to the recorded information. Verbatim transcriptions were done and thereafter data was read through several times in order to get the key points and general ideas expressed. Transcriptions from the two FGDs were compared.

4.3 Data presentation

Research findings were presented according to the sections of the questionnaire. Some data were grouped together to give an overall picture. Data were presented using frequency tables, histograms, pie chart, and cross-tabulations to communicate research findings.

4.3.1 Section A. Socio demographic data

This section consists of the frequency table representing the age, level of training and gender of the respondents.

Table 4:1 Socio demographic characteristics of the study population (n= 90)

Students' demographic data	**Frequency**	**Percentage**
Sex		
Male	24	26.7%
Female	66	73.3%
Total	**90**	**100%**
Age		
19 – 22 years	38	42.2%
23 – 24 years	30	33.3%
25 – 40 years	22	24.4%
Total	**90**	**100%**
Level of training		
Year 1	15	16.7%
Year 2	26	28.9%
Year 3	49	54.4%
Total	**90**	**100%**

Table 4: 1 shows that most of the respondents 73.3% (66) were female while 42.2% (38) respondents were aged between 19 and 22 years. The mean age (years) of the respondents was 23.8 (95% CI, 23.02 - 24.73). Furthermore majority of the respondents 54.4% (49) were in their third and last year of training.

4.3.2 Section B: Factors influencing integration of theory into practice in clinical skills acquisition

To explore the students' understanding of ways of integration of theory into practice in clinical skills acquisition, a total of 9 questions were used to measure this variable which utilised a five- point Likert scale: l-Strongly Disagree, 2-Disagree, 3- Not sure, 4- Agree and 5-Strongly Agree. The minimum score for the variable was 9 while the maximum score was 45.

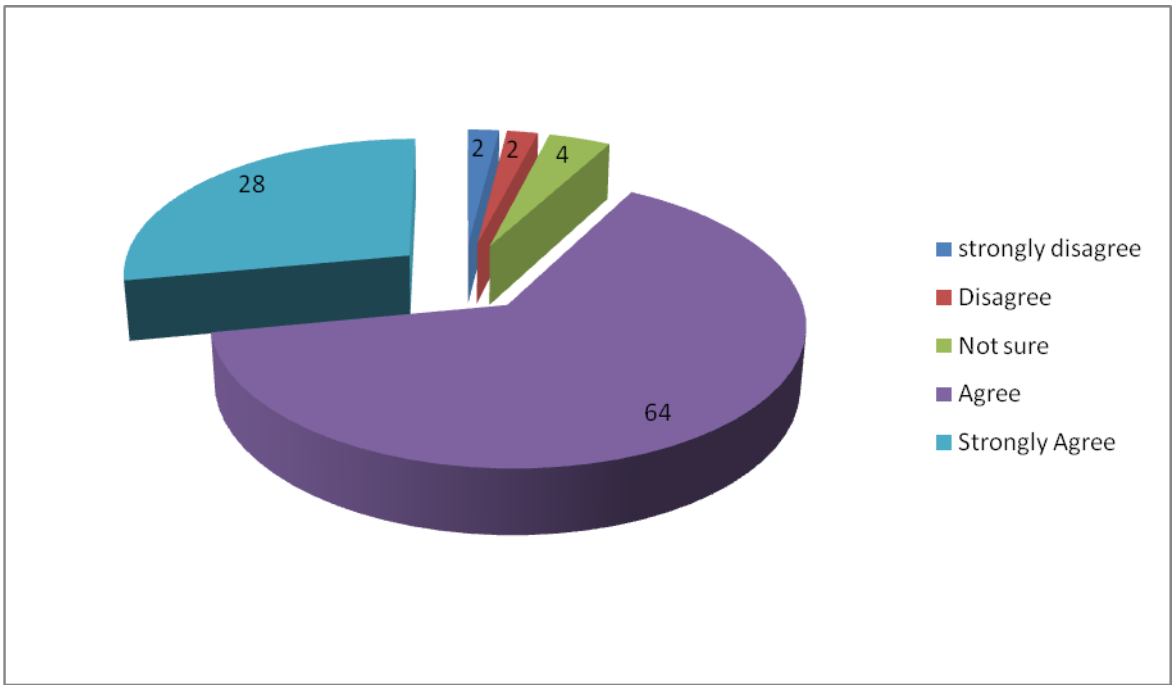

Figure 4:1 Prescribed learning materials (n=90)

Figure 4:1 shows that majority 64% (58) agreed that the prescribed reading materials promoted integration of theory into practice in clinical skills acquisition while 2% (2) strongly disagreed.

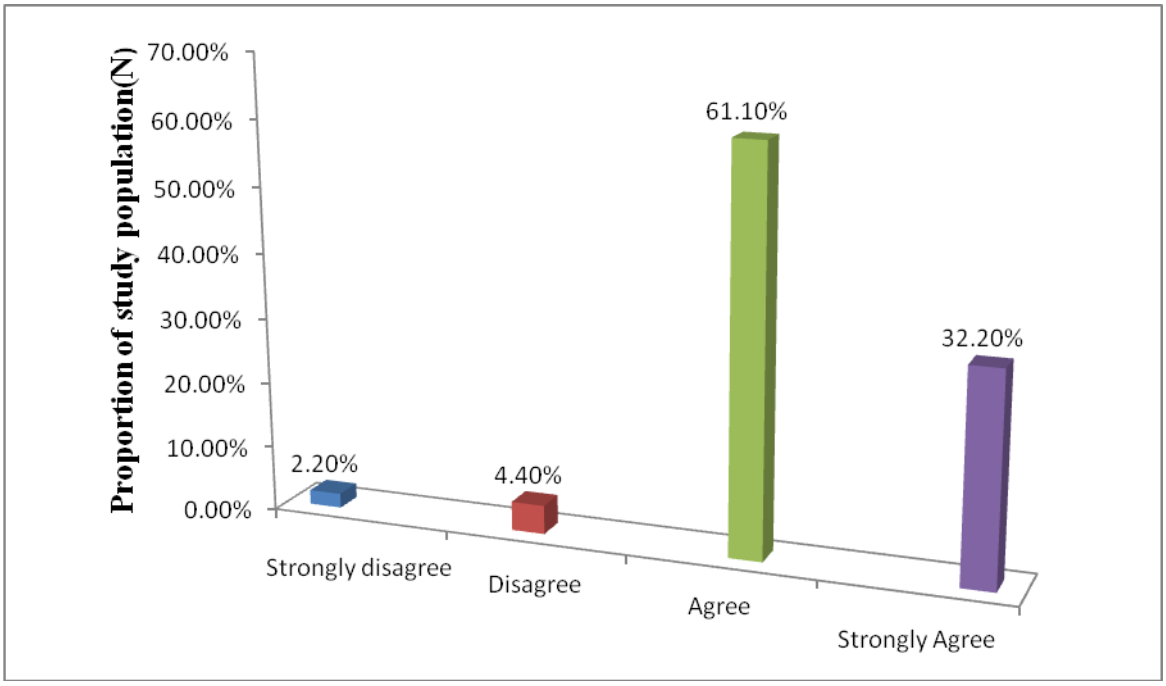

Figure 4:2 Students' views on procedures demonstrated before placements (n= 90)

Figure 4:2 shows that most of the respondents 61% (55) agreed that procedures were demonstrated to nursing students before they were sent for clinical practice. Only 2% (2) strongly disagreed with the statement that procedures were demonstrated before clinical allocation.

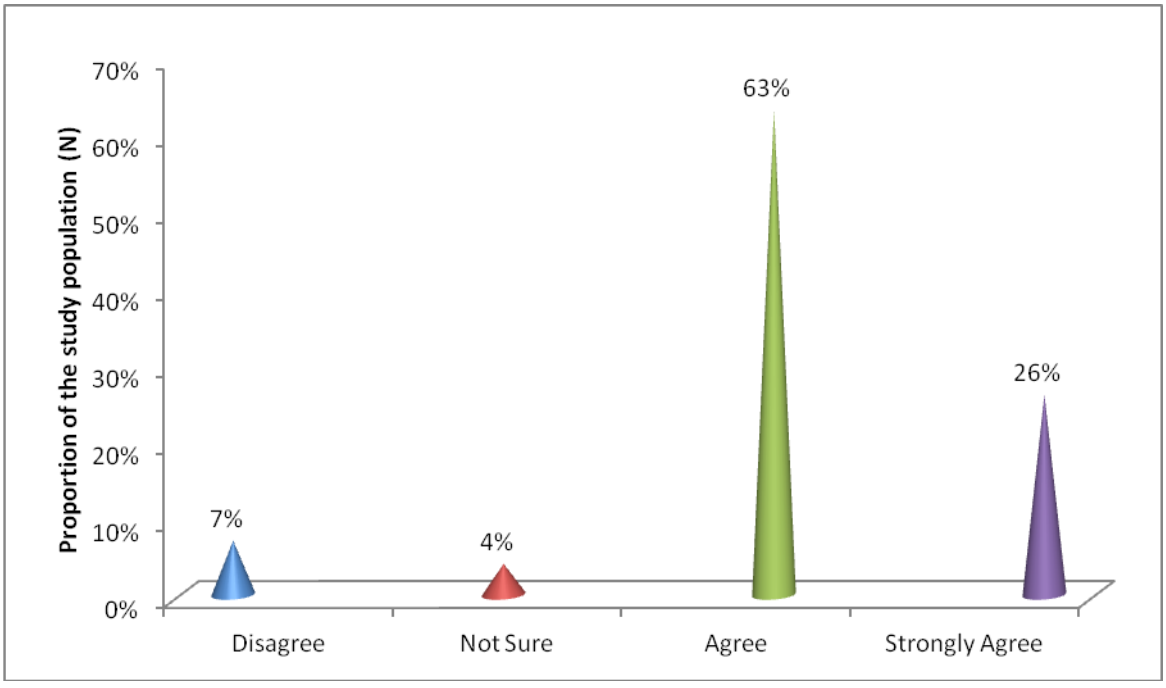

Figure 4:3 Explanations of clinical skills (n= 90)

Figure 4: 3 shows that 63% (57) agreed that clinical instructors adequately explained the clinical skills in the clinical area, 7% (6) disagreed that adequate explanation of skills by clinical instructors was done, while 4% (4) were not sure if clinical skills were adequately explained to nursing students.

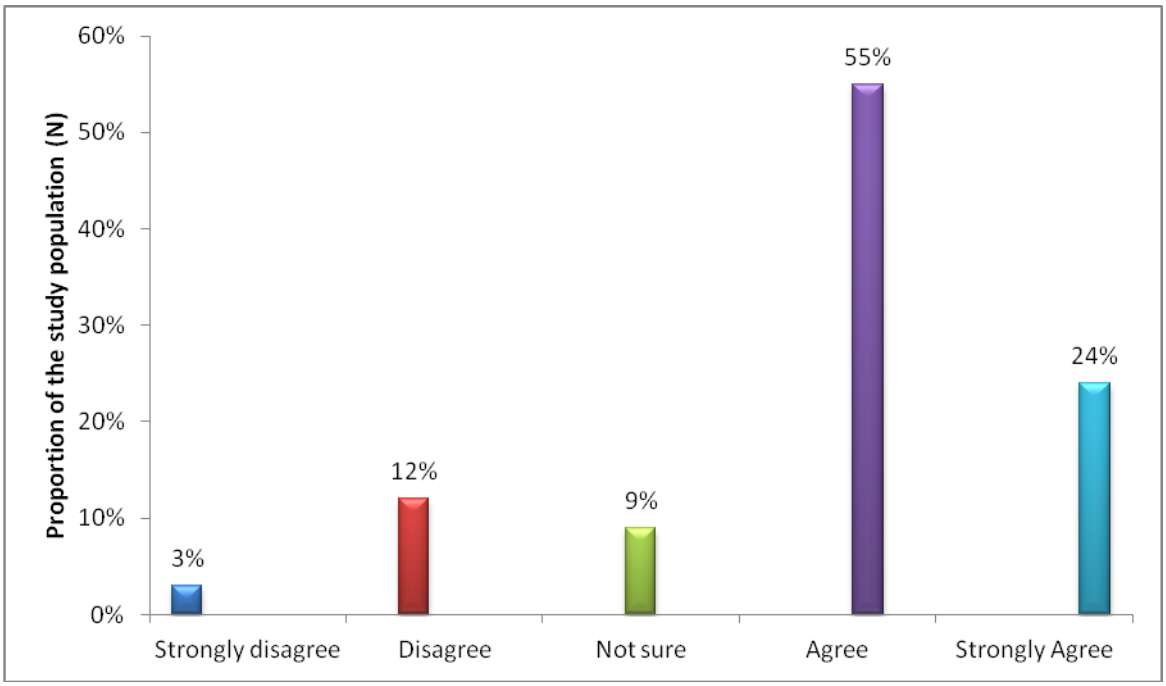

Figure 4:4 Sequencing of theory with practice (n= 90)

Figure 4:4 showed that majority 55% (49) of the respondents agreed that clinical placements were sequenced with the theoretical courses taught while 3% (3) of the respondents strongly disagreed.

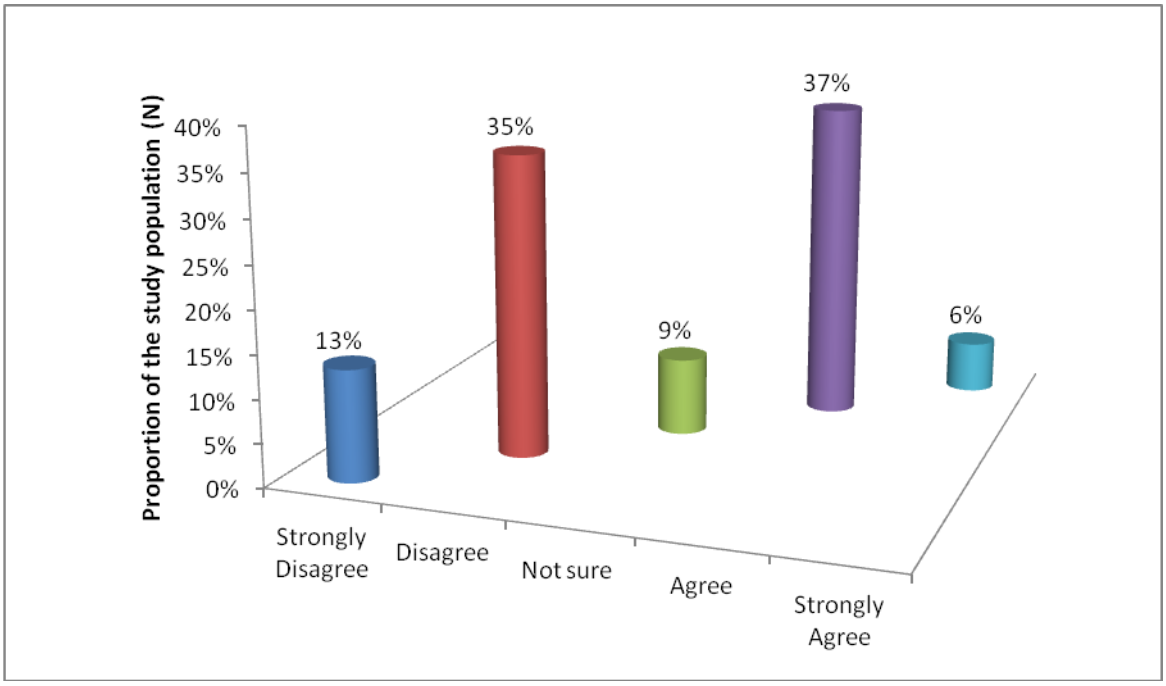

Figure 4: 5 Application of theory into practice by the clinical staff (n = 90)

Figure 4: 5 shows that 37% (33) of the respondents agreed that what the clinical staff practiced was in line with what was taught by the nurse tutors in theory while 35% (31) of the respondents disagreed that what the clinical staff practiced was in line with what was taught and 6% (5) of the respondents strongly agreed.

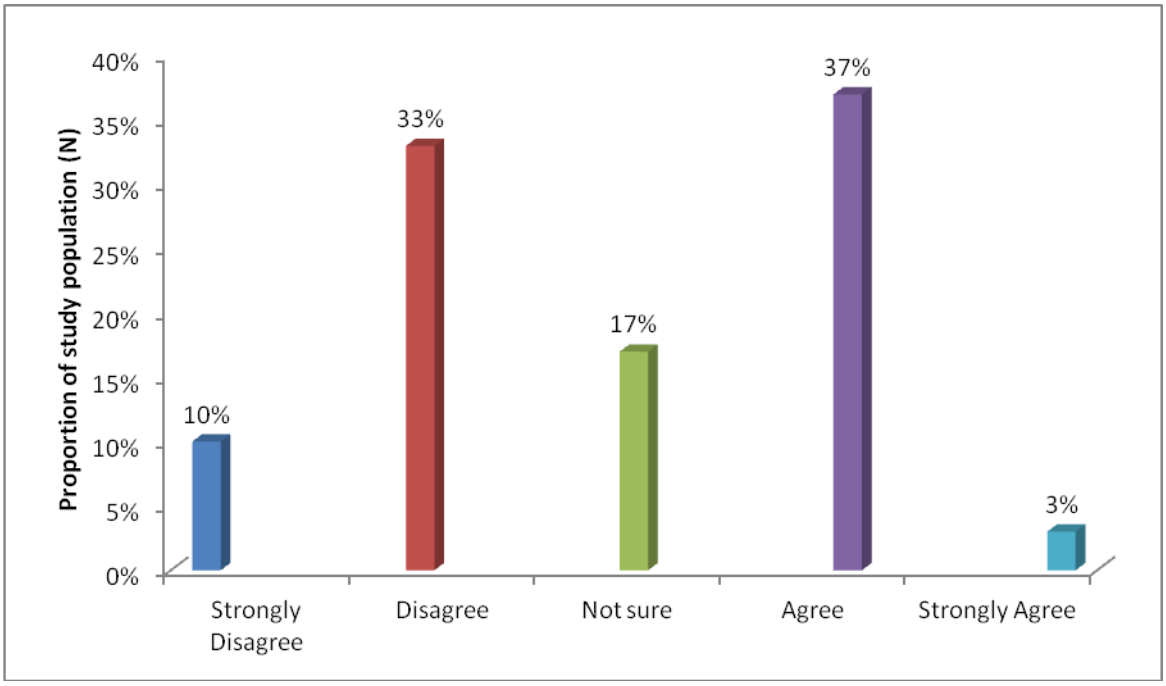

Figure 4: 6 Approaches of performing procedures according to what was taught and how they were practiced in the clinical practice (n = 90)

Figure 4: 6 shows that 37% (33) of the respondents agreed that there was no uncertainty between the theory taught and their experiences while 3% (3) strongly agreed that there was uncertainty.

4.3.2.1 Summary of Integration of Theory into Practice

The variables on integration of theory were manipulated and collapsed according to the assumptions for the tests that were to be used, (Pallant, 2004) and the classifications made according to the statistical outcome and cut off point on the variables using SPSS version 23. Below is the table for the new categories.

Table 4: 2 Summaries of the understanding of Integration of Theory into Practice Factors

Integration of theory into practice	Frequency	Percentage
Adequate	47	52.2%
Inadequate	43	47.8%
Total	90	100

Table 4:3 shows that 52.2% of the respondents had adequate understanding of the factors influencing integration of theory into practice in clinical skills acquisition, while 47.8% had inadequate understanding of the factors.

4.3.3 Section C: Clinical Environment Factors

This section covers the responses on clinical environment factors which of the scale was collapsed to three levels and these were, disagree, not sure and agree. There were eight (8) responses on the questionnaire with the minimum value of eight (8) and the maximum being forty (40).

Table 4: 3 Clinical Environment Factors (N= 90)

		Disagree	**Not sure**	**Agree**
1.	Mentorship	72(80.0%)	4 (4.4%)	14(15.6%)
2.	Sequencing clinical allocation and competencies	15 (16.7%)	9(10.0%)	66(73.3%)
3.	Nurse tutors in clinical area	65(72.2%)	9 (10.0%)	16 (17.8%)
4.	Application of objectives by clinical instructor	10 (11.1%)	34(37.8%)	46 (51.1%)
5.	Adequate staffing	56(62.2%)	8(8.9%)	26(28.9%)
6.	Adequate equipment and materials	74 (82.2%)	7 (7.8%)	9 (10.0%)
7.	Equipment in good working condition	71 (78.9%)	6 (6.7%)	13(14.4%)
8.	Available student cupboard	19 (21.1%)	0	71 (78.9%)

Table 4:3 shows that most of the respondents 82.2% (74) disagreed to the statement which said, the equipment and medical and surgical supplies were usually adequate for practice while 7.8% (7) were not sure. Three quarters of the respondents 80.0% (72) disagreed with the statement that "each student was allocated to a specific member of staff for mentorship" and 4 % (4) of the respondents were not sure.

More than three quarters of the respondents 78.9% (71) disagreed that "the equipment was always in good working condition" while 6.7% (6) were not sure. Most of the respondents 78.9% (71) agreed to the statement that "each department had a specific student cupboard for safe keeping of equipment" while 21.1% (19) respondents disagreed. Above average 73.3% (66) of the respondents agreed to the statement "Clinical allocation was according to competencies/ objectives to be achieved while10.0% (9) respondents were not sure. Furthermore 72.2% (65) of the respondents disagreed to the statement that "Nurse tutors spent at least an hour per week with them in the clinical setting for supervision" while 17.8% (16) agreed and 10.0% (9) of the respondents were not sure. More than average of the respondents 62.2% (56) disagreed that staffing levels were always adequate each shift while 28.9% (26) of the respondents agreed and 8.9% (8) were not sure. Slightly above average, 51.1% (46) of the respondents agreed to the statement which said that, "The clinical instructor was capable of applying the objectives of each placement" while 37.8% (34) respondents were not sure and only 11.1% (10) disagreed.

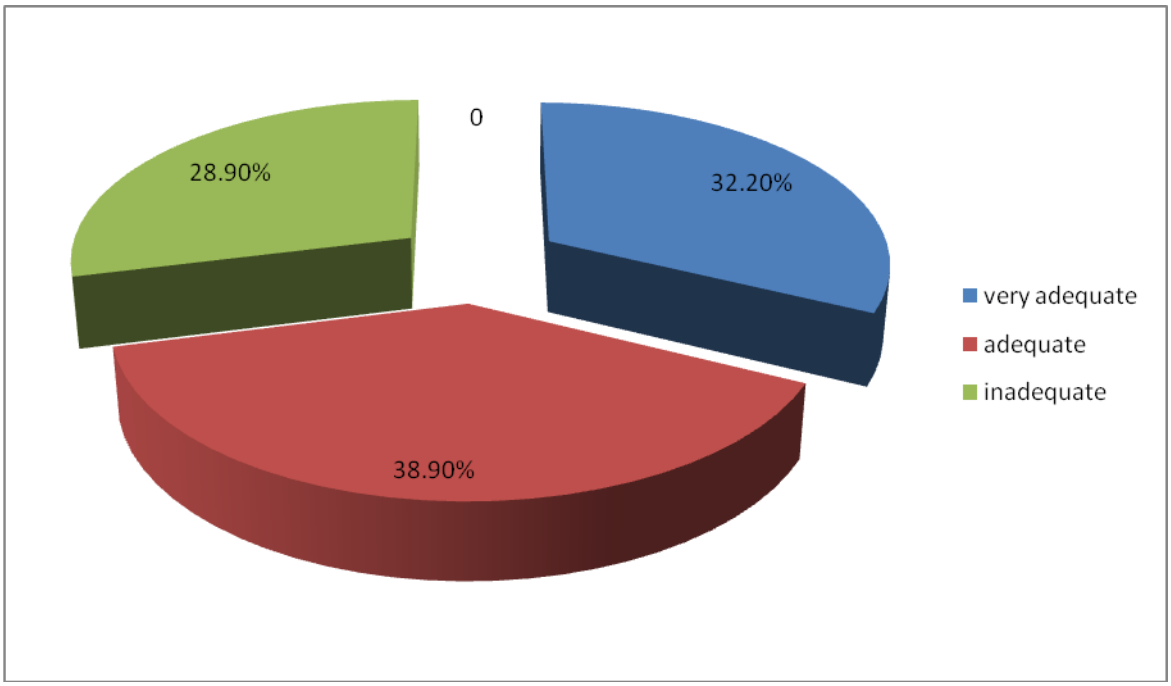

Figure 4: 7 Summaries for Clinical Environmental Factors

Figure 4: 8 showed that 38.9% (n= 35) the clinical environmental factors were adequate in influencing integration of theory into practice while 28.9% (n=26) of the factors were inadequate in influencing the integration of theory into clinical practice.

4.3.4 Section D: Student Related Factors

This section covers the responses on student - related factors which were graded in five levels and these were strongly disagree, disagree, not sure, agree and strongly agree. There were seven (7) questions on the questionnaire and the minimum value of the responses was seven (7) and the maximum being thirty five (35).

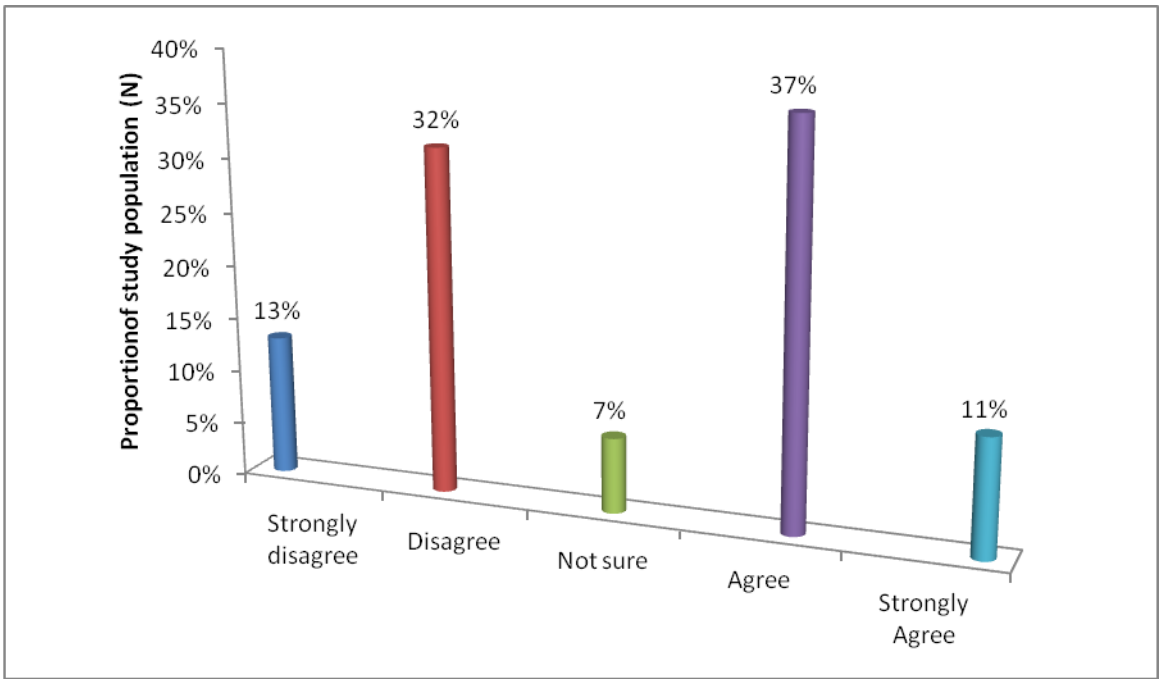

Figure 4:8 Availability of clinical staff support (n = 90)

Figure 4:8 shows that 37% (33) of the respondents agreed that the staff were supportive while 7% (6) of the respondents were not sure.

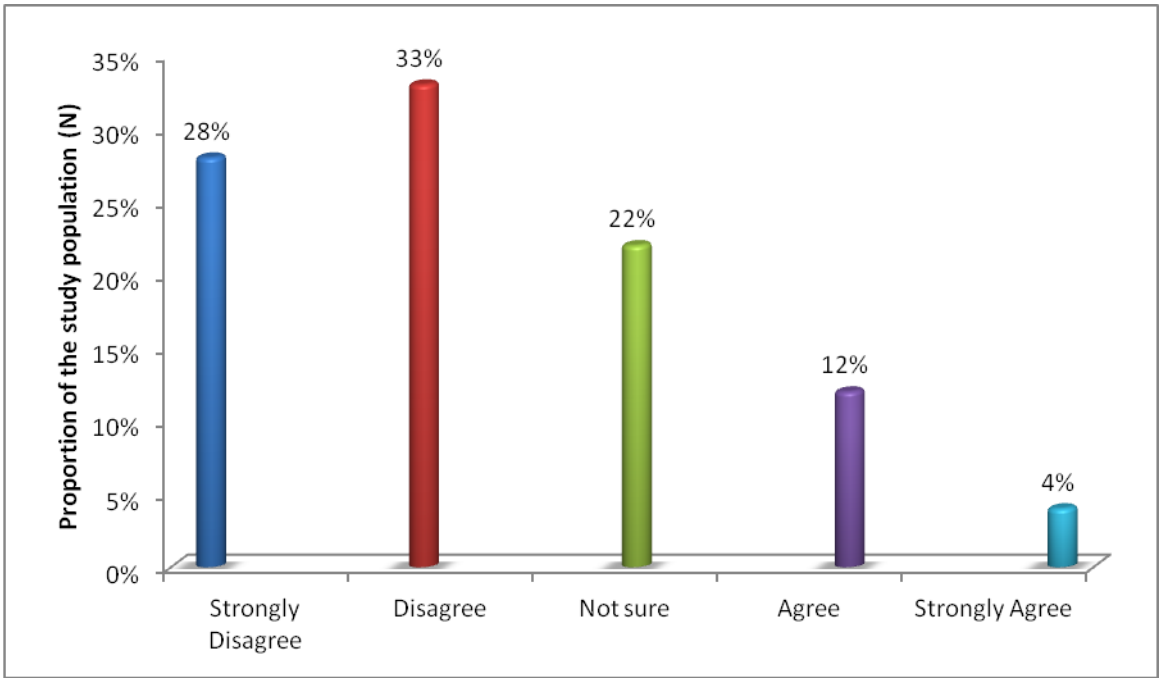

Figure 4:9 Nursing educators' control on nursing students during clinical practice (n=90)

Figure 4: 9 shows that 33% (30) of the respondents disagreed that nurse tutors had no control over nursing students in the clinical practice and 4% (4) strongly agreed.

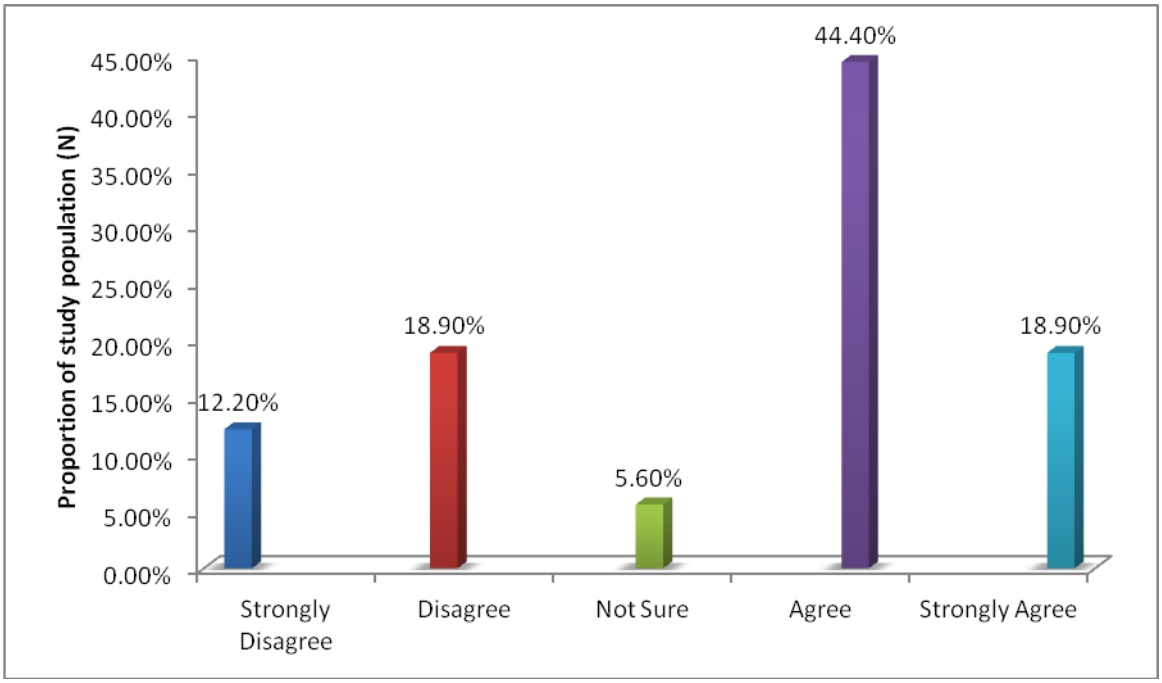

Figure 4:10 Willingness of Clinical staff to teach nursing students (n= 90)

Figure 4:10 showed that most of the respondent 44.4% (40) agreed that clinical staff were willing to teach and guide nursing students during the clinical placement, 18.9 % (17) of the respondents strongly agreed and disagreed respectively and only 12.2% (11) of the respondents strongly disagreed.

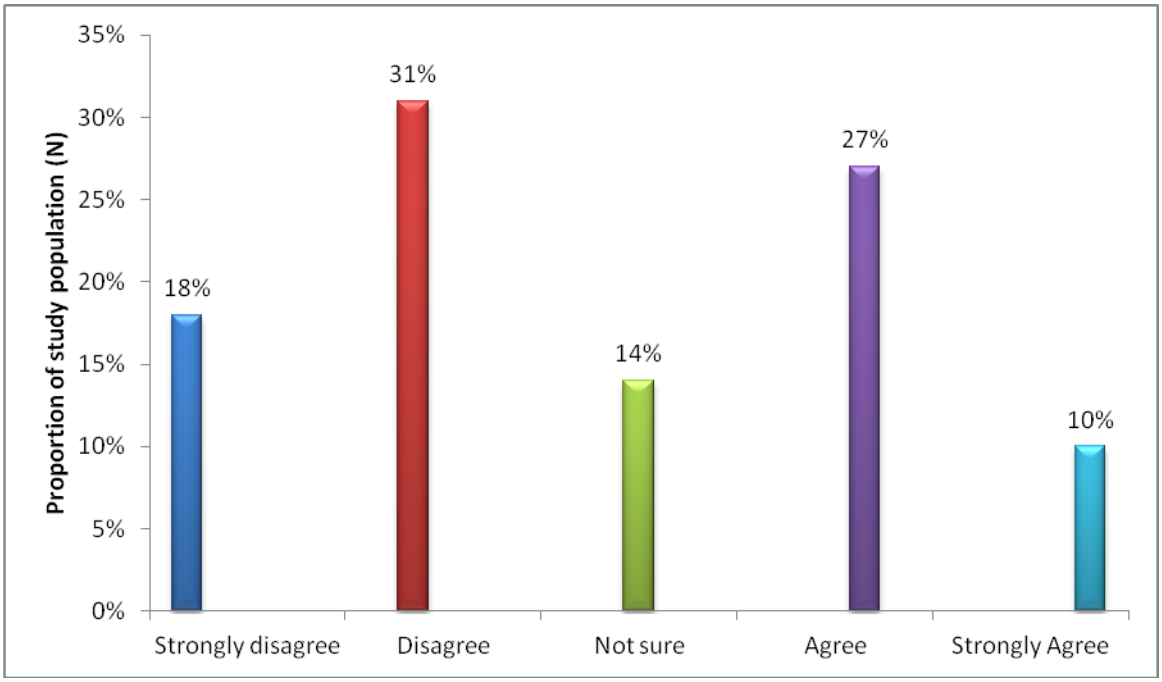

Figure 4:11 Availability of clinical instructors in clinical area (n = 90)

Figure 4:11 shows that 31% (28) of the respondents disagreed with the statement, "that the clinical instructors were always available in the clinical area," while 10% (9) respondents strongly agreed.

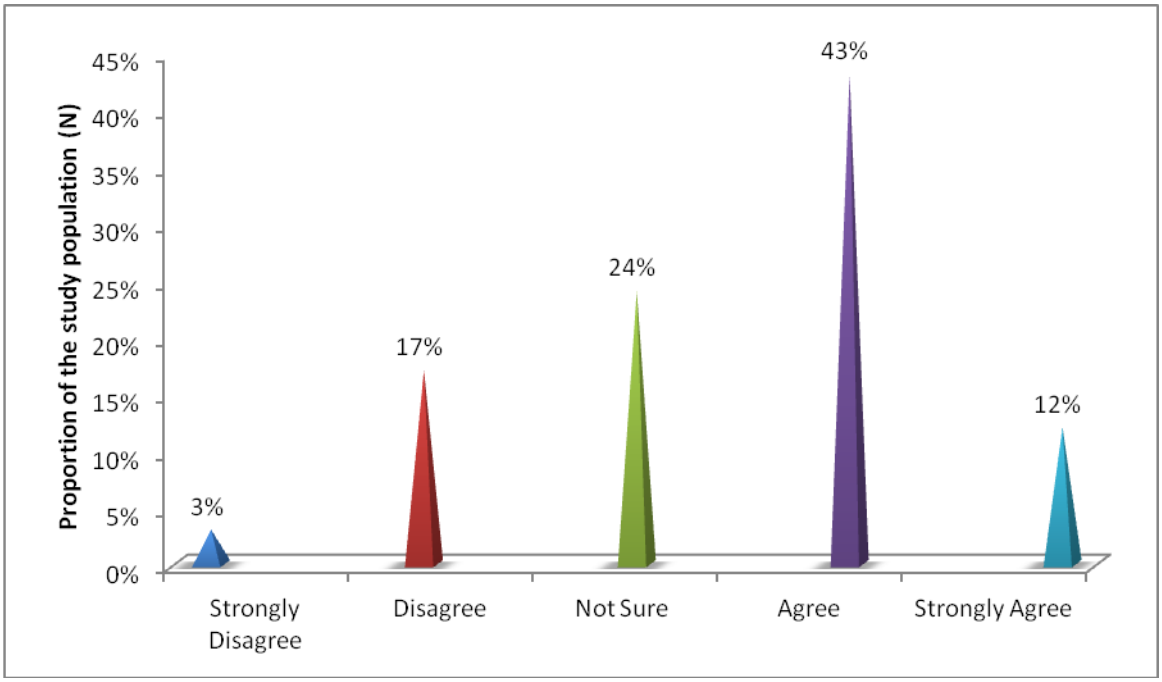

Figure 4:12 Relationship between nurse educators and clinical staff (n = 90)

Figure 4:12 showed that 43% (39) respondents agreed that nurse educators maintained a good relationship with the clinical staff while 3% (3) strongly disagreed.

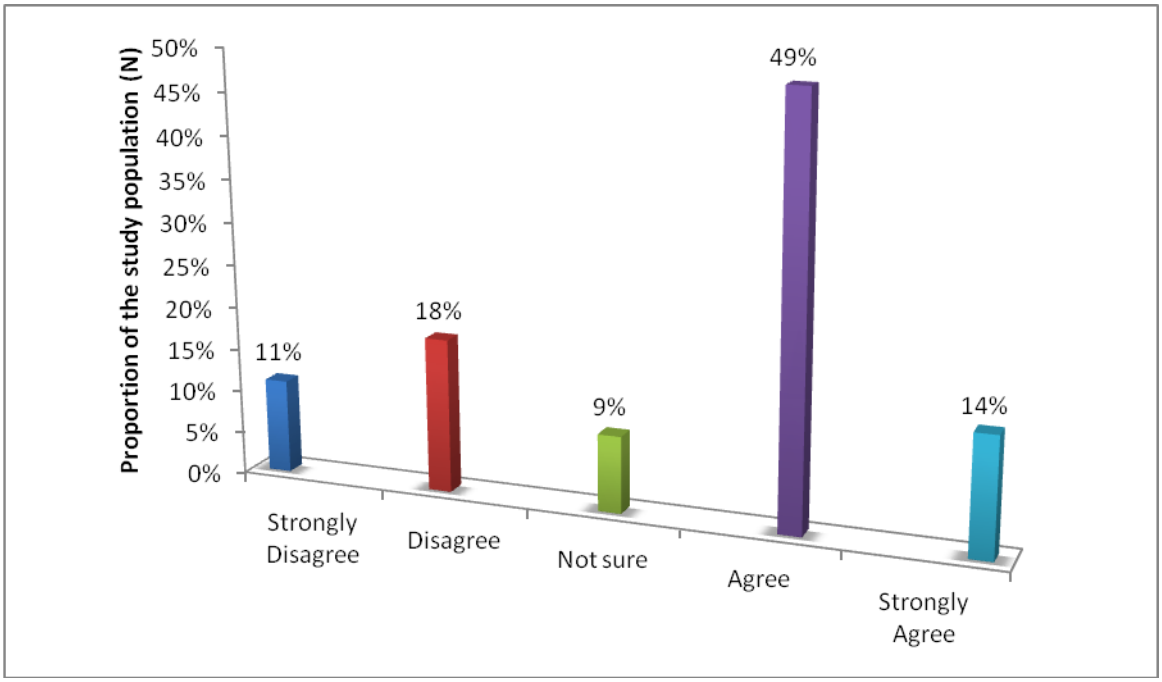

Figure 4:13 Involvement of students in peer education (n = 90)

Figure 4:13 showed that 49% (44) respondents agreed that they were involved in peer education and 11% (10) of the respondents strongly disagreed on being involved in peer education.

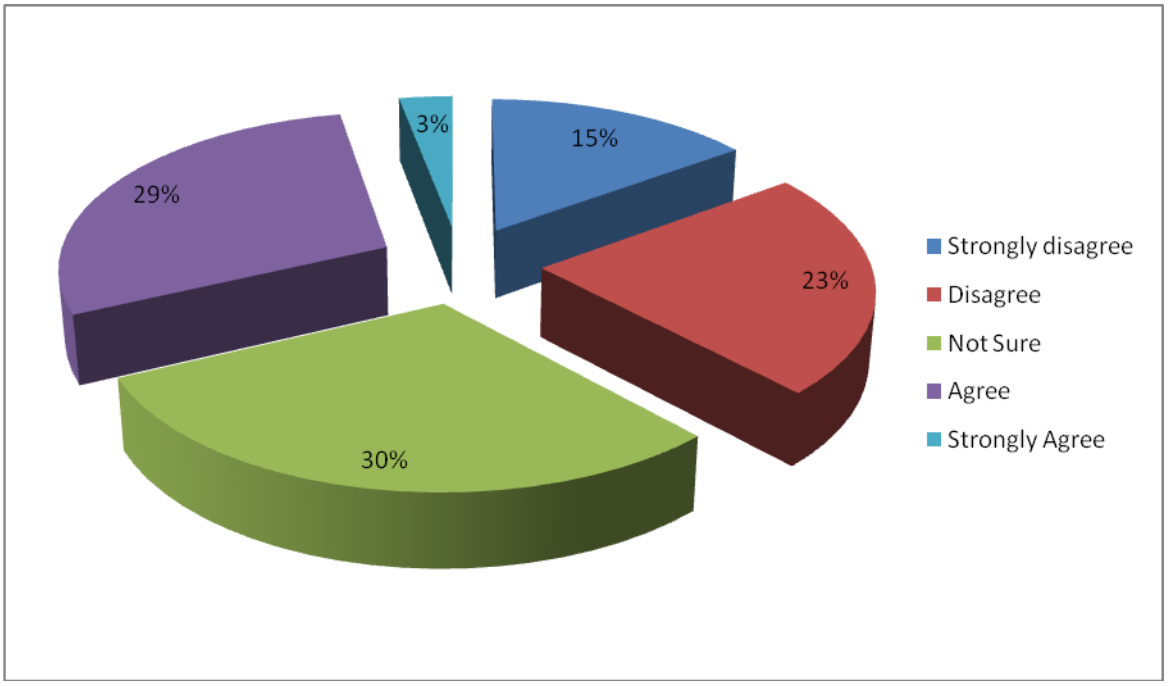

Figure 4: 14 Nursing students engagement in reflection (n= 90)

Figure 4: 14 showed that 29% (26) respondents agreed engaging in reflection, 23% (21) disagreed engaging in reflection while 3% strongly agreed.

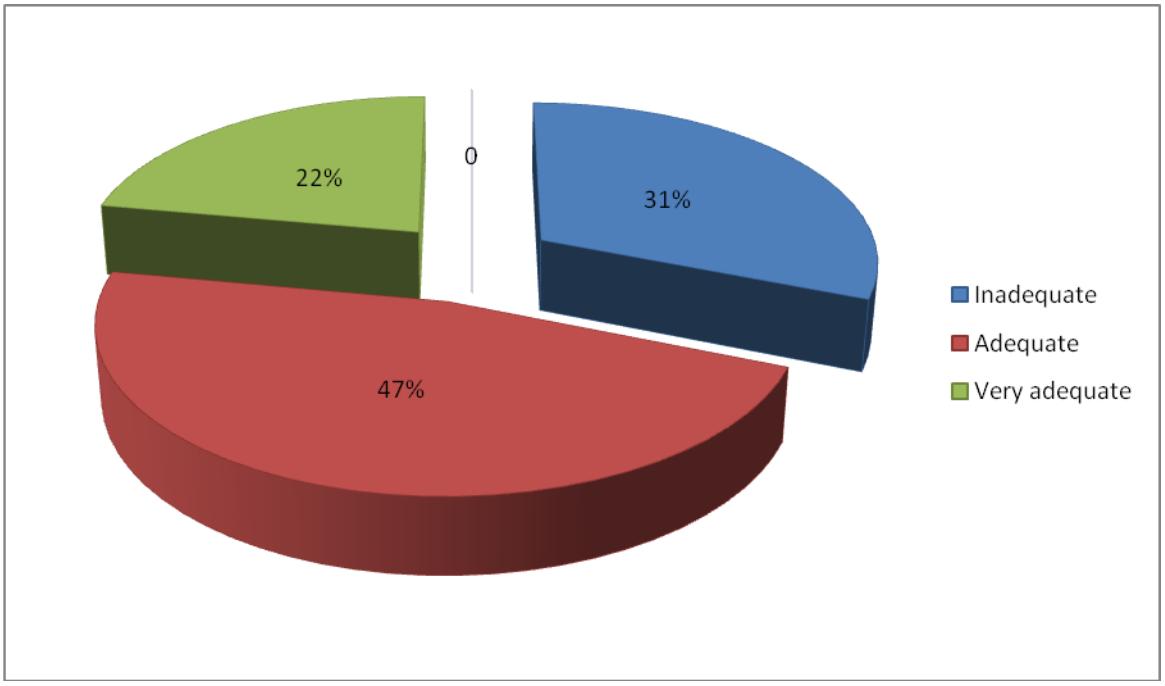

Figure 4.15 Summaries of Student Related Factors

Figure 4:15 indicated that 47% (42) of student related factors adequately influenced the integration of theory into clinical practice, while 31% (28) of the factors inadequately influenced integration of theory into practice and 22% (20) of the factors were very adequate in influencing the integration of theory into practice in clinical skills acquisition.

4.3.5 Section E: Clinical Supervision factors

This section covers responses made on clinical supervision using the Likert scales from 1= strongly disagree, 2= disagree, 3= Not sure, 4= agree and 5= strongly agree. These were further collapsed to three scales of disagree, not sure and agree. There were 11 questions with the lowest score being 11 and the highest score was 55 for this section of the questionnaire.

Table 4: 4 Clinical Supervision Factors (n= 90)

		Disagree	Not sure	Agree
1.	Assessments	22 (24.4%)	0	68 (75.6%)
2.	Documentation	33 (36.7%	8 (8.9%)	49 (54.4%)
3.	Feedback	30 (33.3%)	8 (8.9%)	52 (57.8%)
4.	Evaluation Manuals are regularly checked	40 (44.4%)	5 (5.6%)	45 (50%)
5	Feedback from the ward manager appropriate	7(7.8%)	15 (15.6%)	68 (75.6%)
6.	Nursing process is used	34 (37.8%)	11 (12.2%)	45 (50%)
7.	Updates given.	32 (35.6%)	12 (13.3%)	46 (51.1%)
8.	Preset schedule for demonstrations	27 (30%)	13 (14.4%)	50 (55.6%)
9.	Time allocation.	35 (38.9%)	10 (11.1%)	45 (50%)
10.	Objectives explained	21 ((23.3%)	16 (17.8%)	53 (58.9%)
11.	Clinical supervision and support necessary	3 (3.3%)	4 (4.4%)	83 (92.2%)

Table 4: 5 showed that 92.2% (83) of the respondents agreed that clinical supervision and support was necessary while 3.3% (3) of the respondents disagreed. 75.6% (68) of the respondents agreed that assessments and feedback from the ward manager were necessary for the integration of theory into practice while 24.4% (22) and 7.8% (7) disagreed respectively. 58.9% (53) of the respondents agreed that the objectives were explained during clinical allocation while 23.3% (21) disagreed that the objectives were explained during clinical allocation and 17.8% (16) were not sure. Furthermore 55.6% (50) of the respondents acknowledged having a preset schedule for demonstrations while 30% (27) disagreed.54.4% (46) respondents agreed that documentation was being done accordingly while 36.7% (33) of the respondents disagreed. 51.1% (46) agreed that updates were given while 35.6% (32) respondents disagreed. 50% (45) respondents stated that time allocated for theory and practice was well balanced while 38.9% (35) disagreed. A total of 50% (45) respondents agreed that the evaluation manuals were checked regularly and nursing process is used for the care of the patients while 44% (40) and 37.8% (34) disagreed respectively.

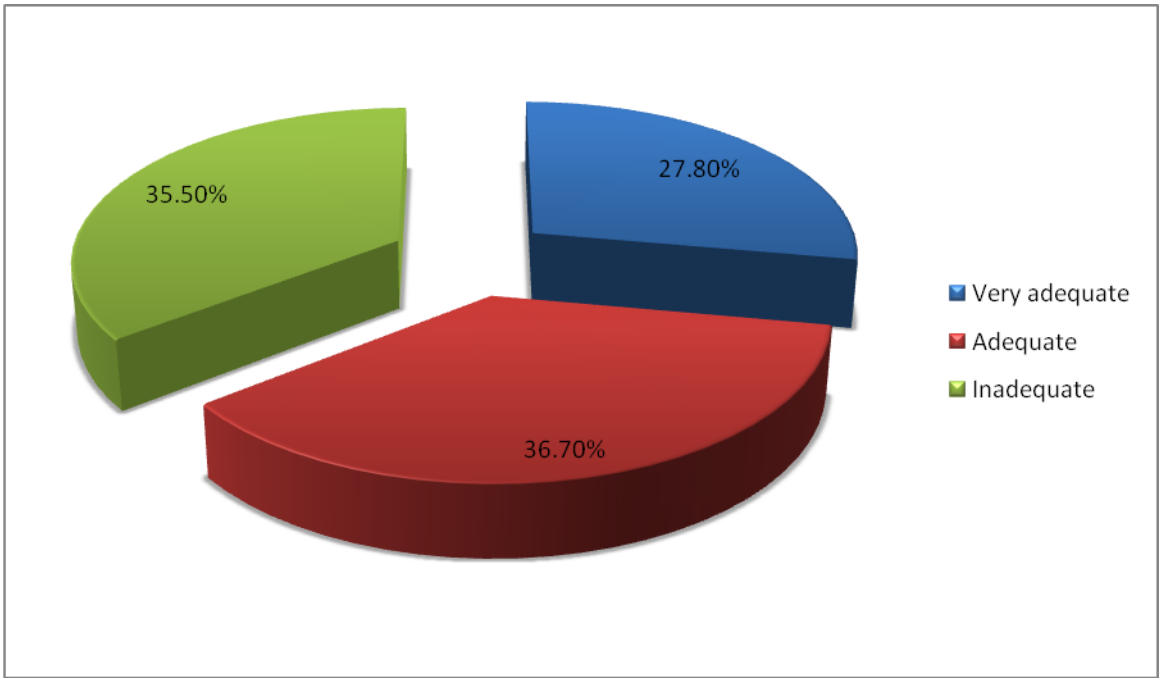

Figure 4: 16 Summaries of Clinical Supervision factors (n= 90)

Figure 4: 17 shows that 36.7% of clinical supervision factors had adequate influence on the integration of theory into clinical skills acquisition while 35.5% was inadequate and 27.8% stated that the factors were very adequate.

4.3.6 Section: E Relationship between dependent and independent variables

4.3.6.1 Integration of theory into practice and the level of training

Table 4: 5. Integration of theory into practice in relation to the level of training

Total integration	**Level of training**			**Total**	**Pearson Chi Square**	***P* - Value**
	Year 1	**Year 2**	**Year 3**			
Inadequate	8(17%)	12(25.5%)	27(57.4%)	47(52.2%)	0.554	0.758
Adequate	7(16.3%)	14(32.6%)	22(51.2%)	43(47.8%)		
Total	**15(16.7%)**	**26(28.9%)**	**49(54.4%)**	**90(100%)**		

Table 4.5 shows that, out of the 52.2% (n=47) of the respondents who did not adequately identify the factors the influenced integration of theory into practice 57.4% (27) were in third year of training, 12 (25.5%) were in second year and 8 (17%) were in first year.

Table 4:6 Relationship between Integration and student related factors

Integration of theory into practice	**Student related factors**			**Total**	**Pearson Chi square**	***P* value**
	Very adequate	**Adequate**	**Inadequate**			
Adequate	10(21.7%)	29(63%)	7(15.2%)	46(100%)	**13.964**	**0.001**
Inadequate	10(23.3%)	12(27.9%)	21(48.8%)	43(100.0%)		
Total	20	41	28	89		

Table 4:6 shows that 63% (29) of the respondents who adequately acknowledged that student related factors influenced integration of theory into practice, adequately identified the factors that influenced integration of theory into practice, while 48.8% (21) who inadequately identified the student related factors also did not adequately identify factors that influenced integration of theory into practice. A chi- square test for independence indicated a significant association between factors influencing integration of theory into practice and student related factors, x^2 (2, n= 90) = 13.9, p= .001, and crammer V= 39.6

4.3.6.2 Relationship between integration of theory into practice and student related factors

In identifying the individual student related factors that influenced integration of theory into practice, a chi square test for independence was done and the following were the results.

Table 4:7 Relationship between integration of theory into practice and student related factors (n= 90)

Independent Variable	Integration of theory into practice		Pearson Chi square	*p*- value
	Inadequate	Adequate		
Clinical staff support				
Disagree	59.6% (28)	30.2% (13)	**8.140**	**.017**
Not sure	6.4% (3)	7.0% (3)		
Agree	34.0% (16)	62.8% (27)		
Total	**47 (52%)**	**43 (48%)**		
Nurse educators have no control				
Disagree	55.3% (26)	67.4% (29)	3.259	.196
Not sure	21.3% (10)	23.3% (10)		
Agree	23.4% (11)	9.3% (4)		
Total	**47(52%)**	**43(48%)**		
Clinical staff willing to teach				
Disagree	42.6% (20)	18.6% (8)	**10.143**	**.006**
Not sure	0	11.6% (5)		
Agree	57.4% (27)	69.8% (30)		
Total	**47 (52%)**	**43((48%)**		
Availability of clinical instructors in clinical area				
Disagree	61.7% (29)	34.9% (15)	**6.822**	**.033**
Not sure	12.8% (6)	16.3% (7)		
Agree	25.5% (12)	48.8% (21)		
Total	**47(52%)**	**43(48%)**		
Relationship between nurse educators and clinical staff				
Disagree	29.8% (14)	9.3% (4)	**9.914**	**.007**
Not sure	29.8% (14)	18.6% (8)		
Agree	40.4% (19)	72.1% (31)		
Total	**47 (52%)**	**43 (48%)**		
Peer education				
Disagree	29.8% (14)	27.9% (12)	.477	.788
Not sure	10.6% (5)	7.0% (3)		
Agree	59.6% (28)	65.1% (28)		
Total	**47(52%)**	**43 (48%)**		

Engagement in reflection				
Disagree	51.1% (24)	23.3% (10)	**7.625**	**.022**
Not sure	25.5% (12)	34.9% (15)		
Agree	23.4% (11)	41.9% (18)		
Total	**47(52%)**	**43(48%)**		

Pearson's Chi-Squared Test, *Indicates significant *p*-value at $p < 0.05$.

Table 4:7 shows that factors related to clinical staff providing support and willing to teach nursing students significantly influenced integration of theory into practice. Furthermore, availability of clinical instructors in the clinical area, relationship between nurse educators and clinical staff and student engagement in reflection were also significant in influencing integration of theory into practice in clinical skills acquisition.

Table 4: 8 Relationships between Integration and Clinical supervision

Total integration	**Total clinical supervision**			**Total**	**Pearson Chi square**	***P* value**
	Good	**Very good**	**Inadequate**			
Adequate	24(51.1%)	16(34%)	7(14.9%)	47(52.2%)	**12.718**	**0.002**
Inadequate	8(18.6%)	17(39.5%)	18(41.9%)	43(47.8%)		
Total	**32(35.6%)**	**33(36.7%)**	**25(27.8%)**	**90(100%)**		

Table 4: 8 shows that 51.1% (24) of the respondents who adequately identified factors of integration of theory into practice were good in identifying the clinical supervision factors that influenced integration of theory into practice. However the respondents who inadequately identified the factors of integration of theory into practice, 41.9% (18) were not able to adequately identify clinical supervision factors. A chi – square test for independence indicated a significant association between factors of integration of theory into practice and clinical supervision factors, X^2 (2, n= 90) = 12.7 p .002 and crammer V = 37.6

4.3.6.3 Relationships between integration of theory into practice and the clinical supervision factors.

The relationship between specific clinical supervision factors and integration of theory factors into practice in clinical skills acquisition was measured using Pearson's chi – square test.

Table 4: 9 Relationships between integration of theory into practice and clinical supervision factors. (n = 90)

Independent Variable	**Integration of theory into practice**		**Pearson Chi square**	***p- value***
	Adequate	**Inadequate**		
Assessment according to demonstrated procedure				
Disagree	40.4% (19)	16.3% (7)	**9.230**	**.010**
Not sure	8.5% (4)	2.3% (1)		
Agree	51.1% (24)	81.4% (35)		
Total	**52%(47)**	**48%(43)**		
Documentation				
Disagree	51.1% (24)	20.9% (9)	**10.610**	**.005**
Not sure	10.6% (5)	7.0% (3)		
Agree	38.3% (18)	72.1% (31)		
Total	**52% (47)**	**48%(43)**		
Observations made on weaknesses and strengths				
Disagree	24 (51.1%)	30.2% (13)	**7.456**	**0.024**
Not sure	4 (8.5%)	7.0% (3)		
Agree	19 (40.4%)	62.8% (27)		
Total	**52%(47)**	**48%(43)**		
Nursing process is used				
Disagree	51.5% (24)	23.3% (10)	**8.383**	**.015**
Not sure	12.8% (6)	11.6% (5)		
Agree	36.2% (17)	65.1% (28)		
Total	**52% (47)**	**48% (43)**		

Updates given.				
Disagree	46. 8% (22)	23.3% (10)	5.725	.057
Not sure	12.8% (6)	14.0% (6)		
Agree	40.4% (19)	62.8% (27)		
Total	**52% (47)**	**48 % (43)**		
Objectives explained				
Disagree	34.0% (16)	11.6% (5)	**11.045**	**.004**
Not sure	23.4% (11)	11.6% (5)		
Agree	42.6% (20)	76.7% (33)		
Total	**52% (47)**	**48% (43)**		

Pearson's Chi-Squared Test, *Indicates significant *p*-value at $p < 0.05$.

Table 4: 9 shows that making observations on weaknesses and strengths, documentation, explanation of the objectives, assessing according to demonstrated procedures and the utilisation of the nursing process among nursing students were significant factors in influencing the integration of theory into practice in clinical skills acquisition.

Table 4: 10 Relationship between integration and clinical environment

Total integration	**Total Clinical Environment**			**Total**	**Pearson Chi square**	***P* value**
	Good	**Very good**	**Poor**			
Adequate	25(53.2%)	12(25.5%)	10(21.3%)	47(52.2%)	**8.514**	**0.014**
Inadequate	10(23.3%)	17(39.5%)	16(37.2%)	43(47.8%)		
Total	35(38.9%)	29(32.2%)	26(28.9%)	90(100%)		

Table 4: 10 shows that 53.2% (25) of the respondents who adequately identified the factors of integration of theory into practice also had good understanding of clinical environment factors that influenced integration of theory into practice. A chi – square test for independence indicated a significant association between factors of integration of theory into practice and clinical environment factors, X^2 (2, n= 90) = 8.514, $p<0$ .014 and crammer V= 30.

4.3.6.4 Relationship between Integration of theory into practice and clinical environment

The relationship between factors of integration of theory into practice and factors in the clinical environment were measured using Pearson's chi- square test. The findings were presented in table 4:12 below.

Table 4:11 Relationship between Integration of theory into practice and clinical environment variables

Independent Variable	**Integration of theory into practice**		**Pearson Chi square**	***p- value***
	Adequate	**Inadequate**		
Mentorship				
Disagree	87.2% (41)	72.1% (31)	5.508	0. 064
Not sure	0	9.3% (4)		
Agree	12.8% (6)	18.6% (8)		
Total	**52% (47)**	**48% (43)**		
Sequencing allocation and core competencies				
Disagree	21.3% (10)	11.6% (5)	2.555	.279
Not sure	6.4% (3)	14.0% (6)		
Agree	72.3% (34)	74.4 (32)		
Total	**52% (47)**	**48% (43)**		
Nurse tutor follow up				
Disagree	85.1% (40)	58.1% (25)	**8.328**	**.016**
Not sure	4.3% (2)	16.3%		
Agree	10. 6% (5)	25.6 % (11)		
Total	**52% (47)**	**48% (43)**		
Application of objectives by clinical instructor				
Disagree	12.8%(6)	9.3% (4)	1.632	.442
Not sure	42.6% (20)	32.6% (14)		
Agree	44.7% (21)	58.1% (25)		
Total	**52% (47)**	**48% (43)**		

Adequate staffing				
Disagree	68.1% (32)	55.8% (24)	1.584	.453
Not sure	8.5% (4)	9.3% (4)		
Agree	23.4% (11)	34.9% (15)		
Total	**52% (47)**	**48% (43)**		
Adequate equipment and materials				
Disagree	85.1% (40)	79.1% (34)	.564	.754
Not sure	8.4% (3)	9.3% (4)		
Agree	8.5% (4)	11.6% (5)		
Total	**52% (47)**	**48% (43)**		
Equipment in good working condition				
Disagree	83.4% (39)	74.4% (32)	3.108	.211
Not sure	8.5% (4)	4.7% (2)		
Agree	8.5% (4)	20.9% (9)		
Total	**52% (47)**	**48% (43)**		
Available student cupboard				
Disagree	25.5% (12)	16.3% (7)	1.154	.313
Agree	74.5% (35)	83.7% (36)		
Total	**52% (47)**	**48% (43)**		

Pearson's Chi-Squared Test, *Indicates significant *p*-value at $p < 0.05$.

Table 4:11 showed that most of the respondents 83.4% (39) who identified integration of theory factors also disagreed that they were followed up by the nurse tutor even for 1 hour per week. The chi square results ($X^2 = 8.328$, $p < 0.016$) showed significance in influencing integration of theory into practice.

Table 4: 12: Binary Logistic Regression determining the relationship between Integration and independent variables

Predictor		**Odds Ratio**	**95% C.I**	***p*- value**
Student related factor	Disagree	2.181	.633 – 7.519	.21
	Agree	**5.055**	**1.329 – 19.228**	**.01**
Clinical Supervision	Disagree	3.071	.965 – 9.774	.058
	Agree	3.081	.689 – 13.769	.14
Clinical environment	Disagree	2.156	.664 – 6.999	.20
	Agree	1.236	.314 – 4.872	.76

Direct Logistic regression was performed to assess the factors influencing the integration of theory into practice in clinical skills acquisition. The model contained three independent variables and these were clinical supervision, student related factors and clinical environment. The full model containing all predictors was statistically significant, X^2 (6, N=90) = 21.8, p< 001, indicating that the model was able to distinguish between factors that influenced integration of theory into practice.

The model as a whole explained 21.7% (Cox and Snell R square) and 29.0% (Nagelkerke R squared) of the variance in integration of theory and correctly classified 71.9% cases.

As shown in Table 4:12 student related factors were statistically significant with a *P* value of 0.01 and recording an odds ratio of 5. 055. The CI at 95% was 1.329 - 19.228. This indicated that student related factors had more influence on integration of theory into practice.

Clinical supervision and clinical learning environment had less influence on the integration of theory into practice.

4.3.7 Binary Logistic Regression- determining factors influencing integration of theory into practice in clinical skills acquisition

Binary logistic regression analysis was further used to determine specific variables that were true predictors in integration of theory into practice in clinical skills acquisition as well as to control for confounding factors.

The results of the binary logistic regression revealed that sequencing theoretical knowledge being taught and clinical placements, appropriate core competencies, having no misunderstanding between theory and practice, documentation, having clinical objectives explained and having no uncertainty between theory and practice significantly influenced the integration of theory into practice in clinical skills acquisition as shown in table 4:13

Table 4:13 Binary Logistic regression of factors influencing integration of theory into practice.

Predictor	**Odds Ratio**	**95% CI**	***P*- value**
Theoratical knowledge and practice	**69.507**	**5.340 – 904.797**	**0.001**
Appropriate care	6.878	.871 – 54. 294	.067
Sequencing clinical allocation with core competencies	**409.749**	**7.172 23409.914**	**.004**
No misunderstanding of theory and practice	**40.800**	**4.159 – 400.243**	**.001**
Reflection	2.981	.862- 10.310	-084
Documentation	**3.393**	**1.055- 10.910**	**.040**
Explained Objectives	**5.320**	**1.059 – 26.721**	**.042**

Table 4: 13 shows after adjusting the confounding effects of the rest of the independent variables, nursing students'responses on what was taught in class being similar to what was practiced in the clinical, (55%) showed to have an influence on the integration of theory into practice compared to those who disagreed, (*OR = 69.507, p 0 .001*).

Nursing students who acknowledged that sequencing of clinical allocation to the core competencies to be achieved (73%) influenced the integration of theory into practice, (*OR= 409.749. p 0.004*) compared to those who disagreed. Furthermore it was observed that having no misunderstanding between the theory being taught and what was practiced (37%), and having a misunderstanding on what was taught compared to what was practiced (33%), influenced the integration of theory into practice (*OR= 40.800, p 0.001*).

Similarly documentation (72.1%) of the care provided by the nursing students influenced their integration of theory into practice (*OR = 3.393, P, 0.040*), and having objectives explained inadequately (34%) during the clinical practice influenced their ability to integrate theory into practice (*OR = 5.321, P, 0.042*).

4.3.8 Factors influencing and hindering integration of theory into practice in clinical skills acquisition

Open-ended questions were posed to nursing students to further determine the factors influencing integration of theory into practice in clinical skills acquisition among nursing students. Diverse responses from the nursing students were given. The researcher grouped the responses according to common themes, and three main themes emerged: a) Environmental factors b) student related factors and lastly c) clinical supervision.

4.3.8.1: Environmental Factors

The most common theme established from the responses was the Clinical Environment.
The following were the specific factors that were stated; inadequate equipment, Lack of Clinical Instructors, attitude of nursing staff, low staffing levels and low number of patients.

4.3.8.1.1 Inadequate Equipment

Most of respondents stated that they did not have enough equipment to use in the wards. This could be affirmed by the responses from the participants, for example one of the participant had this to say;

"*Most of the time we do not have equipment to practice on and it is only made available when we are being examined or assessed*."

4.3.8.1.2 Inadequate Clinical Instructors

Some respondents attested to not having the Clinical Instructors in the wards. They are not followed to demonstrate procedures. One of the respondents gave the following comment;

"The Clinical Instructors rarely come to the ward".

4.3.8.1.3 Attitude of the nursing staff

The approach of the qualified nursing staff towards the students was not welcoming. The nursing staffs preferred to look down on the students and were not willing to assist students in their learning. The respondents stated the following;

"*Some nurses are not welcoming, they look down on students and they are always shouting when one makes a mistake".*

The other respondents stated the following;

"*Once we are in the wards then its tools down for the nursing staff and they let us do all the work. They do not observe the student to ensure they are doing the right procedures".*

4.3.8.1.4 Inadequate staffing

Most of the respondents acknowledged not having enough nurses to work with per shift. They further attested that most of the times the students are considered to be part of the health team. Therefore when in the ward they are giving nursing care without consideration of the objectives to be achieved for that allocation. The respondent hard this to say;

"*There is inadequate staffing of the wards, leading to students being providers of care than learners".*

4.3.8.1.5 Inadequate patients

The respondents acknowledged having inadequate number of patients to practice on as influencing the integration of theory into practice in clinical skills acquisition.

This was attested by one of the respondent who had this to say;

"The number of patients is usually less compared to the number of student in each allocation and hence we do not have equal chance to practice on".

4.3.8. 2 Clinical Supervision

The other category looked at was the clinical supervision. The themes that emerged were pedagogical factors and student engagement.

4.3.8.2.1 Pedagogical Factors

The approaches used in demonstrating procedures can influence the students' ability to learn and integrate or not.

The respondent stated that there was a discrepancy on the manner the procedures were demonstrated by the nursing staff and the tutors and clinical instructors. One of the respondents said;

"*Tutors, clinical instructors and nurses have different ways of doing procedures hence it becomes disturbing on how to go about on certain procedures according to the way they are described in the procedure manuals".*

4.3.8.2.2 Student Engagement

There was need for the students to be self directed in their learning. However some respondents acknowledged that students were not taking responsibility of their learning. The respondent said that they were not serious. The respondent staid the following;

> "*Coordination among nursing students is not there, due to lack of seriousness until the final year".*

4.3.8. 3 Student Related factors

The last category that was looked at was student related factors. Responses that were captured ranged from poor support from the tutors and clinical instructors, poor support from nurses.

4.3.8.3.1 Support from the tutors and clinical Instructors

The respondents said they were not being supported by the tutors and clinical instructor. The tutors and clinical instructors did not follow students in the wards.

The respondents had this to say;

> *'The tutors and clinical instructors are rarely on the wards to work with us or observe us on how we are progressing and there is no one to one interaction with them".*

4.3.8.3.2 Support from the nursing staff

Furthermore, lack of support from the nursing staff was mentioned as a factor.

One of the respondents gave the following response;

> *Qualified nurses don't show interest and they are unwilling to work hand in hand with us students*

4.3.8.4 Respondent's suggestions on how integration of theory into practice in clinical skills acquisition could be improved

Respondents were asked to make suggestion on how integration of theory into practice could be improved in clinical skills acquisition. From the responses given three main categories were made based on the most commonly proposed intervention. These were a) Clinical supervision factors b) Student related factors and c) environmental factors. The sub categories were as follows;

4.3.8.4.1 Pedagogical factors

The commonly suggested sub category was pedagogical. The respondents suggested that there was need for the nurse educators, clinical instructors and nursing staff to harmonise between what is taught in class and what the nurses demonstrate in the clinical area and the clinical instructor should demonstrate the procedures in the ward as well.

One of the responses was;

> "*The nurse tutors need to sit with the clinical instructors and develop the standards for theory and practice so that they reduce the confusion among nursing students"*

and another response was as follows*;*

> *'The procedures demonstrated in the skills lab should also be demonstrated on the actual patients in the wards by clinical instructors'.*

4.3.8.4.2 Assessments and feedback

The other respondents proposed that there was need to assess nursing students during their allocation and as they leave the ward so as to ascertain whether they have learnt and achieved the skills competently. They further said that there was need to give positive feedback also and not only negative feedback. Below is the response;

> *"The teaching staff should follow us in the wards and assess our performance. They should also discuss the weaknesses and strengths of the students to improve practice and theory".*

4.3.8.4.3 Learning styles

The respondents also suggested that procedures should be demonstrated in the skills lab before students go to the ward and the nurse tutors, clinical instructors and nursing staff should participate to ensure uniformity. The procedures should also be demonstrated on the actual patients before allowing the students to practice on their own

One of the responses was as follows;

> *"Before students go in the clinical area, the teaching staff should demonstrate what is expected of the students in the clinical area, and should involve some nursing staff during their demonstrations in the clinical area so that they are acquainted with the latest nursing practice".*

4.3.8.4.4 Follow up of students

Most of the respondents posited that there was need for the nurse tutors and clinical instructors to provide the student with support by being present in the wards with the students. One of the responses was written below;

> "*The teaching staff should follow up the nursing students to observe and mentor the students even being there for an hour a day"*.

4.3.8.4.5 Equipment and material resources

The respondents suggested that they be supplied with materials and equipment from the time they are allocated to that particular placement for practice during each allocation.

> "*The school should provide adequate equipment in the student cupboard so that we are able to practice".*

4.3.8.4.6 Staffing

There was need to increase on the number of the clinical instructors to ensure adequate attention was rendered to nursing students. This was emphasized by the responses below.

> *'There should be enough clinical instructors on the wards to demonstrate procedures to the students'.*
>
> And
>
> "There is need of more tutors and more clinical instructors to enhance learning".

4.4 Focus group discussions

The total of two (2) focus group discussions was conducted. The number of FGDs held was not predetermined. The researcher conducted the FGDS until a saturation point was reached. The saturation point was decided upon as no new information was coming from the discussions

Table 4: 16 Themes, Categories and Sub categories

Serial Number	Theme	Main Category	Subcategory
1.	Clinical environment	Clinical skills acquisition	a. Inadequate equipment in the clinical area b. Inadequate staffing levels c. Attitude of nursing staff d. Student patient relationship e. Inadequate follow up by nurse Tutors and clinical Instructors
3	Clinical supervision	Pedagogical factors	a. Inadequate demonstrations in the skills laboratory and clinical setting b. Approaches to performing procedures
4.	Student related factors	Engagement in Learning process	a. Inadequate self directed learning b. Lack of peer support
5.	Solutions to improve the integration of theory	Solutions proposed to be done by the nursing staff and clinical instructors	a. Demonstration of procedures in the skills laboratory and in the wards on patients b. Follow up of the nursing students c. End of allocation of assessments
6	Solutions to improve the integration of theory	Solutions proposed to be done by the nursing students	a. Engagement in own learning b. Peer learning c. Documentation

Data from the focus group interviews and field notes were grouped according to five main themes. These were further put into categories and finally fourteen subcategories were identified which helped to discuss the themes.

4.4.1 Clinical Environment

Clinical Environment emerged as the first theme and clinical skills acquisition was further identified.

4.4.1.1 Clinical Skills acquisition

The theme was further divided into sub categories. The following were the Subcategories

4.4.1.1.1 Inadequate equipment

Inadequate equipment was espoused as a hindrance in the acquisition of clinical skills, the nursing students were not able to practice adequately as they had to improvise and not practice at all due to lack of equipment. The respondents gave the following response;

Third year student nurse Mary in Group A had this to say;

> "*We do not have enough equipment to use in the clinical area; we normally improvise when doing procedures*",

It was further stated that equipment was made available for special activities like the exams by student nurse Mwila from the third year students in Group A.,

> "*equipment is only made available during assessments and exams".*

4.4.1.1.2 Attitude of nursing staff

Most of the respondents indicated that the nursing staff did not show interest in having the students around and did not pay much attention and hence the nursing students could not adequately learn and practice what they were taught on the actual patients. Kelvin a third year student from Group A had this to say;

> *Qualified nurses don't show interest and they are unwilling to work hand in hand with us students and they do not explain procedures to us, they just tell us to observe and then do the correct things, when you fail to do the procedure they will shout at us''.*

4.4.1.1.3 Staffing Levels

It was posited that the inadequacy of members of staff prevented them from monitoring the students as they were focusing on the patients. However even the patient care being given was inadequate as they preferred to do short cuts in order to finish their chores. This was further emphasized by the response from the following respondent from Group B, James the second year student who said the following;

"*There is understaffing of the nursing staff which makes the students to be fillers than learners."* Furthermore, "*when we report for work we are considered to be working regardless of our knowledge levels, it's difficult to attend to the patient without knowing how to care for the patient".*

The other respondent, Inonge from Group B made the following observation;

"*Nurses normally do short cuts when performing their procedures because of their busy schedule and they want us students to do the same. They say this is not an exam, hence just do the procedures fast***".**

4.4.1.1.4 Inadequate follow up by nurse tutors and clinical Instructors

The nursing students were not adequately followed up by the nurse tutors and clinical instructors when they were in their clinical allocation.

Respondent Mike from Group B had this to say;

"when we are going to the wards, we are given very good outline of objectives which can help us gain the core competencies, however clinical instructors do not follow us to see whether we have achieved them or not".

4.4.2 Clinical Supervision

4.4.2.1 Pedagogical Factors

4.4.2.1.1 Demonstration of procedures in the skills laboratory and clinical setting

The demonstration of procedures on the actual patient had to be in sequence to the way it was taught theoretically and demonstrated in the skills laboratory. However the students mentioned that there were differences in the approach to doing procedures. Respondent Mary from Group A made the following observation;

"*Procedures are demonstrated different by the clinical instructors."*

Furthermore the nursing students attested that certain procedures were not demonstrated; however the students were expected to practice and know the procedures. The respondent John from Group A had to say the following;

"Not all procedures were taught and demonstrated in the skills lab but tutors expected students to know them and have them signed in the evaluation manual even procedures that they had never been seen."

4.4.2.1.2 Approaches to performing procedures

The nursing students learn to perform certain procedures through observations of qualified nurses. However there was an observation by students that procedures were demonstrated differently according to the understanding of the qualified nursing staff. This approach could lead to failure to acquire appropriate skills.

According to John, the third year nursing student in Group A;

> *"Nursing students had misunderstandings on the proper way of performing certain procedures, when doing procedures they want to do the procedure the way they think they were taught*".

4.4.3 Student related factors

4.4.3.1 Engagement in learning process

4.4.3.1.1 Inadequate self-directed learning

There was need for the students to be self directed in their learning as it helped in acquisition of skills. With their understanding of the best approaches, they learn better when they actively participate in clinical practice as it promotes knowledge and skills acquisition. However it was noted that nursing students lacked seriousness in clinical practice. Richard from Group B made the following observation;

> *"When there is no one following us or observing us doing the procedure we tend not to do the procedures accordingly, we just do what the nurses are doing."*

4.4.3.1.2 Lack of peer support

Fellow students were a source of knowledge as they were able to demonstrate procedures. However according to the observation made, students felt that they did not engage in peer learning. Respondent Joyce from Group A had the following to say;

> "*From the time our seniors graduated we no longer demonstrate procedures to each other. We also fear to be punished by the qualified staff if they found us alone doing procedures instead of patient care."*

4.4.4 Solutions proposed to be done by the nursing educators and clinical instructors

4.4.4.1 Demonstration of procedures in the skills laboratory and in the wards on patients

The nursing students attested that there was need for the tutors to demonstrate procedures in the skills laboratory before they were allocated to the wards. They further noted that there

was need to do return demonstrations on the actual patients before permitting students to do the procedures.

This could help the nursing students gain their skill as they would be demonstrated to within the natural learning environment. This was emphasized by the following statement from one of the respondents;

> "*The tutors should be demonstrating procedures on the actual patients after they have demonstrated in the skills laboratory together with the nursing staff to harmonise the way procedures are done"*.

It was also noted that there was need to perform procedures according to the recommended standards. Hence the nurses needed to practice accordingly. This could only be achieved if the nurses observed the correct techniques of doing the procedures since they spent more time with the nursing students and were the role models to them. This was further emphasized by one of the students who said the following;

> "*When tutors and clinical instructors come in the ward then we do all the procedures according to stipulated guidelines and the nurses also see the need of us doing these procedures accordingly and not only duties of the ward".*

4.4.4.2 Follow up of the nursing students

However another sub category emerged which was emphasized by the respondents was that students preferred to be followed up by the tutors and clinical instructors. This gave them a sense of belonging and an opportunity to be mentored. It helped them to be more committed to their practice. This was verified by the following example;

> *"We become serious with our practice when we are followed up".*

4.4. 4.3 End of allocation of assessments

There was need to evaluate the performance of the nursing students. This would help determine whether they had learnt anything during their clinical allocation. The nursing students suggested that they be assessed in each allocation to ascertain that they had achieved the objectives and gained the experience they needed. For example Joyce from Group A posited that;

"*They should introduce the end of allocation test for all the wards students are allocated in".*

4.4.4.4 Availability of equipment

It was acknowledged that in order for the nursing students to be able to practice they needed equipment. Hence there was need for the training institution and the hospital to provide specific equipment for the recommended procedures. This would enhance their skills as they would practice according to their recommended standard. For example Jolezya from group B had this to say,

"*They should provide equipment to all the wards during the clinical allocation and not only during assessments and exams*".

4.4.5 Solutions proposed to be done by the nursing students

4.4.5.1 Engagement in own learning

The nursing students have also a responsibility towards their own learning. They acknowledged that they needed to be adequately engaged in their own learning. According to Lubasi from group A;

"*We need to put more effort in our learning. We should not take lightly the work we do in the ward".*

4.4.5.2 Peer learning and role modelling

Students needed to be responsible and accountable for their own learning. They proposed that they should also support each other and be role models to those who were novice or not competent enough to perform the tasks assigned. According to Mike in Group B, he said the following;

"We need to be more responsible. In each allocation we should formulate a schedule for procedures. We should also help each other like our seniors used to demonstrate procedures and explained things to us".

4.4.5.3 Documentation

It was observed that display of flow charts of performing procedures would guide the nursing students in performing certain procedures. The nursing students felt that it would promote uniformity in doing procedures. For example a respondent Lubasi made from Group B made the following suggestion;

"*We should develop posters on some procedures in the ward like what is in gynae ward and theatre to promote uniformity and standard way of doing procedures".*

4.5 Conclusion

The chapter presented a detailed descriptive analysis of the quantitative data and a thematic presentation of the qualitative data. The findings of the study revealed factors that influence integration of theory into practice being clinical supervision, clinical environment and student related factors. The factors identified as hindering the integration included inadequate follow up and support of the students in the clinical area, Lack of equipment, and inadequate clinical instructors and low staffing levels in the wards.

It was further posited that the procedures done by the qualified staff were different from the way they were demonstrated to the students hence leading to a misunderstanding of the correct approach of doing procedures among nursing students. Suggestions as to how to advance the integration of theory and practice were also solicited.

It was suggested that the training institution could serve to promote the integration of theory into practice through improved communication and professional relations between faculty and clinical staff, as well as improving the teaching and learning process through adequate support of students by tutors and clinical instructors in the wards. There was need to also procure more equipment and supply the students with resources during the clinical allocation as this could enhance clinical skills. The next chapter will present the discussions of findings, recommendations and the conclusion.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents a discussion and interpretation of the findings in line with existing literature on the phenomenon of this study. The chapter also presents recommendations, limitations and conclusion of the study. This study was aimed at exploring the factors that influenced integration of theory into practice in clinical skills acquisition among nursing students in Livingstone, Zambia. The objectives of the study were to explore environmental factors that influenced integration of theory into practice, determine the student related factors that influenced integration of theory into practice and establish the association between integration of theory into practice and clinical supervision.

5. 2 Socio-demographic variables

The majority of the participants were aged between 19 -40 years and the mean age was 23.8 years. This was attributed to the fact that most of the participants were enrolled into training after the 20^{th} birth day or later. In Zambia, the average age of people beginning tertiary education is 18- 24 years (CSO, 2016). Nursing being a female dominated profession (Katete, 2014) 73.3% (66) of participants in this study were female.

5.3 Integration of theory into practice

The integration of theory is important in provision of quality care. Table 4: 16 showed all the factors that were entered into the logistic regression model to identify the odds of the factors influencing the integration of theory into practice in clinical skills acquisition, these included: theoratical knowledge and practice, appropriate care, sequencing clinical allocation with core competencies to be achieved, documentation, reflection and having objectives explained. The following factors were found to be significant with the odds ratio and *p*- value of: theoratical knowledge and practice(*OR= 409.749. p- .004)* and sequencing of allocation with core competencies (*OR = 69.507, p- .001)* .

5.3.1 Theory taught in the classroom and the practice in the clinical area

The theory taught was supposed to be appropriate and according to what was practiced in the clinical area. The findings showed majority 55% (49) of the respondents felt that the theory taught was sequenced with the practice in clinical area which was significant in the integration. The findings showed that 74.4% of the nursing student who felt that the theory was not relating to what was being practised in the clinical area did not integrate (OR = 69.507, p .001). Furthermore it was observed that what was practised by nurses was different from what was demonstrated in the skills laboratory as it was observed that "tutors, clinical instructors and nurses had different ways of doing procedures hence it was not clear on the appropriate approach for certain procedures in relation to the procedure manuals".

According to the study done by Cheraghi et al, (2010) in Iran, it was noted that academic education did not prepare students to be competent and skilful. It provided medical-centred theoretical knowledge from western literature to them that was not applicable, and was not focused on their local and regional health needs; hence there was inadequate integration and acquisition of clinical skills. Furthermore the nursing students posited that the procedures were done according to the individual understanding. According to the studies done in Limpopo it was stated that the care being given was of low standards which led to poor quality care to the patients and the students were made to observe care which was not up to standards and hence failed to acquire the required skills (Malwela, et al., 2016). This related to the findings in this study in which the nursing students mentioned that midwives in labour ward did not follow the ideal steps in performing some procedures. This could lead to students observing wrong things and be uncertain with what was ideal and what was not.

5.3. 2 Sequencing clinical allocation and Core competencies

The findings showed that the core competencies (OR= 409.749, *p* - 0 .004) needed to be clearly understood and this could be achieved when the learning environment was prepared according to the objectives to be achieved. According to Dgadaran, et al., (2012), careful selection of clinical cases, choosing hospital sectors relevant to clinical learning objectives and an appropriate physical environment promoted integration of theory and reduced the theory practice gap. Dafogianni, et al (2015), demonstrated that in Greece the nursing student sampled acknowledged that the content of the clinical courses achieved the learning objectives at the start of clinical practice, and they were appropriate to the subject of clinical learning,

Similar studies done in Limpopo province showed that the sequencing of what was taught and practiced was inadequate due to nursing students being sent to some allocations before they were taught in class, (Mabuda et al., 2008). This led them to lacking in theoretical knowledge and hence being unable to integrate the theory into practice. There was need to harmonise the nursing practice so that nursing students were exposed to similar learning environment.

5.3.3 Explained objectives to the nursing students and clinical staff

The objectives also had been explained in relation to the competencies to be achieved, and then the nursing students would be able to integrate the theory into practice. The findings from the study showed that 84.4% (76) respondents acknowledged that they knew exactly what was expected of them in the classroom and in the clinical practice. However some were not able to achieve them as they were engaged in other duties which were not nursing duties.

Consistence with findings posited by Pillay & Mtshali, (2008) that each student was availed a copy of the clinical objectives to be achieved for that allocation as this would promote increased understanding of what was to done, but the participants raised the concern that they were unable to cover all the objectives on time. According to the studies done in Canada, it was observed that clinical nurses required an understanding of the learning requirements and anticipated competencies for each level of training of nursing students who entered their clinical environment in order to best support and critically assess the nursing students. To this end, it was suggested that academic and clinical educators provide clinical nurses with an outline of student competencies and learning needs at the onset of each clinical rotation, (Kern, et al., 2014).

5.4 Variables influencing integration of theory into practice

The findings focused on the clinical supervision, student related factors and the clinical environmental factors on how they influenced the integration of theory into practice. The findings showed that there was some relationship with the factors influencing the integration of theory into practice although some of the factors were not statistically significant. According to the binary logistic regression X^2 (6, n= 90), 21.8 $p < .001$. It was observed that student related factors had significantly influenced the integration of theory into practice *(*p<.01, *OR*= 5.055, 1.329-19.228). However the findings did not show statistical significance in clinical supervision and clinical environment.

5.4.1 Clinical environment

The clinical environment included the equipment and materials, members of staff, their attitude and their availability in the clinical area. According to the findings in the study on table 4: 6 more than three quarters 82.2% (n=74) disagreed to the statement which said "The equipment and medical and surgical supplies were usually adequate for practice. More than three quarters of the respondents 78.9% (n=71) also disagreed that "the equipment is always in good working condition". The none availability of the resources can hinder the ability of the nursing students to adequately practice. Furthermore they may feel that they are not supported in their learning. Supportive environments facilitate a progression of socialization where apprehension lessens, poise increases and learning is improved, (Papastavrou, et al., 2010). It is from clinical placements that students start to acquire the needed attributes of caring, critical thinking skills, application of situational understanding, competence and clinical skills, (Lawal et al., 2015).

5.4. 1.1 Availability of Equipment and Material Resources

Lack of resources for practices has been attested as a factor hindering integration of theory into clinical practice. According to Lawrence, (2014) material resources were required to enhance optimum clinical learning experience. The findings of the study showed a significant relationship between factors of integration of theory and availability of resources. Those who adequately identified the factors of integration of theory into practice also acknowledged that there was inadequate availability of equipment and resources in the clinical area. Furthermore from the open- ended questions and the focus group discussion the theme that emerged was on having inadequate equipment and the equipment was made available usually during exams. Lack of equipment and supplies hinders the students from performing procedures according to the requirements.

Similar studies done in Malawi showed that nursing students worked without adequate resources, and in some instances they had to improvise if they had to practice, (Msiska et al., 2014). According to Mwale and Kalawa, (2016) this led to lack of acquisition of clinical skills.

5.4.1.2 Staffing levels

Clinical health staffs were an important part of the clinical learning environment. They provided the link between the theoretical knowledge and the transfer of knowledge into the practice and clinical skills acquisition. According to the study findings 62.2% of the nursing students observed that there was a shortage of staff in the clinical area. Furthermore, these findings were attested from the focus group discussions which showed that one of the major subcategory was staff shortages and this led to nursing students failing to apply what they learnt into practice. According to Pillay & Mtshali (2008), Cheraghi et al, (2010); Msiska, et al., (2014), sometimes due to staff shortages, nursing students were used as part of the workforce because of their experience, bypassing the reason for their presence in the units, namely to learn what would be expected from them as registered nurses. One of the nursing students in the study reported that being regarded as part of the workforce delayed her in completing her objectives in particular units. For example; "when there is staff shortage- the nursing students are required to do more of the work that should be done by members of staff at the expense of students practicing the recommended procedures".

Similar studies done in Iran posited that shortage of staff led to heavy workloads and nursing students being allocated patients to care for and performing non nursing duties which further widened the theory practice gap, (Cheraghi et al., 2010).

5.4.1.3 Attitude of the Nursing Staff

The findings showed that the students who stated that nursing staff were willing to teach the students also adequately identified factors to integrate theory into practice (57.4%. $P< 0.006$). However the results from the open ended questions and focused group discussions stated that most of the respondents attested that the nurses had bad attitude towards nursing students. Some of the nurses felt that the nursing students delayed them from performing their duties and others thought nursing students were a burden. This led the nursing students to fail to practice adequately and progressively failed to integrate and acquire the recommended skills. Furthermore they could not consult the members of staff for guidance in areas they were lacking.

This was attributed to the fact that "health staffs do not motivate students but blame them whenever something goes wrong and some members of staff were not willing to teach".

In similar studies done among midwifery students it was observed that some midwives felt that it was not their responsibility to teach nursing students and they were too busy to have time to teach, (Malwela et al., 2016). Other qualitative studies done in Norway by Dale, et al., (2013) and Iran by Baraz et al., (2015) showed similar findings, the nurses felt uneasiness and considered the nursing students to be a burden. However, it was noted that nursing staff without adequate skills and knowledge were the ones not willing to work with students. These findings were similar to the qualitative study done in Botswana in which one of the respondents acknowledged that those nurses without the latest information on nursing sciences preferred to give the students a manner and avoided them, (Rageswaran, 2016).This could be attributed to lack of confidence, (Lawal, et al., 2015).

5.4.1.4 Follow up by Nurse Educators and Clinical Instructors

The guidance and follow up by nurse educators was important in the clinical practice of nursing students as it provided an opportunity to ensure that what was taught was similar to what was practiced. It also provided the nursing student an occasion to clarify certain situations that they were not sure. The findings for the clinical environmental factors showed that the follow up by the nurse educators ($X^2 = 8.328$, $p < .016$) in the clinical area influenced integration of theory into practice. Similar findings from the focus group results showed that nursing students were not adequately followed up by the nurse educators, clinical instructors and nursing staff. There was need for the members of staff to follow them up as it helped them understand more the knowledge they had been given and also improved their skill. This was emphasized by one of the respondents who stated that "the clinical instructors are rarely on the wards to work with us or observe us on how we are progressing". Furthermore it was attested that the specific members of staff allocated to students for mentorship were not available.

These findings were similar to studies done in Iran as it was observed that the learning environment was not supportive as the behaviour of the clinical instructors was that of being harsh and giving bad criticism, this led the student to avoiding the clinical sessions, (Baraz, et al., 2015). Contrary to these findings, a study done in Cyprus among 463 nursing students showed that there was statistical significance (p <0.001) on the satisfaction with nurse educator's follow up and their clinical practice. The highest satisfaction was among the first year students, (Papastavrou, et al., 2016).

The staff frequent follow ups was important as it promoted interaction and explaining at the natural environment where care was being provided. Similar findings were noted in a study done in Greece which showed that nursing students appreciated the follow up by the clinical teacher as the teacher promoted dialogue, clarified questions in clinical setting and urged the critical reflection and concerns of students of which it promoted clinical learning and integration, (Dafagionni et al., 2015) .

According to Chen, et al., (2009), the nurse educators prepared the learning needs for the students and ensured that they were prepared according to the social environment that the student was in. The communication was adequate to promote horizontal and vertical scaffolding. This would promote the student attain the required skills within their zone of proximal development and enhanced their independence in their learning. Similarly Kristerfferzon, et. al., (2012) acknowledged that the visit by clinical tutors during clinical practice provided a link with the more academic aspect of the practice; it also encouraged reflection and genuineness to discourse of students' clinical experience. This was in accordance with the views of the respondents in this study; according to the findings most participants wanted the nurse tutors to follow them up in the clinical area. This would help in clarifying uncertainty on certain procedures and also put together the theory learnt in a real life situation.

5.4.2 Student Related Factors

5.4.2.1 Relationship between nurse educators and the clinical staff

The findings of the study showed that 43% of the nursing students felt that the relationship between the nurse educators and clinical staff was good and it was further noted that there was a significant relationship (x^2= 9.914, $p < .007$) between factors of integration of theory into practice and the relationship between nurse educators and clinical staff. The good relationship promoted integration of theory into practice as there was good communication of expectations for the students and challenges that they faced during clinical learning. Hence there was need for them to ensure good linkages to promote continuity in knowledge transfer.

Contrary to these findings, studies done in Japan among nurse educators and clinical instructors it was observed that there was inadequate communication between nurse educators and clinical staff which led to inadequate understanding on what to be taught to the nursing students while in the clinical area. It was further argued that due to lack of time it was impossible for nurse educators to explain to the clinical staff all the expectations, (Taniyama, et al., 2012). It was further argued that nurse educators needed to ensure that they offered appropriate support so that even during their absence the clinical staff would still facilitate the learning of the nursing students. According to Mattila et al., (2010), the nurse educator's role always involved acting as a connection between the institution and the clinical practice placement as well as a support person for the clinical instructor and a facilitator of learning for students.

5.4.2.2 Relationship between the clinical staff and the nursing students

More than half of the respondents did not agree that clinical staff were always available to guide and assist them in the clinical practice in achieving their goals. According to the findings, it was statistically significant (59.6%, $p < .017$) that nursing students who adequately identified factors of integration of theory into practice disagreed that clinical staff supported them in the clinical. The findings of the study showed that more than three quarters of the respondents 82.2% (n=74) disagreed that the clinical staff had no authority over their learning. According to the study done in Jamaica, 78.8% of Year 2 students and 73.3% of Year 3 students acknowledged that the relationship with the clinical staff influenced learning, (Lawal et al., 2015). Similar findings in the study done in Greece attested that nurses and doctors contributed to the nursing students' learning in the clinical area, According to Lawal, et al., (2015), this had been ascribed to the fact that clinical staff played the role of counsellor, instructor, mentor and more to the nursing students as they transitioned from novice to experts in the field of nursing.

5.4.2. 3 Level of training

The findings showed that 51.2% (n= 27) of the respondents in their third year of training adequately identified factors of integration of theory into practice while 17% (n= 8) of first year nursing students did not identify the factors of integration.

This could be attributed to the fact that the third year nursing students had been to most clinical placements and gained more competencies.

According to Benner (1984) the nursing students when they were still novice they would not have adequate knowledge and hence may not integrate, as integration of theory into practice was based on adequacy of knowledge. According to the chi square there was no statistical significance on the factors of integration of theory into practice and level of training. Contrary to these findings, in a study done in Cyprus the first year nursing students were more satisfied with the clinical placements as the satisfaction declined with more years of study, (Papastavrou et al., 2016). This was attributed to the fact that the first year nursing students were more anxious and unprepared for the clinical placement. However third year nursing students were more experienced and they had different objectives as compared to these other of other years of study.

5.4.3 Clinical supervision

In this study findings showed that there was an association between clinical supervision and the integration of theory into practice. About average of the respondents 36.7% felt it had some influence on the integration of theory into practice. More than half of the respondents 52.2% preferred to be supervised and furthermore to be accompanied to the clinical area. A chi – square test for independence indicated a significant association between integration of theory into practice and clinical supervision, X^2 (2, n= 90) = 12.7 p .002 and crammer V = 37.6. The findings showed that nursing students needed to be supervised in order for them to be able to integrate the theory into practice. They acknowledged that being supported would help them integrate what they had learnt. These findings corresponded with other studies, (Kristerfferzon, et. al., 2012 & Kaphagawini & Useh, 2013).

The guidance of student in the clinical area was supposed to be the responsibility of the clinical instructors and clinical staff working with the nursing students. The findings of the study showed that the specific variables that influenced integration of theory into practice were clinical staff support (X^2 =8.14, p<.017), clinical instructors availability (X^2 = 6.822, p< .033) and willingness to teach nursing students(X^2=10.143, p<.006).The findings showed that those nursing students who were not supported did not identify the factors of integration of theory into practice while those who had adequate support adequately identified the factors.

Similar qualitative studies done in Limpopo showed that there was inadequate guidance and support from the staff which led to inability to integrate the theory into practice, the nursing students learnt as they integrated with the qualified staff, (Rikhotso et al., 2014). Similar studies done where the nursing students were guided by the unit based nurses, showed that nursing students had to do preparatory work before placement to ensure adequate participation which promoted self directed learning, (Kern et al., 2013).

Furthermore, Elcigil & Sari, (2006) established that partnerships with nurses in mentoring roles increased students' belongingness by guiding learning, sharing praxis experiences, and expounding outlook. According to the study by Kern et al., (2013) the students expressed an aspiration to be aligned with knowledgeable and open-minded clinical educators who were available to support their learning within favourable clinical surroundings. This was supported by a study done in Greece in which it was argued that the clinical teacher encouraged discourse, resolved questions in clinical setting and encouraged the critical judgment and concerns of students, (Dafogianni, et al 2015) .

5.4.3. 1 Pedagogical Factors

Nurse educators provided not only theoretical knowledge but as well as clinical knowledge. Most of the participants argued that there was need for the tutors to be demonstrating the procedures on the actual patients as it would help them understand the procedure. It is espoused that the nurse educators were in a better position to enhance the roles of the participants in the integration of theory and practice in nursing education, since they facilitated the teaching and learning process, (Dlamini, 2011).

Accordingly, Hussein & Osuji, (2017) posits that the role of nurse educators was of a knowledge conduit which facilitated transmission and implementation of best practice guidelines. They further argued that nurse educators were expected to support practitioners and student nurses during their practice to ensure safe administration of care and achieve best clinical outcomes. This was attained through demonstration of procedures in preparation for the clinical placements. As the observation were made from the focus group discussions that;

"Before nursing student go in the clinical area, the teaching staff should demonstrate what is expected of the students in the clinical area' and should involve some nursing staff during nursing demonstration so that they were acquainted with the latest nursing practice".

The demonstration involving the nursing staff would further clear the misconceptions and confusions that nursing students sometimes faced in the clinical area.

According to Sharif and Masoumi (2005), students became anxious and confused if they practised something different from what they learnt in the classroom and this could affect their integration of theory into practice. In this study 33% of the nursing students felt that there was uncertainty between what was taught and what was practiced in the clinical area. However the demonstration of procedures had always been a challenge as the old nurses still maintained the approaches they were taught in performing procedures. According to Cheraghi et al., (2012) studies done in Iran showed that nurses preferred the old methods of performing procedures which they were comfortable with and hence many nursing procedures were done in the wrong way, different from what was taught in the clinical skills laboratory in the school. In other studies it had been referred to as the hidden curriculum of nursing, (Lapeña-Moñux, et al., 2016). This led to widening the theory practice gap and prevention of integration of theory into practice.

5.4.3.2 Clinical staff as Role Models

Nursing students must be proficient and well-organized whilst performing their practice in order to acquire clinical skills. However this may be threatened when students observe dissimilar practices of qualified nurses. Findings showed that qualified staff performed procedures different from what was stipulated in the procedure manuals. Similar studies done by Mwale & Kalawa, (2016), had posited that often qualified nurses' familiarity with carrying out the clinical procedures and low staffing levels were reasons why skills were not conducted in accordance to the nursing standards. Similar findings from the study also attributed the inadequate staffing to contribute to poor performance by the nursing staff

5.4.3.3 Reflection

Reflection was one of the strategies that nursing students used to acquire new knowledge. The findings of the study showed that (51.1%, $p < .022$) nursing students who did not get engaged in reflection also inadequately identified factors of integration of theory into practice. This could be attributed to the fact that reflection had not been adequately explained to the nursing students. This was observed during the focus group discussion as some participants wanted the explanation of the meaning of the word.

Consistent with these findings was a study done in Spain which showed that nursing students did not adequately engage in reflection, (Lapeña-Moñux, et al., 2016). According to studies done by Kapaghawani & Useh, (2013), reflective process allowed nursing students to learn from their practice experience through discussions and meetings with other students under the guidance of the preceptor. Hence when this was missing then their integration of theory into practice would be hindered.

5.4.3.4 Assessment and Feedback

Assessment was the exercise of deduction on the quality of students'work as a way of supporting learning and reviewing its outcomes (Sandy, 2014). Therefore there was need to ensure that what was assessed was planned according to the competencies of the student. The findings of the study showed that 48% of the respondents felt that the assessments were done and prepared according to the procedures that had been demonstrated. Assessment according to the procedure showed statistical significance ($x^2 = 9.23$, $p < .010$). According to Hunt et al., (2011) assessment should be done to review whether the student had understanding of the basic standard principles of practice as they had been prepared. Furthermore the sub category on the sequencing of tests and examinations was acknowledged as a factor. About 80% of the respondents felt that if the tests and examinations were sequenced according to what was expected of them to learn then they would be able to integrate. To that effect one of the respondents even proposed that each allocation they be given end of allocation tests.

Contrary, to these findings done in Malawi showed that evaluation could be a source of bias especially when nurse educators and clinical staff did not closely monitor the students during the period of allocation, (Msiska et al., 2014). According to Elcigil & Sari, (2007) nursing students stopped focusing on learning instead they just prepared for the assessment in order to get good grades. This could be worsened by the way feedback was given. Since nurse educators gave more feedback on the weaknesses of the students than the positive findings. The findings of the study showed that more than quarter 53.2% (n= 25) indicated that feedback was given although from the focus group the participants felt it was more of the weaknesses being expressed. As it had been posited by Elcigil & Sari, (2007) the feedback given mostly was negative.

5.4.3.5 Documentation

Documentation of nursing care by nursing students was important as it promoted critical thinking and improvement in the quality of care being provided. The findings of the study showed a statistical significance (*OR= 3.393, P< 0.04*) that when students adequately documented their care they were able to integrate and had a better understanding of what they had learnt and their practice. According to Papastavrou, et al., (2016) in a study done in Cyprus, students' satisfaction was higher when they were actively involved in individual patient care with comprehensive information course and clear documentation of nursing care within a welcoming and educationally structured environment.

5.5 Application of the framework

The conceptual framework adopted from Vygosky's social constructivism and Benner's novice to expert model supported this study. It was anticipated that learning was an internal requisition with the student being actively involved in their learning; however it was influenced by a specific social context. It proposed that learning occurred within a zone of proximal development with adequate scaffolding and through the availability of the more knowledgeable others. According to Benner, (1984) this would occur gradually according to the level of training of the nursing student as they moved from novice to expert.

The study findings showed that factors of integration of theory into practice in clinical skills acquisition were moderately identified although the gap still existed. The findings showed that non availability of resources, clinical staff and nurse educators in the clinical practicum area provided a learning environment that did not adequately promote integration of theory into clinical skills acquisition. Furthermore when nursing students were engaged in their own learning through activities such as reflection they could learn more as it was observed that third year nursing students were able to integrate better as they also had some idea of reflection. However there was need to orient the nursing students in learning methods that promoted self directed learning such as reflection as it was noted from the focus group discussions that most students did not seem to adequately understand how it could be done.

The study also established that some factors influenced the integration such as sequencing the theory and practice to be practiced, availability of resources, explanations of the competencies to be achieved for that allocation ensuring that what was practiced was similar to what was taught.

The nursing students could learn and integrate when they were conversant with the expectations and this could be achieved if the nursing students were actively involved according to their level of training.

5.6 Strengths of this study

It was also established that there was a statistically significant relationship between factors of integration of theory into practice with the theory and practice, sequencing, documentation of nursing care, explanation of the objectives and ensuring competencies were met.

This has added to the body of knowledge which would inform policy towards development of strategies that promote the integration of theory into practice in clinical skills acquisition among nursing students.

5.7 Limitations of the study

The nursing students were recruited from one training institution and therefore the results would not be generalised to other schools of nursing. However transferability of the findings from the comprehensive descriptions of the qualitative approach could be done by other training institutions with similar characteristics relating to clinical practice.

5.8 Implications to nursing

5.8.1 Implications to Nursing Education

The study revealed that procedures were not all demonstrated in the clinical placement by staff the way they were taught in class and the skills laboratory. Therefore there was need to conduct orientation programmes to the clinical staff on the new curriculum so that procedures are done systematically using the recommended approaches. The educators also needed to follow up the nursing students in the clinical area to demonstrate procedures so as to show the students on what was expected on the actual patient. There was also a need to actively engage the nursing students in their own learning using different strategies such as reflection and case studies to promote integration of knowledge into practice.

5.8.2 Implications to Nursing Administration

The study showed inadequacies in the availability of resources. There was shortage of human resource, equipment and materials for use in the clinical area.

The human resource provides the valued knowledge and the skills that the nursing students can learn from. The equipment and the materials provided the students opportunity to practice and acquire the competency and skills which prepared them to be qualified nurses who would provide quality care.

Therefore the nurse administrators should collaborate with the nurse educators to ensure that they provide the resources at all times for the students to have adequate practice.

5.8.3 Implications to Nursing Practice

The study revealed varying levels of satisfaction with most participants having moderate satisfaction of the support they received from the clinical staff.

However it was observed that some clinical staff showed negative attitude towards nursing students. Thus there was need for nursing staff to consider students as part of the health care team who were not only there as an extra hand in patient care but also were there to learn, in order to gain proficiency in clinical skills. Clinical staff needed to involve students in their practice, and improve their knowledge levels. This would eventually improve students' performance and confidence levels.

5.8.4 Implications to Nursing Research

The study revealed that there were some inadequacies in the integration of theory into clinical skills acquisition. It was further revealed that there were inadequate studies done on clinical skills acquisition and the knowledge and theory practice gap. There was need therefore for more studies to be done on this phenomenal at a larger scale to involve other nursing schools in order to improve the knowledge levels, generalise the findings and inform policy makers on nursing clinical education and supervision.

5.9 Conclusion

Study findings revealed that student related factors were statistically significant in influencing the integration of theory into practice. The study further showed that majority of those who had poor clinical environment and inadequate clinical supervision did not adequately integrate theory into practice. Some of the specific factors that were significant in the integration of theory into practice included sequencing of theory taught and the clinical practice, ensuring that core competencies were explained and the practice was adequate to promote integration of theory into practice.

It was also observed that lack of equipment and material resources, shortage of staff also influenced integration of theory into practice in clinical skills acquisition. Furthermore the nurse educators and clinical instructors needed to be following the nursing students in the clinical area.

Therefore there was need to address some of these factors within the clinical environment and clinical supervision that were likely to hinder the integration of theory into practice in clinical skills acquisition and affect the quality of the nurses being trained.

5.10 Recommendations

5.10.1 Recommendation to the Nurse Educators

The study revealed that the overall satisfaction with the theory and clinical practice was low among nursing students. There was need for the nurse educators and clinical instructors to be demonstrating procedures in the clinical environment and conducting clinical presentations to orient the students and clinical staff on new approaches to performing procedures while ensuring that the objectives were given and explained in the clinical placements. Nurse educators and clinical instructors needed to be available so that they could provide support and enhance integration and acquisition of the appropriate skills in the clinical practice among nursing students.

5.10.2 Recommendations to the Nursing School Management

The study findings indicated that some nursing students were able to identify the factors of integration of theory into practice than others. Therefore Livingstone school of Nursing management and the clinical area should strengthen clinical supervision, student related factors and provide an effective clinical learning environment to assist the nursing students integrate what they were learning into their clinical practice as they acquired new skills and prepared to be qualified nurses. The School of Nursing management must also organize regular clinical care meetings and presentations which would enable clinical staff and nurse educators refresh their knowledge and skill of demonstration of procedures and provision of care to the satisfaction of nursing students. The nurse education managers needed to lobby for more clinical instructors to be allocated to the clinical area to reduce on work load which would enable them provide satisfactory support and education to the nursing students.

This was in consideration of the reality that clinical instructors were overwhelmed with a lot of nursing students to follow up on the wards owing to the increased clinical instructor-student ratios. Furthermore the nurse educators needed to have a deliberate plan to ensure that they were in the clinical area as much as possible.

5.10.3 Recommendations to the Ministry of Health

There was need for the MoH to expand the establishment of the training institution so that more nurse tutors and clinical instructors could be employed who would, in turn, follow up and supervise nursing students in the clinical area. The establishment for the registered nurses needed to be expanded so that more nurses were available to build capacity among nurses who would be role models and provide for the nursing students subsequently improving the quality of nursing practice.

5.10.4 Recommendations for Further Research

This study was limited to the factors influencing integration of theory into practice at a particular nursing school in Zambia, from the nursing students' perspective; therefore it is recommended that future studies be extended to other nursing training institution so that a broader understanding of the factors influencing integration into practice and generalization of the findings could be done.

Furthermore there would be need to conduct a study on integration of theory into practice to have basic understanding whether the nursing students actually integrated the theory into practice or not.

5.11 Dissemination and utilization of findings

The results of the study were presented during the postgraduate seminar week on 2nd May 2017. The results will also be presented to management at Livingstone School of Nursing which was the study site. The results will be published in the African Journal of Nurses and Midwives. In addition, bound copies of the study will be submitted to the School of Nursing Sciences, UNZA -Medical Library and Main Library.

The researcher will also present this report during clinical meetings at Livingstone Central Hospital to inform the clinical nurses and other health care providers.

REFERENCES

Abiddin, N., Z, (2008) Exploring Clinical Supervision to Facilitate the Creative Process of Supervision, *The Journal Of International Social Research*,1(3), p13-33.

Akhu- Zaheya, L. M; Shaban, I., A and Khater, W., A.,(2015), Nursing student's perceived stress and influences in clinical performance, *International Journal of Advanced Nursing studies*, 4(2); 44 _ 48. Doi.10. 14419/ijans.V4:2.4311

Amsrud, K., E,; Lyberg A, and Severinsson, E, (2015), The influence of clinical supervision and its potential for enhancing patient safety – Undergraduate nursing students' views, *Journal of Nursing Education and Practice* , Vol. 5(6), p87- 93

Atanga, M.,B.S, Titanji, P, and Ndong, E. B., (2014). An assessment of Acquisition of Skills and Competencies Earned by Students during Clinical Placement in some Hospitals in Fako Division, S.W. Region, Cameroon,. *American Journal of Nursing Research*. 2 (2), p20-25.

Awuah- Peasah; Sarfo, L., A and Asamoah, F, (2013), The attitudes of student nurses toward clinical work, *International Journal of Nursing and Midwifery*, 5(2), pp. 22-27

Baghcheghi, N, Koohestani, R., H, and Rezaei, K, (2011). A comparison of the cooperative learning and traditional learning methods in theory classes on nursing student's communication skill with patients at clinical settings, *Nurse Education Today*, doi:10.1016/j.nedt.2011.01.006

Baraz, S, Memarian, R and Vanaki, (2015) Learning challenges of nursing students in clinical environments: A qualitative study in Iran, *Journal of Education Health Promotion*.(4)52. doi: 10.4103/2277-9531.162345

Barrett, D, (2007), Clinical role of nurse lecturers: past, present and future, *Nurse Education Today*, 27 (5), p367–374

Benner**,** P, Hughes, R.,G, and Stephen, M, (2008) Clinical Reasoning, Decision making, and Action: Thinking Critically and Clinically in Hughes, R.,G; Patient Safety and Quality: An Evidence-Based Handbook for Nurses, Rockville.

Bergjan, M and Hertel, F (2012), Evaluating student's perception of their clinical placements- Testing the clinical learning environment and supervision and nurse teacher scale (CLE+ T scale) in Germany

Birsholt, B, Ohlsson, U, Engstrὸm, A., K, Johansson, A., S, and Gustafsson, M, (2013). Nursing students' assessment of the learning environment in different clinical setting. Nurse Education in Practice 14 (3), p304-310.

Bjørk, Berntsen, Brynildsen and Hestetun, (2013). Nursing students' perceptions of their clinical learning environment in placements outside traditional hospital settings, *Journal of Clinical Nursing*, 23, p2958–2967, doi: 10.1111/jocn.12532

Bloomfield, J,G., and Jones, A, (2013) Using e-learning to support clinical skills acquisition: Exploring the experiences and perceptions of graduate first-year pre-registration nursing students — A mixed method study, *Nurse Education Today* 33, p1605–1611

Bourgeois, S, Drayton, N, and Brown, A, (2011) An innovative model of supportive clinical teaching and learning for undergraduate nursing students: The cluster model, *Nurse Education Practice*, 11(2), p114-118. doi:10.1016/j.nepr.2010.11.005

Brien, S, (2012): Literature Review – NURSING (Southampton), beyond Competence – Southampton Final Report

Brown, J; Stevens, J and Kermode, S (2012), Supporting student nurse professionalization: The role of the clinical teacher, *Nursing Education Today*; 32(5), p606-610.

Brunero, S, and Stein- Parbury, J., (2011), The effectiveness of clinical supervision in nursing: an evidenced based literature review, *Australian journal of advanced nursing* 25(3), p 86-94

Brynildsen, G, Bjørk, I.T., Bernsten, K and Hestetun, M, (2014), Improving the quality of Nursing student's clinical placements in nursing homes: An Evaluation study, *Journal of Nursing Education and Practice,* 14(6), p722- 728, http://dx.doi.org/10.1016/j.nepr.2014.09.004

Central statitstics Office, (2016), Zambia in Figures, Lusaka Zambia

Chambers, D, Thiekötter, A, and Chambers, L (2013) Preparing nursing students for contemporary practice: The case for discovery learning, *Journal of Nursing Education and Practice*, 3(9).

Changiz, T, Malekpour , A, and Zargham-Boroujeni, A, (2012) Stressors in clinical nursing education in Iran: A systematic review, *Iran Journal of Nursing and Midwifery Research*, 17(6), p399–407

Chen, C., W; Feng. R., F and Chiou, A., F., (2009), Vygotsky's perspective Applied to Problem Based Learning in Nursing Education

Cheraghi, M.,A, Salsali, M and Safari, M, (2010), Ambiguity in knowledge transfer: The role of theory- practice gap, *Iranian Journal of Nursing and Midwifery research*, 15(4), p155–166.

Cohen, L; Manion, L and Morrison K, (2007), Research Methods in Education, 6th edi., Routledge, Taylor & group, London.

Corlett, J, Palfreyman, J.W., Staines, H.J., and Marr, H, (2003), Factors influencing theoretical knowledge and practical skills acquisition in nursing students: An empirical experiment, *Nursing Education Today*, 23, p183- 190, Doi:10.1016/s0260- 6917(02)00232- 0

Creswell, J.W, (2003), Research Designs, Qualitative Quantitative and Mixed methods approaches, 2nd Edition, Sage Publications, Thousand OaKs.

Croxon, L, and Maginnis, C, (2007) Are we preparing nursing students for the reality of the clinical practice setting? Journal: Teaching and Research: Making the Connection in Health Science.

Dafogianni, C, Alikari, V, Galanis, P, Gerali, M and Margari, N, (2015), Nursing Students' Views on their Clinical Placement in Pediatric Hospitals of Athens, Greece *International Journal of Caring Sciences*, 8 (3), p- 673- 682

Dagdaran, I, Parvizy, S and Peyrovi, H, (2012), A global issue in nursing student's clinical learning: The theory – practice gap, *Procedia- Social and Behavioral Sciences*, 47, p1713-1718

Dale, B; LeLand, A and Dale J, G (2013), What factors faciltitate good learning experiences in clinical studies in Nursing: Bachelor student's perceptions *ISRN*

De swardt, H. C., Du Toit, H.S., and Botha, A, (2012), Guided reflection as a Tool to deal with theory – practice gap in critical care nursing students, Health S A Gesond held 17(1); 591, 9 http://dx.doi.org/10.4102/hsag.v1il.591

Dlamini, C, (2011), Perceptions of students and Nurse Educators on the integration of theory and practice in nursing education in Swaziland: An exploratory – Descriptive study.

Dumchin, M, (2010) Redefining the future of Perioperative, *Nursing Education*: A conceptual framework, AORN Journal, 92(1), p87- 100.

D'souza, M, S., Venkatesaperumal, R, Radhakrishnana,J, and Balachandran, S, (2013) Engagement in clinical learning environment among nursing student: Role of Nurse Educators, *Open Journal of Nursing* , 3(1), doi: 10. 4236/ojn.2013.31004.

Earl, G, (2009), Using cooperative learning for drug information assignment, *American Journal of pharmacy education*, 73(7):12

Elcigil, A & San, H, Y, (2006) Determining problems experienced by nursing students in their work with clinical educators in Turkey, *Nurse Education Today.*27(5), p491-498 doi:10.1016/j.nedt.2006.08.011

Emmanuel, V and Pryce- Miller, M, (2013) Creating supportive environment for students, *Nursing Times*; 109: 37, 18-20

Endacott, R, (2004). Clinical Research 2: legal and ethical issues in research, *Intensive and Critical Care Nursing*, 21, p313-315

Evans, D, (2006): A Constructivist Model for Learning Clinical Skills,

Fain, A.J., (2009), Reading, Understanding, and Applying Research, Nursing research, 3rd Ed, Philadelphia F.A. Company.

Fotheringham, D; Lamont, D; Macbride,T and Mckenzie, L, (2015), Linking theory to practice in introductory practice learning, *Nurse education in practice*,15(2), p97- 102

Frankel, A (2009), Nurses' learning styles: promoting better integration of theory into practice, Nursing Times; 105(2) p 24- 27

Gillies R., M and Boyle, M, (2010), Teachers' reflections on cooperative learning: Issues of implementation, *Teaching and Teacher Education*, 26(4), p933- 940

Graneheim, U.H, and Lundman, B, (2004), Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness, *Nurse Education Today*, 24(2), p105- 112.

Henderson, S., Happell, B. and Martin, T, (2007), So what is so good about clinical experience? A mental health nursing perspective. *Nurse Education in Practice*, 7, p164-172.

Henriksen,N; Normann, H., K, and Skaalvik,(2012), Development and Testing of the Norwegian Version of the Clinical Learning Environment, Supervision and Nurse Teacher (CLES+T) Evaluation Scale, *International Journal of Nursing Education Scholarship*, 9 (1), Art. 23

Hope. A; Garside, J and Prescsolt, S, (2010), Rethinking theory and practice: pre registration student nurses experience of simulation teaching and learning in the acquisition of clinical skills in preparation for practice.

Hoseini, S A., Islamian, J, I, & Bakhtiari,S, (2009), Basic clinical skills of nursing students: a comparison between nursing students', nursing graduates' and lecturers' viewpoints, *IJNMR*; 14(3): 123-129,

Humphreys, M, (2013), Developing an education framework for the teaching of simulation within nurse education, *Open Journal of Nursing*, 3(4): 35694, doi: 10. 4236/ojn2013. 34049.

Hussein, M, T, E, L & Osuji, J,(2017), Bridging the theory-practice dichotomy in nursing: The role of nurse educators, *Journal of Nursing Education and Practice,* 7 (3), p 20 – 25, DOI: 10.5430/jnep.v7n3p20 URL: http://dx.doi.org/10.5430/jnep.v7n3p20

Hrynchak, P, and Batty, H, (2012), The Education Theory basis of team- based learning, *Medical Teacher*,34 (10), p798- 801

Johnson, B. R and Onuegbuzie, A.J, (2004), Mixed Methods Research: A Research Paradigm whose Time Has Come, *Educational Research*, 33(7), p14- 26

Kala, S, Isaramalai, S and Pohthong A, (2009), Electronic learning and constructivism: A model for nursing education, *Nurse Education Today*, p1-6 doi:10.1016/j.nedt.2009.06.002

Kaphagawani, N.C and Useh, U, (2013) Analysis of Nursing Students Learning Experiences in Clinical Practice: Literature Review, *Ethno Med,* 7(3), p181-185 http://www.krepublishers.com/02-Journals/S-EM/EM-07-0-000-13-Web/S-EM-07-3-000-13-Abst-PDF/S-EM-07-3-181-13-293-Useh-U/S-EM-07-3-181-13-293-Useh-U-Tt.pdf. Accessed on 4th February 2015

Katete, P., G., (2014), Involvement of registered nurses in clinical teaching of nursing students in central hospitals of Malawi

Kern, A, Montgomery, P, Mossey, S and Bailey, P, (2014), Undergraduate nursing students' belongingness in clinical learning environments: Constructivist grounded theory, *Journal of Nursing Education and Practice,* 4, (3), 133- 142, ISSN 19 25-4040 E-ISSN 1925-4059

Kristafferzon, M, Märtensson, G, Mamhidir, A and Lòfmark, A (2012) Nursing students' perceptions of clinical supervision: The contributions of preceptors, head preceptors and clinical lecturers, *Nurse Education Today*, 33(10), p1252- 1257.

Lapeña-Moñux, Y, R, Cibanal-Juan, L, Orts-Cortés, M, I, Maciá-Soler, M,L and Palacios-Ceña, D, (2016) Nurses' experiences working with nursing students in a hospital: a phenomenological enquiry, 24, http://dx.doi.org/10.1590/1518-8345.1242.2788

Lawal, J, Weaver, S, Bryan, V, and Lindo, l.M., J, (2016), Factors that influence the clinical learning experience of nursing students at a Caribbean school of nursing, *Journal of Nursing Education and Practice,* 6(4), ISSN 1925-4040 E-ISSN 1925-4059, p 32- 38. http://dx.doi.org/10.5430/jnep.v6n4p32

Lawrence, K, (2014) Innovation in clinical practice: providing undergraduate nursing students with a best practice clinical learning environment, *Journal of teaching and education* ISSN: 2165-6266: 3(1): p265–274

Levett-Jones, T J. Lathlean, J, J. Maguire, J, and M. McMillan, M (2007) Belongingness: a critique of the concept and implications for nursing education, *Nurse Education Today*, 27 (3), p 210–218

Maben, J; Latter, S, and Macleod Clark, J. (2006). The theory practice gap: impact of professional-bureaucratic work conflict on newly qualified nurses. *Journal of Advanced Nursing*, *55*(4), p465—477

Mabuda, B.,T, Potgieter, E, and Alberts, U.,U, (2008) Nursing students' experiences during clinical practice in the Limpopo Province, *Curationis*, 31(1), p19- 27

Magobe, N.B.D; Beukes, S, and Müller, A., (2010) "Reasons for students' poor clinical competencies in the primary health care: clinical nursing, diagnosis treatment and care programme," *Journal of Interdisciplinary Health Sciences*, vol. 15, no. 1, pp. 181–186

Mahmud, A., (2013), The Integration of theory and practice of paramedic curriculum, *International Journal of scientific and Research Publications*, 3(7), p1-4

Mahmoud, H, M, (2014), Practical learning and theory-practice gap as perceived by nursing students, *International Journal of Current Research*, 6(2), p.5083-5093, *http://www.journalcra.com*

Malwela T, Maputle SM, Lebese RK, (2016), Factors affecting integration of midwifery nursing science theory with clinical practice in Vhembe District, Limpopo Province as perceived by professional midwives. Afr J Prm Health Care Fam Med., 8(2), a997. http://dx.doi.org/10.4102/phcfm.v8i2.997

Mattila, L, Pitkäjärvi, M and Eriksson, E, (2010), International student nurses' experiences of clinical practice in the Finnish health care system, *Nurse Education in Practice* 10, p 153–157, doi:10.1016/j.nepr.2009.05.009

McHugh, M.D, and Lake, E.T, (2010), Understanding Clinical Expertise: Nurse Education, experience and Hospital context, *Research in nursing & health*, 33(4), p276- 287

Migiro, S.O and Magangi, B.A, (2011), Mixed Methods: A review of literature and the future of the new research paradigm, *African Journal of Business Management*, 5(10), p3757 - 3764

MOH, (2010): National Health Strategic Plan 2011 – 2015.

Motlagh, F., G, Karimi, M, and Hasanpour, M, (2012), Iranian nursing students' experiences of nursing, *Iran J Nurs Midwifery Res.*; 17(2 Suppl1), S107–S114.

Morley, D., A, (2013) Supporting nursing students in practice with additional online communicational tools, *Nurse Education in Practice*, 30(1), p1- 7

Msiska, G, Smith, P and Fawcett, T, (2014), The "lifeworld" of Malawian undergraduate nursing students: The challenge of learning in resource poor clinical settings, *International Journal of Africa Nursing Sciences*, 1, p35-42

Mukondhya, T.E.M., Msiska, G, Chilemba, E and Majamanda, M.D., (2014), Experiences of conducting Observed Structured Clinical Evaluation (OSCE) in Malawi, *Open Journal of Nursing*, 4, p705- 713, http://dx.doi.org/10.4236/ojn.2014.410075

Mwale, O, G and Kalawa, R, (2016), Factors affecting acquisition of psychomotor clinical skills by student nurses and midwives in CHAM Nursing Colleges in Malawi: A qualitative exploratory study, *Bio Med Central* doi: 10.1186/s12912-016-0153-7

Ousey, K and Gallagher, P (2007) The theory practice relationship in nursing: A debate, *Nurse Education in Practice*, 7(4), p199- 205

Pallant, J., (2010): SPSS SURVIVAL MANUAL, A step by step guide to data analysis using SPSS, 4th Edition, McGraw Hill, England

Papastavrou, F, Dimitriadou, M., and Tsangari, H (2015), Psychometric testing of the Greek version of the clinical learning environment_ Teacher (CLE+T), *Global Journal of Health* Sciences; 8 (5)

Papastavrou, E, Dimitriadou, M, Tsangari, H and Andreou, C, (2016) Nursing students' satisfaction of the clinical learning environment: a research study, *Biomed central nursing*, 15 (44), 1-10, DOI 10.1186/s12912-016-0164-4

Papathanasiou, I., V, Tsaras, K, and Sarafis, P, (2013) Views and perceptions of nursing students on their clinical learning environment: Teaching and learning doi:10.1016/j.nedt.2013.02.007

Papp, I, Markkannen, M and Bonsdorff, M, V (2003) Clinical environment as a learning environment: nursing students' perceptions concerning clinical learning experiences, *Nurse Education Today*, 23 (4), p262–268

Pillay, P and Msthali, N.G, (2008), Clinical supervision and support for bridging programme students in the greater Durban area, *Curationis* p46-56

Polit, D. F and Beck CT, (2003). Nursing Research; Principles and Methods, 7th edition, Lippincott Williams & Wilkins, Philadelphia.

Polit, D. F, and Hungler, PD., (1999). Nursing Research Principles and Methods, 6th Edition, Lippincott and Wilking, Philadelphia.

Rajeswaran, L, (2016), Clinical Experiences of Nursing Students at a Selected Institute of Health Sciences in Botswana, *Health Science Journal*, 10(6):471- 477, www.hsj.gr/archive DOI: 10.21767/1791-809X.1000471

Ratanasiripong, P, Ratanasiripong, N and Kathalae, D, (2012) Biofeedback intervention for stress and anxiety among nursing students: A randomized controlled Trial, *International Scholarly Research Notices*, http:/dx.doi.org/10. 5402/2012/827972

Rennie, I. (2009) Exploring approaches to clinical skills development in nursing education. *Nursing Times*; 105 (3), 20-22

Rikhotso, S.R; Williams, M.J.S., and DeLee. G, (2014), "Student nurses'perceptions of guidance and support in rural hospitals, Curations 37(1) Art.#164,6 pages. http://dx.doi.org/10.4102/curations.v37i1.1164

Saarikoski, M; Isoahu, H; Warne, T and Leino-Kilpi, H, (2008), The nurse teacher in clinical practice: developing the new sub-dimension to the clinical learning environment and supervision (CLES) scale, *International Journal of Nursing Studies*, 45 (8), p1233–1237.

Sandelowski, M, (2000). Whatever Happened to Qualitative Description? Focus on Research Methods, *Research in Nursing & Health*,23, p334 –340,John Wiley &Sons

Sandy, P, T, (2014) Factors Affecting Assessment of Student Nurses' Clinical Practice: A Phenomenographic Exploration of the Experiences and Understanding of Mentors of a Mental Health Service in England *International Journal Education Science,* 7(1): 57-66.

Scully, J., N, (2011) The Theory – Practice gap and skills acquisition: An issue for nursing, *Collegian*, 18, (2), p 93–98

Sharif, F, and Masoumi,S (2005) A qualitative study of nursing student experiences of clinical practice, *BMC Nursing*, 4(6). Doi: 10.1186/1472- 6955-4-6

Skaalvik,M,W ,Normann, H, K and Nils Henriksen N., (2009), Clinical learning environment and supervision: experiences of Norwegian nursing students. A questionnaire survey.

Soanes and Stevenson, Concise Oxford dictionary, 11th edition, Oxford University Press, London.

Taniyama, M., Kai, C and Takahashi, M, (2012) Differences and commonalities in difficulties faced by clinical nursing educators and faculty in Japan**:** a qualitative cross-sectional study, *BMC Nursing,* 11, 21, doi:10.1186/1472 – 6955- 11- 21
Viewed at, http://www.biomedcentral.com/1472-6955/11/21

Tiwari, M, Lam, D, Yuen, K.,H, Chan, R, Fung, T and Chan,S, (2005) Student learning in clinical nursing education: Perceptions of the Relationship between assessment and learning, *Nurse Education Today,* 25(4), p299- 308

Thomas, A, Menon, A Boruff, J, Rodriguez, M., A and Ahmed, S, (2014), Applications of social constructivist learning theories in knowledge translation for healthcare professionals: a scoping review, *Implementation Science,* 9 (54), doi: 10.1186/1748-5908-9-54

Thrysoe, L; Hounsgaard, L; Dohn, N., B, and Wagner, L, (2010) Participatig in a community of practice as a prerequisite for becoming a nurse: Trajectories as final year nursing students, *Nurse Education Today,*10(6), p361- 366

Vygotsy,L.S. (1962) **Thought and language**. Cambridge MA: MIT Press.

Wall, P; Andrus, P., M and Morrison, P, (2014) Bridging the Theory Practice Gap through Clinical Simulations in a Nursing Under-Graduate Degree Program in Australia
International Journal of Learning, Teaching and Educational Research, 8 (1), pp. 127-135,

Wallendorf, M and Belk, R.W., (1989). Assessing Trustworthiness in Naturalistic Consumer Research, in SV- *Interpretive Consumer Research,* eds. Elizabeth C. Hirschman, provo, UT: p. 69 -84, http://www.Acrwebsite.org/search/view – conference – proceedings.asp

Wilson, J. (2008). Bridging the theory practice gap. *Australian Nursing Journal, 16* (4), p25-25. Accessed on 30th October 2014

Wrenn, J and Wrenn, B, (2009), Enhancing Learning by Integrating Theory and Practice, *International Journal of teaching and learning in higher education,* 21(2), p258- 265, http://www.isetl.org/ijtlhe Accessed on 21st January 2015.

Zamanzadeh, V, Valizadeh, L, Azimzadeh, R, and Mamagani, A (2012) An Investigation on Adoption of Socio-Culturally Based Teaching Strategies Among Iranian Clinical Nurse Educators, *Nursing and Midwifery Studies*, 1(1), p26-30.

Appendix 1

PARTICIPANT INFORMATION SHEET- Quantittive

Title of the Study: Factors influencing integration of theory into practice in clinical skills acquisition among registered nursing students

My name is Maybel S Mpofu; a student pursuing a Master of Science in Nursing Degree at the University of Zambia. I am kindly requesting for your participation in the research study mentioned above, because it is important to assess student's experiences in clinical practice. I will initially explain the purpose of the study, the risks or benefits and what is expected of you. Your participation will entirely be voluntary and you will be requested to sign the consent form if you are agreeable. However should you decline to participate you won't have to sign the consent form.

Procedure

The study will involve signing of the consent form and completing the questionnaire. Once it is completed, the questionnaire should be returned to the researcher.

Confidentiality/anonymity

The data we will collect do not contain any personal information about you. The discussion and information collected in this study will be kept strictly confidential.

No one will link the data you provided to the identifying information you supplied (e.g., address, email).

Risks and discomforts

There is no risk involved in this research though part of your time will be spent answering some questions.

Benefits

There will be no direct benefit to you by participating in this study, but the information which will be obtained will help the policy makers and the training institution to devise programs to improve the learning experience in the clinical practice. The information obtained will be used to improve the learning outcomes and practical performance.

Voluntary Participation

Participation in this research study is entirely voluntary, that is you may or may not want to participate. Refusal to participate or withdrawal from the study will not result in penalty.

Right to withdrawal

If you choose to participate you may stop at any time. You may also choose not to answer particular questions that are asked in the study. You will also have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). However, if you feel like withdrawing at any time, you are free to do so and this will not affect your learning experience in the classroom or clinical area.

Appendix II

Informed consent form – Quantitative

Participants Form

The purpose of this study has been explained to me and I understand the purpose, the benefits, risks and discomforts and confidentiality of the study, I further understand that taking part in the study is purely voluntary, if I accept to take part in this, I can withdraw at any time without having to give an explanation.

I, _____(Names)

Agree to take part in this study.

Signed _____Date: _____ (Participant)

Participants' signature or thumb print

Signed: _____Date: _____ (Witness)

Signed: _____Date: _____(Researcher)

Appendix III

SELF ADMINISTERED QUESTIONNAIRE

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCES

TITLE: FACTORS INFLUENCING INTEGRATION OF THEORY INTO PRACTICE IN CLINICAL SKILLS ACQUISITION AMONG NURSING STUDENTS

DATE: …… SERIAL NO:…….

INSTRUCTION TO RESPONDENTS

1. Do not WRITE your name on the questionnaire, ONLY serial No. are required exclusively for comparison
2. Put (X) on the most appropriate response to the question
3. Attempt all the questions in all the three sections
4. All information provided will be kept confidential

PART 1: DEMOGRAPHIC DATA

Please fill in the blanks and place an (X**)** next to the correct response.

1. Gender: Female: ---------- Male ----------

2. Your age in years: ----------

3. Level of training: ……

4. Do you have any previous training as an enrolled nurse? Yes/ no

5. If the answer to question 4 is yes, how many years have you worked as a nurse (In- Service Students only)…….....

Part 2: Information on factors influencing integration of theory into practice.

*Please rate your perceptions of theory-practice integration by placing an **(X)** next to the most appropriate response.*

Key: 1 = Strongly Disagree 2 = Disagree 3 = Not sure 4 = Agree 5 = Strongly Agree

	ITEMS	**1**	**2**	**3**	**4**	**5**
	Integration of Theory					
1.	Our prescribed textbooks, literature, and class notes are able to demonstrate the link between theory and clinical practice					
2.	The lecturers are able to demonstrate procedures to be done in clinical area before placement.					
3.	The clinical instructors are able to explain clinical skills in a way that is easy for me to understand and practice skills in the clinical area as I have been taught					
4.	Clinical placements and theoretical sessions are sequenced so that we are able to readily remember, understand and apply in practice what we have learnt in the class.					
5.	After learning about the nursing care plan, I find it easy to apply what I have learned in class to actually practicing patient care.					
6.	What is taught in class (theory) by tutors is in line with what is practiced in the clinical setting (by nurses) and I can readily correlate this.					
7.	What I learn in class is irrelevant to clinical practice.					
8.	In the clinical setting, patients are managed as we are taught in class and ethical principles are upheld in practice.					
9.	There is no confusion or conflict in what we have learnt in class with what we experience in practice.					

	ITEMS	1	2	3	4	5
	Clinical Supervision factors					
10.	Assessments are prepared and given with a particular allocation					
11.	The tests and examinations are structured so that what I have learned and practised in the clinical setting is clearly integrated (e.g. scenarios).					
12.	Practical Assessments are given for specific procedures that have been demonstrated					
13.	Documentation of nursing care by nursing students (e.g. nursing care plans, daily recording of nursing procedures, etc.) is clear and adequately done and checked					
14.	Feedback is given immediately after the demonstration of the procedure					
15.	Observations made during clinical practice are explained including strengths and weaknesses					
16.	Evaluation Manuals are regularly checked by the tutor and clinical instructors					
17	Feedback from the ward manager could easily be considered a learning situation					
18.	In the wards the nursing process is used at all times to care for patients					
19.	As students we are updated with what is happening in the clinical setting.					
20.	We have a preset schedule for demonstrations among ourselves in each clinical placement according to level of training					
21.	Time allocated for theory and clinical practice is balanced, and enables us to practice what we have learned in theory.					
22.	Clinical practice outcomes are also explained to the clinical staff so they know what is expected of us in the clinical setting.					
23.	Clinical supervision and accompaniment is necessary for our clinical practice, to ensure that we are able to integrate what we have learned in class with actual clinical practice					
	Student Related Factors					
24.	We get enough support from the clinical staff in the practice settings; hence we are able to integrate theory and practice.					
25.	Once in the clinical setting, nurse educators do not have control over what we learn and/or practice.					
26	The clinical staff were willing and able to teach and guide students on clinical procedures and patient care, as guided by the expected outcomes.					
27.	The clinical staff has no authority over our clinical practice or learning					
28	The clinical Instructors are always available for consultation					
29.	The nurse tutors have good relations with the clinical staff in our practice settings enabling us to relate freely to either of them in case we need assistance and guidance.					
31.	Peer education is commonly done in the clinical placement					

	ITEMS	1	2	3	4	5
	Student Related Fctors					
32.	We are always engaged in reflection					
33.	We know exactly what is expected of us in the classroom, the expected outcomes are clearly stated in relation to clinical practice.					
	Clinical Environment					
34.	Each student is allocated a specific member of staff for mentorship					
35.	Clinical allocation is according to competencies/ objectives to achieved					
36.	Clinical practice outcomes are clearly defined and explained to us.					
37.	Nurse tutors spend at least an hour/week with us in the clinical setting for supervision, ensuring the application of what we have learned is facilitated.					
38.	The clinical instructor is capable of operationalising the learning goals of this placement					
39.	The staffing levels are always adequate for each shift					
40	The equipment and medical and surgical supplies are usually adequate for practicing					
41	Equipment are always in good working good condition					
42	Each department have specific student cupboard for safe keeping of equipment					

Adapted from Dlamini, 2011 and Saarikoski et al. (2008).

Part 3: Open-ended Questions.

Please fill in the blanks.

44. What are the other factors that you think affect you in the clinical practice in clinical skills acquisition?

.....

…….

……

…….

45. What do you think mostly hinders the integration of theory and practice in your learning?

.....

.....

.....

.....

46. What do you, as a nursing student think should be done by the teaching staff to improve the integration of theory and practice in your learning?

.....

.....

.....

.....

.....

47. What do you think you can do as nursing students to improve the integration of theory and practice in your learning process?

.....

.....

.....

.....

.....

.....

.....

Thank You for your participation and time…

Appendix IV

PARTICIPANTS INFORMATION SHEET – Qualitative data

Factors influencing integration of theory into practice in clinical skills acquisition among nursing students

My names are Maybel S Mpofu; a student of Masters of Science in Nursing at The University of Zambia, is kindly requesting for your participation in the research study mentioned above, because it is important to assess student's experiences in clinical practice. I will initially explain the purpose of the study, the risks or benefits or what is expected of you. Your participation will entirely be voluntary and you will be requested to sign the consent form if you are agreeable. However should you decline to participate you won't have to sign the consent form. .

Procedure

The study will involve signing of the consent form. There will be a face to face focus group discussion with other participants with the researcher as the moderator. The discussion will be recorded using a recorder. Guiding questions will be asked which will be recorded in the audio recorder. The interview will take about 45 to 60 minutes; it may be repeated until the required information is captured.

Confidentiality/anonymity

The data we collect do not contain any personal information about you. The discussion and information collected in this study will be kept strictly confidential.

No one will link the data you provided to the identifying information you supplied (e.g., address, email).

Risks and discomforts

There is no risk involved in this research though part of your time will be spent discussing the mentioned topic.

Benefits

There will be no direct benefit to you by participating in this study, but the information which will be obtained will help the policy makers and the training institution to devise programs to improve the learning experience in the clinical practice. The information obtained will be used to improve the learning outcomes and practical performance and prevent failing in clinical practice.

Voluntary Participation

Participation in this research study is entirely voluntary, that is you may or may not want to participate. Refusal to participate or withdrawal from the study will not result in penalty.

Right to withdrawal

If you choose to participate you may stop at any time. You may also choose not to answer particular questions that are asked in the study. You will also have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). However, if you feel like withdrawing at any time, you are free to do so and this will not affect your learning experience in the classroom or clinical area.

Cost, reimbursement and compensation

Your participation in this study is voluntary. You will receive no money for your participation; however you will have some refreshment after the focus group discussion.

Appendix V

Informed consent form – Qualitative data

Participants Form

You have been asked to participate in a focus group discussion being conducted by Maybel S. Mpofu. The purpose of the focus group discussion is to try and understand factors that affect integration of theory into practice among nursing students. The information learned in the focus groups will be used to improve the clinical practice and formulate guidelines on nursing practice.

- You can choose whether or not to participate in the focus group and stop at any time.
- Although the focus group will be tape recorded, your responses will remain anonymous and no names will be mentioned in the report.
- There are no right or wrong answers to the focus group questions. We want to hear many different viewpoints and would like to hear from everyone.
- We hope you can be honest even when your responses may not be in agreement with the rest of the group.
- In respect for each other, we ask that only one individual speak at a time in the group and that responses made by all participants be kept confidential.

I, _____ _____ (Names)

Agree to take part in this study.

Signed _____Date: _____ (Participant)

Signed: _____Date: _____ (Witness)

Signed_____ Date: _____(Researcher)

Appendix VI

FOCUS GROUP DISCUSSION GUIDE

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCE

TITLE: FACTORS INFLUENCING INTEGRATION OF THEORY INTO PRACTICE IN CLINICAL SKILLS ACQUISITION AMONG NURSING STUDENTS

Composition of Participants: ……..

Number of Participants: …….

Facilitator: ……..

Recorder (s): ……..

Language used during discussion: ……

GUIDE

1. What are the factors that you think affect you in the clinical practice in clinical skills acquisition?
2. What do you think mostly hinders the integration of theory and practice in your learning?
3. What do you, as a nursing student think should be done by the faculty to improve the integration of theory and practice in your learning?
4. What do you think you can do as nursing students to improve the integration of theory and practice in your learning process?