



**College of Health Sciences**

**Research Title: Exploring the Perceived Competency Levels of HIV/AIDS  
Management among Student Nurses from Selected Nursing Education  
Institutions in the EThekweni Municipality**

**DISSERTATION**

**Submitted in partial fulfilment of the requirements for the Degree of Master  
of Nursing (Education) in the School of Nursing and Public Health**

**IN THE FACULTY OF HEALTH SCIENCES**

**BY**

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**DECLARATION**

I Pinky Gugu Buthelezi declare the sole ownership of this work entitled “*EXPLORING THE PERCEIVED COMPETENCY LEVELS OF HIV/AIDS MANAGEMENT AMONG STUDENT NURSES FROM SELECTED NURSING EDUCATION INSTITUTIONS IN THE ETHEKWINI MUNICIPALITY*”, hereby declare that I have given full acknowledgement of all the resources cited in this dissertation. I also declare that this work has never been submitted for any degree and to any education institution.

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*SIGNATURE*

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*DATE*

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*RESEARCH SUPERVISOR*

*(PROF.N.G. MTSHALI)*

.....

*DATE*

## **DEDICATION**

This dissertation is dedicated to all the people that believed in me and supported me in this academic path all the way through. They have been my strong pillars, my source of strength and reasons for me press on to the finishing line:

My husband: Thembinkosi Buthelezi

My parents: My late mom: E. V. Zwane and dad: Mr M.A. Maphanga

My children: Ntombintathu, Xolani, Asanda, Onke, Londiwe, Nkosikhona, Phiwekahle,  
Ntandoyenkosi and Sakhile

My great, loving and supporting sister, friend: Ntombifuthi and Sis Thokoz.

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## **ABSTRACT**

### **Background**

Globally, there is a changing landscape of healthcare, which is more pronounced in developing countries, including South Africa. This is a result of the battle against HIV and AIDS as well as the sudden increase in non-communicable diseases. South Africa has the highest HIV statistics in the region. The rapid rise in HIV infections has resulted in a shift of requirements in the preparation of nurses who are within the community orientated driven nature of health care in South Africa. Nurses are at the forefront of health care service delivery; therefore, the purpose of the study was to explore the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality.

### **Research methodology**

A non-experimental descriptive design based on the positivism paradigm was used. Using a quantitative approach, the questionnaires were used to collect data from 129 participants from two nursing education institutions in the eThekweni Municipality.

Ethical principles were observed throughout the study. Data was analysed using the version 24 SPSS software.

### **Results**

Most HIV and AIDS, 90.7% were females and 54.3% were at 3<sup>rd</sup> year of training. Ninety five point three percent had experience in caring for PLWH. Results showed that 50.4% of the participants had adequate level of knowledge on foundational knowledge level and 76.5% had adequate skills in health provision. In health promotion, 85.7% had adequate level of knowledge whilst for leadership skills, 64% had adequate skills. Results also showed that 83.9% had good skills in handling ethical issues related to HIV and AIDS. In research, 54% reported they had adequate skills. The findings revealed that while clinical exposure was limited and time allocated for teaching and learning of HIV and AIDS care was short, content was extensive. Two themes emerged from open ended questions. They were the need for updates and integration of HIV and AIDS management from first to fourth year of training.

### **Recommendations**

Recommendations are related to the integration of HIV and AIDS content into the curriculum, the ways of strengthening the process of developing the required HIV and AIDS management in the clinical settings and the need for further research.

## **ABBREVIATIONS**

AIDS	Acquired Immune Deficiency Syndrome
ANAC	Association of Nurses in Aids Care
ART	Antiretroviral Treatment
ARV	Antiretroviral
CDC	Centre for Disease Control and Prevention
COPA	Competency Outcomes and Performance Assessment
DHHS	Department of Health and Human Services



DOH	Department of Health
GNCBP	Global Nursing Capacity Building Programme
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HRSA	Health Resources Services Administration
HSRC	Human Sciences Research Council
HST	Health Systems Trust
ICAP	International Centre for AIDS care and treatment programme
ICN	International Council of Nurses
IMAI	Integrated Management of Adolescent and Adult Illnesses
IMCI	Integrated Management of Childhood Illnesses
KZN	KwaZulu Natal
MDR	Multiple Drug Resistant Tuberculosis
MRC	Medical Research Council
MSF	Medecins sans Frontiers
MTSF	Medium Term Strategic Framework
NDOH	National Department of Health
NEPI	Nursing Education Partnership Initiative
NGO	Non -Governmental Organizations
NIMART	Nurse Initiated Management of Antiretroviral Therapy
NSDA	National Service Delivery Agreement
NSP	National Strategic Plan
NQF	National Qualifications Framework
PALSA	Practical Approach to Lung Health in South Africa
PCT	Provider Counselling and Testing

PEPFAR	President`s Emergency Plan for Aids Relief
PHC	Primary Health Care
PLWH	People living with HIV
PMTCT	Prevention of Mother to Child Transmission
PrEP	Pre-Exposure Prophylaxis
PEP	Post exposure prophylaxis
SANAC	South African National Aids Council
SANC	South African Nursing Council
SAQA	South African Qualifications Act
SDG`s	Strategic Developmental Goals
STI	Sexually Transmitted Infections
STRETCH	Streamlining Tasks and Roles to Expand Treatment and Care for HIV
TB	Tuberculosis
UNAIDS	United Nations Programme on HIV and AIDS
UNICEF	United Nations International Children`s` Emergency Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
XDR	Extensive Drug Resistant Tuberculosis

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
<b>CHAPTER ONE .....</b>	<b>14</b>
<b>BACKGROUND TO THE STUDY .....</b>	<b>14</b>
1.1 Introduction.....	14
1.2 Background.....	15

1.3 Problem statement.....	18
1.4 Aim of the study.....	19
1.5 Research objectives.....	19
1.6 Research questions.....	20
1.7 Significance of the study.....	20
1.8 Definition of operational terms .....	21
1.9 Theoretical framework.....	23
1.10 Outline of the dissertation.....	27
1.11 Conclusion .....	28
<b>CHAPTER TWO .....</b>	<b>29</b>
<b>LITERATURE REVIEW .....</b>	<b>29</b>
2.1 Introduction.....	29
2.2 Extent of HIV epidemic .....	29
2.3 Health care professional shortage .....	30
2.4 Need to transform the nursing education curriculum .....	31
2.5 Students' knowledge of HIV AND AIDS and its management .....	33
2.6 Student nurses` skills /competences in providing care to people living with HIV .....	36
2.7 Student nurses` attitude towards HIV and people living with HIV .....	38
2.8 Educational preparation of student nurses to provide care to HIV infected persons.....	40
2.9 Conclusion .....	42
<b>CHAPTER THREE .....</b>	<b>43</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>43</b>
3.1. Introduction.....	43
3.2 Research paradigm and approach .....	43
3.3 Research design .....	44
3.4 Research settings.....	44
3.5 Study population .....	44
3.6 Sampling and Sampling technique.....	45
3.7 Inclusion and exclusion.....	45
3.8 Calculating sample size.....	46
3.9 Data collection instrument .....	46
3.10 Validity and reliability .....	47

3.10.1 Validity.....	47
3.10.2 Reliability .....	49
3.11 Ethical considerations .....	49
3.12 Data collection process .....	50
3.13 Data analysis .....	50
3.14 Data management.....	51
3.15 Dissemination of research findings.....	51
3.16. Conclusion .....	51
<b>CHAPTER FOUR.....</b>	<b>52</b>
<b>RESULTS PRESENTATION.....</b>	<b>52</b>
4.1 Introduction.....	52
4.2 Sample realization.....	53
4.3 Socio demographics .....	53
4.4 Experience/practice in managing clients /people with HIV and AIDS. ....	57
4.5. Source of knowledge about HIV and AIDS .....	57
4.6 HIV and AIDS management competences .....	58
4.6.1 Competencies in foundational knowledge on HIV and AIDS management.....	61
4.6.2 Competencies in health care provision skills .....	66
4.6.3 Competencies in Health promotion and health education.....	70
4.6.4 Competencies in leadership and management in HIV and AIDS .....	73
4.6.5 Competencies in ethical issues in HIV and AIDS.....	76
4.6.6 Competencies in Research in HIV and AIDS .....	78
4.7 Personal and Professional Development in HIV and AIDS management.....	80
4.8 Student nurses` views, comments and concerns about their preparation on HIV and AIDS in the nursing programme. ....	82
4.8.1 Themes and subthemes that emerged from data collected from open-ended questions ..	83
4.9 Conclusion .....	88
<b>CHAPTER FIVE .....</b>	<b>89</b>
<b>DISCUSSION OF THE FINDINGS, LIMITATIONS AND RECOMMENDATIONS .....</b>	<b>89</b>
5.1 Introduction.....	89
5.2 Socio Demographics .....	90
5.2.1 Participants experience in managing clients /people with HIV and AIDS .....	92
5.2.2 Sources of Knowledge about HIV and AIDS .....	92

5.3 HIV and AIDS Management Competencies .....	94
5.3.1 Foundational knowledge competencies .....	95
5.3.2 Competencies in health care provision skills .....	102
5.3.3 Competencies in Health promotion and health education.....	104
5.3.4 Competencies in leadership and management in HIV and AIDS .....	105
5.3.5 Competencies in ethical issues in HIV and AIDS.....	107
5.3.6 Competencies in Research in HIV and AIDS .....	108
5.3.7 Personal and Professional Development in HIV and AIDS management .....	109
5.4 Views and comments of the participants regarding their educational preparation .....	111
5.4.1 Need for updates and workshops .....	111
5.4. 2: Integrate HIV care from 1-4 <sup>th</sup> year.....	112
5.5 Limitations .....	113
5.6 Recommendations.....	113
5.7 Conclusion .....	116
6. References .....	116
List of annexures .....	124
Annexure 1: Information sheet and consent form.....	124
ANNEXURE 2: Data Collection Questionnaire.....	128
Annexure :3 APPLICATION FOR PERMISSION LETTERS .....	134
Annexure 4: PERMISSION LETTERS .....	139
List of figures .....	145
List of tables.....	145

## **CHAPTER ONE**

### **BACKGROUND TO THE STUDY**

#### **1.1 Introduction**

Globally, there is a changing landscape of healthcare, which is more pronounced in developing countries, including South Africa, as a result of the battle against HIV and AIDS, as well as the sudden increase in non-communicable diseases as evidenced by (Huller 2016,2) and Gilbert (2013,55). The rapid rise in HIV infections has resulted in a shift of requirements in the preparation of nurses who are within the community orientated driven nature of health care in South Africa (SA), and are at the forefront of health care service delivery. International organizations such as World Health Organization (WHO, 2013 and International Council of Nurses (ICN, 2012) provide directives and strategies regarding the preparation of nurses to function in such dynamic health care systems. One particular strategy that has been noted within these global directives is a transformation of the curricula of health care professionals especially that of nursing; which should be directed towards a relevant curriculum that is aligned to the health care needs of the country (WHO 2013,11 and ICN 2012,46). Naledi et al (2011, 20) concurs with the aforesaid global directives regarding the need to transform preparation of professional nurses for better service provision especially Human Immunodeficiency Virus (HIV) care.

In the South African context, reforms in the education and training of nurses has resulted in a change of the curricula for nurses, towards a competency based curricula aligned to the health care needs of the country (Mbambo and Bimerew 2012, 2). All nursing graduates are expected to exit with HIV and AIDS management related competencies acquired through nursing curricula that are integrating HIV and AIDS management (Modeste and Adejumo 2014, 106; Sehume and Zungu 2012, 19 and Lekhuleni et al 2015, 54).

This introductory chapter introduces the research study. It presents the background knowledge of the study, problem statement, research objectives, research questions, significance of the study, operational definitions and the conceptual framework that guide this study.

## 1.2 Background

According to the UNAIDS (2015, 1) estimations reported 36.7 million (34.0- million39.8 million people living with HIV (PLWH) globally. New infections are estimated to be 46%. The report adds that about 78 million (69.5 million – 87.6 million) have been infected as from the beginning of this HIV epidemic (UNAIDS 2015, 2). This makes HIV not only a global concern but also a reality which needs to be aggressively addressed.

The study done by Spies, Gray, Opollo, and Mbalinda (2016, 312) as well as Modeste and Adejumo (2014, 105) confirmed that according to WHO, globally two million people are diagnosed with HIV every year. Modeste and Adejumo (2014, 105), assert that people living with HIV (PLWH) are increasing in numbers. The new infections and the longer lifespan of the people benefitting from the use of antiretroviral therapy contribute to rise in statistics of PLWH.

Another concern reported by the UNAIDS is that HIV prevalence amongst sex workers globally is 10-20 times higher than in the general population. (The South African Sex National Worker Plan, 2016-2019, 13; WHO, 2013, UNICEF, 2013 and UNAIDS, 2013: 18). In the South African context, high HIV prevalence amongst sex workers was reported by South African National Aids Council (SANAC) in the three big cities, Johannesburg, Cape Town and Durban. Sex workers in Durban one city in KZN province were estimated at 53.5% in 2014.

Another vulnerable population are the drug injection users (WHO, 2013; UNICEF, 2013 and UNAIDS 2013, 2 and18). The habit carries a high risk of HIV transmission. High HIV infection rates demand that preparation of professional nurses be relevant to equip them with HIV competencies. This vulnerable population shares and reuses injection needles and syringes which challenges and defeats efforts to contain the HIV epidemic.

According to the United Nations Programme on HIV and AIDS (UNAIDS) global report, the Eastern and the Southern Africa are leading with about 19 million people living with HIV and more than 50% are women living with HIV (UNAIDS 2015, 2). According to the HSRC report, HIV prevalence was as follows in the provinces, Western Cape 5%, Eastern Cape 11.6%, Free State 14%, Mpumalanga province 14.10%, KZN 16.90%, Gauteng 12.40%, and Limpopo 9.20%.

Northern Cape 7.40% and North West 13% in 2015 (Human Sciences Research Council (HSRC) 2012, 36).

The UNAIDS (2015, 1) indicate that the global estimation of people living with HIV is 36.7 million. In South Africa, there is an estimation of 6.1 million people living with HIV, which is regarded as being the highest in the world. Modeste (2015, 106) concurs by saying that there are about 370 000 new infections each year in South Africa. Mbambo and Bimerew (2012, 1) documented that such high levels of infections lead to more than 70 000 infected babies being born each year with HIV contributing to the incidence of maternal and child mortalities in South Africa, Mbambo and Bimerew (2012, 12).

KwaZulu Natal has the highest HIV infection rates both in South Africa and the whole world (Gibbs, 2016, 1) and Singh et al (2013, 2065). High prevalence of HIV has an impact on the health care system, the health care professional's education and training, more especially training of the professional nurses. Transformation in the preparation of professional nurses will strengthen the healthcare system by producing competent nurses in holistic HIV management.

Landscaping of the health care needs due to the burden of diseases including the HIV pandemic has led to recommendations by the organizations such as (WHO 2013, 22) and ICN (2012) including the South African Qualifications Act (SAQA) Act no.58 of 1995 to transform preparation of nurses. The WHO in 2008, published Task-Shifting Global Recommendations and Guidelines, endorsing nurses' practices in HIV care and treatment tasks such as nurse – initiated and management antiretroviral treatment (NIMART). That includes preparing patients for antiretroviral treatment (ART), determining medical eligibility, prescribing first- line ART, clinical monitoring and managing the side effects Smith et al (2016,323).

“Task shifting is defined by the WHO as the strategy of shifting work of one cadre of healthcare worker to another, often less trained cadre (Spies et al 2016, 312). This sharing of tasks among health care professionals, talks to revision of practice, that has to do with task shifting and new strategies that focus on community or primary health based approach to health care as opposed to



hospital based care. (Gilbert 2013, 55). On the other hand Lekhuleni et al (2015, 53) explains that task sharing includes an extended role for nurses whereby they lead in tasks that were routinely performed by doctors in HIV care such as prescribing, dispensing ARV's and monitoring patients on ART.

This sharing of tasks among health care professionals is in response to the National Nursing Summit new resolutions in health care that were agreed upon in 2011. The South African Nursing Council (SANC), a regulatory body of nursing practice and standards, indicated that it is vital to prepare nurse graduates that are going to be competent and have the expertise to manage the countries burden of disease as indicated in the (The Strategic Plan for Nurse Education, Training and Practice (SPNETP) 2012/13 -2016/17, 14).

The transformation of the education and training of nurses is also a national directive in the form of Primary Health Care (PHC) re-engineering. Re- engineering of the workforce is also one of the eight strategic priorities documented by the Department of Health, South Africa. Similarly, the South African Human Resources for Health Strategy (SAHRH) responded to the 2011 National Nursing Summit new resolutions in health care system delivery of moving towards PHC engineering health care provision approach. PHC focuses on providing health care that aims at preventing illness, and promoting health as the first level of health care provision. PHC approach focuses on bringing health care closer to people such as homes, work and community. Professional nurses are to be prepared to respond to the changing needs of the population. Their training and education must be relevant to the needs in terms of their competence, over and above the needed quantity and quality (WHO, 2013, 11); Matsoso and Strachan 2011, 52). Education and training changes will also support the Sustainable Development Goals (SDGs) targets as well. In the context such as South Africa in particular KZN, curriculum transformation calls for integration of HIV nursing competencies into the basic education and training of professional nurses. Expansion of HIV services to pre-service education, policy and regulation on the Sub-Saharan countries was further recommended by Zuber et al (2014, 526); (Modeste and Adejumo 2014, 107; Sehume and Zungu 2012, 19; Mbambo and Bimerew 2012, 9; and Spach 2016, 262). Pre-service refers to nurses on training before they are employed in healthcare settings.

In the fight against HIV epidemic, fortunately the Nursing Education Partnership Initiative (NEPI) the sub- project of the Presidents` Emergency Plan for Aids Relief (PEPFAR) was launched in 2010. The purpose is to assist in strengthening the provision of competent of nurses in the Sub Saharan countries. South Africa is one of the five countries that are supported in this project, (Zingernagel et al 2014, 3 and Goosby and Zingernagel 2014, 2). The focus is on upgrading the nursing education institutions infrastructure such as libraries, clinical skills laboratories, and information technology facilities and funding academic development of nurse educators. This is done in preparation for the implementation of the new qualifications so that it becomes possible to prepare nurses who can meet the needs of the people. It is therefore important for this study to be conducted, so as identify how nurses are prepared for this comprehensive task, are there any gaps in their education and training that may need to be addressed. The focus is in the nurses` competencies in HIV management.

### **1.3 Problem statement**

South Africa has the highest HIV prevalence globally. KZN Province in South Africa has the highest HIV infection rates both in South Africa and globally (Gibbs 2016, 1 and Singh et al 2013, 2065). A high HIV infection together with the burden of diseases has resulted in landscaping of the health care delivery system (Sehume and Zungu 2012, 13). Health care professionals, especially nurses who are in majority among other health care workers, are expected to provide HIV care to people living with HIV (Smith, Odera, Chege, Muigai, Patnaik, Strasser, Howard, Yu-Shears, and Dhorn 2016, 323; Relf 2011, 211 and, Modeste and Adejumo 2014, 106). Recommendations by various authors indicate the need for integration of HIV competencies into the pre-service level of training (Modeste and Adejumo 2014, 107; Sehume and Zungu 2012, 19; Mbambo and Bimerew 2012, 9; Spach 2016, 262 and Zuber 2014, 530).

According to Modeste and Adejumo (2014, 112; Lekhuleni, Kgole and Mbombi 2015, 60) research findings clearly indicate deficiencies in HIV competencies such as knowledge, skills and attitudes in the pre-service training of nurses. Another problem identified in literature was that NIMART training and practice, even though it is effective in expanding access to ARV`s, is offered to already qualified nurses only (Lekhuleni et al 2015, 55). The South African Nursing

Council Act 33 of 2005, made a provision of qualified professional nurses, midwives and enrolled nurses to practice NIMART.

Several researchers indicate the combination of the increasing burden of diseases including HIV and AIDS and the critical shortage of health care professionals (Zuber 2014, 52; Spies, Gray, Opollo, and Mbalinda 2016, 313; Smith et al 2016, 323 and Georgeu, Colvin, Lewin, Bachmann, Uebel, Zwarenstein, Draper and Bateman 2012, 2). This is a serious situation that is detrimental to the provision of safe quality health care that people deserve. Health care professionals are one of the six essential building blocks in the health care delivery system. Their shortage has a negative impact in health care provision (WHO 2013, 21 and the SPNETP 2012/13 – 2016/17, 8). In the South African context, the National Department of Health Strategic plan aims at reducing new HIV infections by 50% (HSRC,2016), which may be challenged by the shortage of nurses and underprepared nurses in HIV and AIDS management.

Based on literature reports on high HIV prevalence, shortage of health care professionals especially nurses and the limited skills in HIV management, the researcher was interested to investigate the preparation of professional nurses in HIV related competencies. The study also aimed at exploring the perceived HIV competencies of student nurses in the third and fourth year of their training in KwaZulu Natal at eThekwin Municipality. This talks to the institutional curriculum, how relevant it is and is it of quality in effectively preparing nurses with the HIV care competencies.

#### **1.4 Aim of the study**

This study aimed to explore the perceived level of clinical competencies related to HIV and AIDS management among the pre-service nursing students from selected nursing education institution in the eThekwin Municipality.

#### **1.5 Research objectives**

The research objectives were to:

- a) Describe the student nurses' perceived extent of knowledge possessed that is related to the HIV and AIDS management.
- b) Describe the student nurses perceived level of psychomotor competencies possessed that are related to the HIV and AIDS.
- c) Describe the student nurses' perceived level competence in terms of attitudes related to the management of HIV and AIDS.
- d) Explore the relationship between the students' demographics and levels of competence in HIV and AIDS management.
- e) Explore the views of student nurses regarding their educational preparation in the management of HIV and AIDS.

## **1.6 Research questions**

The research questions were:

- a) What is the perceived extent of knowledge possessed by the student nurses that is related to the HIV and AIDS management?
- b) What is the perceived level of psychomotor competencies possessed by the student nurses that is related to the HIV and AIDS?
- c) What is the perceived level of competence by the student nurses in terms of possessed attitudes related to management of HIV and AIDS?
- d) What is the relationship between the student nurses' demographics and their levels of competence in HIV and AIDS management?
- e) How do student nurses view their educational preparation in management of HIV and AIDS?

## **1.7 Significance of the study**

Integration of HIV care in the form of NIMART into the nursing education and training has been recommended and implemented in some nursing education institutions. It is therefore essential to explore its effects and limitations. The benefits and challenges identified will guide plans for the nursing education and training of professional nurses.

Findings of this study will add empirical evidence that will assist nursing education policy makers and curriculum developers to plan on how to bridge the identified gaps in nurses' training and thus improve competencies and practice of the nurses in managing HIV. Nurse educators will refer to the study findings and enrich content for teaching on management of HIV and AIDS. Research findings and recommendations from this study may also provide a platform for further research studies relating to HIV and AIDS health care provision.

Hopefully the quality care that the professional nurses will offer to PLWH will contribute to a success in meeting the 90, 90, 90 UNAIDS 2020 target. That will in turn contribute to achieving the global aim of ending the AIDS pandemic by 2030.

## **1.8 Definition of operational terms**

### **Competency**

Competency refers to a skill that you need in a job or for a task (Hornby 2015, 298 and Knebel et al 2008). According to Park and Kwang (2013), competency is the blend of skills, abilities, and knowledge needed to perform a specific task. They add that it is the ability for a person to successfully perform the job.

**Level** refers to measuring or gauging how high, moderate or low something is being rated in terms of performance (Hornby 2015, 868). In this study context competency levels meant possession of and the appropriate use of relevant knowledge, appropriate skills such as critical thinking, problem solving and decision making in performing tasks in management of HIV and AIDS.

### **Clinical settings**

Refers to the environment where the specific tasks are performed. Clinical settings include all areas where health care is rendered such as the hospital, health care centre and or clinic (Uys and

Gwele 2005, 7, 9). “It is continuum of services to promote health and provide care to individuals and groups used to teach learners” (SANC Act 2005, 2). In this study context, clinical settings meant environment where student nurses are placed to practice what has been learnt e.g. the wards, clinics, communities and clinical skills laboratories.

### **Pre-service**

Rajan (2013, 1) defines pre-service as preparation of students for the future. In this study context, pre-service meant the period before employment of the student nurses. They are still on training to become qualified professional nurses in future. In this study context, pre-service will mean the preparatory period of the future professional nurses on HIV and AIDS management.

### **Curriculum**

“Curriculum refers to planned learning experiences that the educational institution intends to provide for its learners” (Gwele 2005, 1). According to Bevis and Watson (2000, 1) curriculum involves transactions and interactions between teachers and learners during the teaching and learning process. In this study context curriculum referred to a prepared overall guide and plan of the teaching and learning process on HIV and AIDS care to enhance clinical competence of the professional nurses.

### **Nursing education institution**

“It is a founded establishment or organization, consisting of a building, or complex of buildings and its associated resources for the specific purpose of offering nursing education and training programmes” (SANC Nursing Act, 2005). In the context of this study the nursing education institution referred to the two selected campuses that are providing four-year diploma nursing education and training in the eThekweni municipality.

### **Student Nurse**

The SANC Act, 2005 defines the student nurse as a person registered with the Council as a learner in terms of section 33 of the Nursing Act. In the context of this study the student nurse referred to the third and fourth year student nurses who are registered with the SANC as student nurses in the four-year diploma programme. Those students were participants in this study.

## **HIV and AIDS Clinical management**

According to the Global Health, Clinical management of HIV and AIDS includes the preventive, promotive, curative and rehabilitative components of HIV and AIDS care in the clinical settings. In the context of this study clinical management of HIV and AIDS meant the nurse`s ability to diagnose HIV, opportunistic infections, promote healthy living, prevent and treat opportunistic infections to PLWH, identify people eligible for ARV`s, prescribe, commence them and monitor their response to treatment at clinics, health care centres and hospitals.

## **EThekweni Municipality**

The Business dictionary defines the municipality as an elected government body that has a corporate status and limited self-governance rights and serving a specific political unit like a city or town. In the context of this study this administrative political division was the city of Durban and the surroundings. The two Nursing Education Institutions where data was collected were in the eThekweni Municipality.

## **1.9 Theoretical framework**

Polit and Beck (2012, 128) define the framework as the conceptual underpinning of the study. The framework guides and explains the scientific study of interest to the reader. The researcher therefore used the competency outcomes and performance assessment (COPA) model from the Lenburg`s 1999, model to underpin this study. This was combined with the framework Modeste and Adejumo used to identify HIV and AIDS-related competencies for the newly qualified professional nurses in South Africa. The latter was based on the COPA model in 2014.

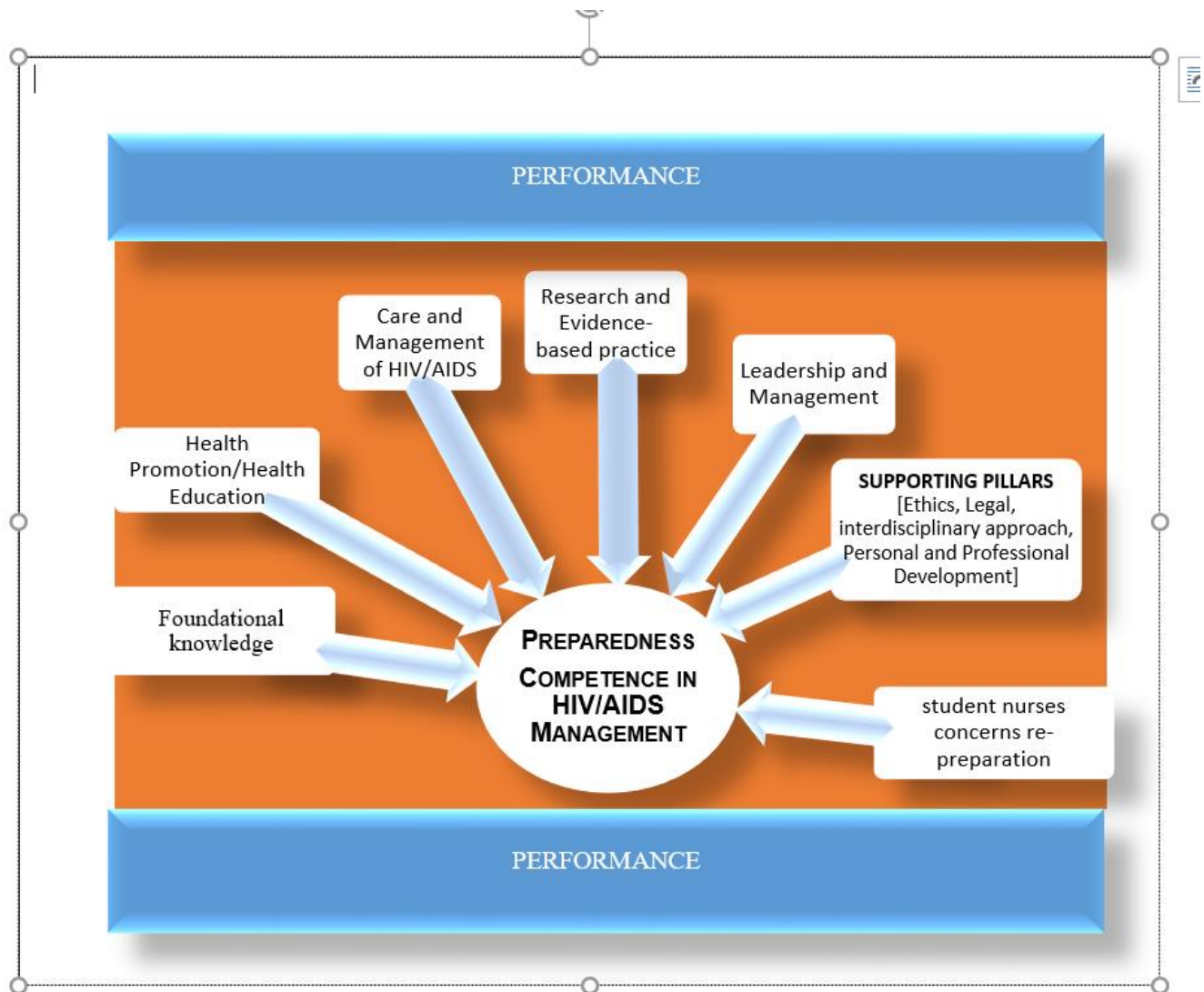
According to the SPFNETP (2012/13-2016/17,9) for the South African health care system to manage its burden of disease despite the critical shortage of healthcare professionals, there is a need to prepare nurses that are competent and possess the necessary expertise. Nurses are to be prepared for the actual practice in the clinical settings to meet the diverse health care needs of the people.

The conceptual framework guiding this study is based on a COPA Model. This model was adapted to be in line with the aim of this study (See Figure 1). Figure 1 is display HIV and AIDS

clinical competencies organised according to the COPA model and the supporting pillars were adopted from Modeste and Adejumo (2014).

The COPA model is designed to promote and evaluate performance to ensure achievement of competency. It stresses the focus of preparing graduates with the expected outcomes in mind from the beginning of their education and training (Lenburg, 1999). This model is made up of eight core competency skills that the graduate needs to learn and can practice. In this study, the core competencies adopted from the COPA model are organized into three main concepts; foundational knowledge competence, performance and supporting pillars. In this study, the conceptual framework has four main components and some of these main concepts are formed by sub concepts. The four main concepts are the foundational knowledge competence, performance (care provision, evidence-based practice, leadership and management), supporting pillars (ethics, legal, interdisciplinary approach, personal and professional development) and student nurses` concerns regarding their preparation on HIV and AIDS management.





**Figure 1: Conceptual framework on Student Nurses perceived level of clinical competence in HIV and AIDS management. (Adapted from Lenburg et al 1999 ; Modeste and Adejumo 2014)**

They eight core competencies are the following:

*Provision of safe and holistic care* which includes assessment and intervention skills. That include the nurse's ability to take the relevant history from the patient or relative, examine the patient from head to toe, decide on the correct nursing diagnosis and manage accordingly.

*Ethics and professionalism skills.* Includes being a good listener as patients' needs are presented, interpreting and responding as expected. Nurse's ability to document in a professional way and consult, report to other team members where necessary e.g. hospital or the doctor. Communication also encompasses the nurse's skill in accessing the needed information from textbooks, and electronically in relation to his/her patient needs.

*Critical thinking skills.* Making decisions based on scientific enquiry as opposed to assumptions when solving problems, evaluate arguments made, and using empirical evidence and relevant knowledge to improve patient care (Quinn 1995, 50).

*Human Caring /Relationship skills.* Being able to relate with and treat patients with dignity without violating any of their rights e.g. privacy, confidentiality and protecting the patient from any emotional harm.

*Health education/ health promotion skills.* The nurse should be able to impart knowledge to patients, relatives, other healthcare professionals and demonstrate to them when a need arises.

*Management skills.* For health care to be successfully offered, the nurse should plan what must be done, which human and material resources will be needed, how the latter should be used. The professional nurse does not only organize the resources but also coordinates work activities for smooth performance and team building (Quinn, 1995, 306).

*Leadership skills.* The nurse should use various leadership styles that are suitable to the work situations and be a good role model for juniors and colleagues. Need also to stand for what he/she believes in without offending or violating rights of others (Quinn 1995, 306).

*Knowledge and integration skills.* Competency in the nurse will be gauged by having up to date knowledge from various sources and using it to guide his/her nursing practice.

In addition to the COPA competencies, the researcher also used those identified by Modeste and Adejumo that are supporting pillars which are:

*The interdisciplinary approach to health care service delivery.* Preparation of student nurses should enable them to fit into the multidisciplinary health care team. They need to understand their roles and responsibilities as members as well as understand and respect roles and

expectations of other health care team members. This includes health care referrals, competence in involving the community, patient, relatives and doing follow ups to achieve comprehensive health care of PLWH.

*Personal and professional development.* This competency aspect is on the nurse`s capability to recognize, plan and implement activities to enhance his growth as a person and as a professional. Competencies include nurse`s ability to care for self to prevent HIV infection and continuously participate in professional endeavours to keep updated on the latest evidence based trends in HIV and AIDS management.

### **1.10 Outline of the dissertation**

This dissertation is organised into the following five chapters.

**Chapter one:** This chapter introduces the whole research study. It starts with the background information to the study, problem statement, research objectives, significance of the study, operational definitions and the conceptual framework that guides the study.

**Chapter two:** This chapter presents the reviewed literature related to educational preparation of student nurses, the student nurses` knowledge, skills and attitudes in HIV and AIDS management. It also presents HIV and AIDS global and local statistics, shortage of health care professionals and need to transform the nursing education curriculum.

**Chapter three:** This chapter deals with the research methodology, outlining the research approach, design, research setting, the study population, sampling and the data collection instrument that was used and the validity and reliability of the questionnaire. The chapter also present ethical considerations, the process of data collection, methods used for data analysis and data management.

**Chapter four:** This chapter focuses on findings from this study, which include the sample realisation and the demographic data. The chapter also present findings on the HIV and AIDS management competencies, which are on the foundational knowledge, health care provision,

health education/ promotion, leadership, ethical issues, research as well as professional and personal development.

**Chapter five:** This chapter discusses findings and their interpretation in relation to relevant literature on previous studies. The chapter also presents limitations and recommendations of the study.

### **1.11 Conclusion**

The aim of the study was to explore the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality. This chapter outlined background of the study, identified problems and purpose of the study. Research objectives, questions, significance of the study, the operational definitions and the theoretical framework were also explained. The next chapter will present literature with respect to student nurses` knowledge, skills and attitudes in HIV and AIDS management and educational preparation of student nurses in HIV and AIDS management.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

According to Grove, Burns and Gray (2013, 7) Literature review is an organized written presentation of what you find when you review the literature. It is done to generate an understanding of what is known about a situation, phenomenon, or problem and to identify knowledge gaps that may exist in the scientific study (Grove, Burns and Gray 2013, 40). Information was searched through the databases like Ebscohost, Google scholar, Pub Med, Science Direct, South African Institute of Race, Research Gate, Medline, Health Source, Research Space and Wiley on line.

The key search concepts or terms used included HIV and AIDS management competencies, competency levels of student nurses in HIV management, student nurses and HIV and AIDS care, knowledge, skills and attitudes on HIV and AIDS, HIV curriculum for nurses, competency oriented training, models. The chapter also covers gaps in the nursing curricula, training of nurses, teaching strategies used, as well as the competency models of care by different authors.

#### **2.2 Extent of HIV epidemic**

The global rise in HIV and AIDS statistics globally and locally has led to a changing landscape of healthcare. An estimation of 36.7 million people living with HIV (PLWH) globally in 2016 was reported (UNAIDS 2017). This is more intense in developing African countries including South Africa. According to (UNAIDS 2017) statistics, in the East and Southern Africa HIV prevalence was 19.4 million in 2016, which is 46% of the global total. (UNAIDS 2017) adds that 59% of women and girls were infected with HIV and AIDS in the aforesaid African countries.

South Africa has a high HIV prevalence, estimated at 6.1 million (Modeste 2015, 106). New infections were estimated at 370 000 in South Africa and 46% (1.8 million) in 2016 globally.

The reported high statistics make HIV and AIDS a concern that needs to be successfully fought against (Mbombo and Bimerew 2012, 3).

According to Singh, Parboosing, Manasa, Moodley and Oliviera 2013, 2065 and Gibbs 2016, 1), KwaZulu Natal (KZN), one province in South Africa is leading in high HIV prevalence. The population that is reported to be vulnerable in South Africa are women as more than 50% are living with HIV (UNAIDS, 2015, 2). The HSRC report also confirmed that in 2015, KZN was leading with 16.9% women living with HIV, with more than 70 000 infected babies born each year (Mbombo and Bimerew 2012, 12).

Sex workers and drug users are another vulnerable key population group that contribute to the rise in HIV statistics (The South African Sex National Worker plan 2016-2019, 13 and WHO, 2013). According to (UNAIDS 2017), 44% of new infections were reported among the aforesaid key population group in 2015. The rise in numbers defeats efforts to end the epidemic by 2030.

### **2.3 Health care professional shortage**

The healthcare demands are from the disease burdens that are ever changing. Nurses, midwives and doctors are one of the essential components of the healthcare system (WHO, 2013). Nurses and midwives are in majority found providing health care at different health care settings: the acute, primary health, rehabilitative and community care settings (Adejumo 2015 and Ellison, Verani and McCarthy 2015, 13; Biswas, Adikari, Ray and Kundu 2015, 15 and Zeren, Ahci and Ay 2012, e75).

It is with great concern that literature reports on the rising healthcare need demands on the healthcare system that is coupled by the global shortage of the health care professionals. The recommended minimum standard of staffing is 2.3 health care professionals per 1 000 population as set by the WHO. The World Health Organization (2013, 21) confirmed that there were 57 countries with a critical shortage of health care professionals, 36 of those are in Africa. Gilbert (2013, 57) cited the WHO 2006 report, that estimated 4.3 million shortage of health care professionals globally. That means there are people who may not access health care they deserve because of human resource shortage.

## **2.4 Need to transform the nursing education curriculum**

The rising healthcare demands are from HIV and AIDS epidemic and the result of the sudden increase in non-communicable diseases as highlighted by (Hullur 2016, 2). Demands in the healthcare services are also from factors such as shift to evidence-based practice, and advances in Nursing, Medical and information technology (Blaauw, Ditlopo and Rispel 2014, 2). Nurses are at the forefront of healthcare system. They are also in majority as compared to other health care professionals (Blaauw, Ditlopo and Rispel 2014, 1; Modeste and Adejumo 2015 and Ellison, Verani and McCarthy 2015, 13).

The World Health Organization (WHO) in 2008 published Task-Shifting Global Recommendations and Guidelines, endorsing nurses' practices in HIV and AIDS care and treatment tasks such as nurse – initiated and management antiretroviral treatment (NIMART). Task shifting was one of the global initiatives to assist in meeting community needs despite health care professional shortage. That included preparing patients for antiretroviral treatment (ART). They also determine medical eligibility, prescribing first- line ART, clinical monitoring and managing the side effects (Smith, Odera, Chege, Muigai, Patnaik, Strasser, Howard, Yu-Shears, and Dhorn 2016,323).

“Task shifting is defined by WHO as the strategy of shifting work from one cadre of healthcare worker to another, often less trained cadre” (Spies, Gray, Opollo, and Mbalinda, S 2016, 313) It is also defined as “delegating tasks to existing new cadres with either less training or narrowly tailored training” (Fulton et al 2011,2).

Changes in the healthcare system have resulted in a shift in the requirements in the preparation of nurses. The nursing education system is responsible for the education and training of nurses. The South African Nursing Council (SANC) is the professional organization that is responsible for overseeing nurses' education and training. According to the Nursing Act No.50 of 1978 and No.33 of 2005, SANC is there to protect the public by promoting and maintaining standards of nursing care, including the preparation of nurses. That is done to ensure that people receive care that is safe and of quality, with no patients' rights violation whatsoever (WHO 2009, 22).

During the National Nursing Summit in April 2011, nursing education and training was identified as one of the challenges in the healthcare system. South Africa had to achieve “A long and healthy life for all South Africans” as one of the focus areas of the Medium Term Strategic framework (MTSF) for 2009) as cited in the (NSPNEP 2012/13- 2016- 17, 4). Nurses have a vital role to play for the country to achieve the above as the reconstruction and revitalization of the nursing profession was to involve PHC re-engineering. Nurses mostly run PHC institutions. The South African Nursing Council (SANC) created the Nursing Act no.33 of 2005 legislative framework to review the nurse`s scopes of practice so that their practice is able to meet people`s needs (NSDNEP 2012/13-2016/1/, 14).

The WHO (2013, 13) and the International Council of Nurses (ICN) made recommendations towards transformation of the education and training of health care professionals including nurses. It stressed the need for basic nursing education and training curriculum be designed to meet needs of the people. This is supporting the move to PHC engineering, so that healthcare provision shifts from being hospital-based to the community. PHC was identified to be poorly developed and implemented (Naledi, Barron and Schneider 2011, 18). Preparation of future registered nurses must be in line with PHC re-engineering to cater effectively for the comprehensive health needs of the people of South Africa.

Various authors also supported transformation of nursing education and training (Relf 2016, 204; Portillo 2016, 215; Mc Gee, Relf and Harmon 2016, 240). Modeste and Adejumo (2015) presented a paper at the international convention on efforts to strengthen education and training of nurses. Authors recommended Inclusion of NIMART and other HIV care related aspects of care in the basic nursing education curriculum.

“NIMART needs to be a specific focus in the curriculum to ensure that nurses completing the program have the knowledge and skills needed to comprehensively manage people with HIV and AIDS” (Lekhuleni, Kgole and Mbombi 2015, 54). According to Modeste (2015,49) Integration of HIV care into the curriculum leads to development and promotion of reasoning skills, integration of theory to practice which comes from extensive and deeper learning.

Education and training of nurses need to be relevant in terms of HIV and AIDS care competences. The aim is to expand preparation and the role of professional nurses who will be



competent to respond to the changing needs of the population. Integration of HIV and AIDS management into basic nursing education curriculum was also supported by the National Strategic Plan for Nurse Education and Practice (NSPNEP 2012/13-2016/17, 9).

## **2.5 Students' knowledge of HIV and AIDS and its management**

Suominen, Laakkonen, Lioznov, Polukova, Nikolaenko, Lipiainen, Valimaki and Kylma (2015, 2), conducted a study with the aim to describe knowledge of Russian nursing students regarding HIV and AIDS and their attitude in caring for PLWH. Study findings were student nurses' level of knowledge competence was insufficient in aspects such as HIV transmission and protection against HIV. Surprisingly, 15% reported they thought all homosexuals were HIV positive (Suominen et al 2015, 4). Researchers recommended that nursing education needs to provide sufficient and up to date knowledge on HIV to meet diverse community needs.

Similarly, Ouzouni and Nakakis (2012, 139) conducted a study to explore HIV and AIDS knowledge, attitudes and behaviours of student nurses. Findings of the study were like other authors; students' knowledge was insufficient and inaccurate. They had myths on the mode of transmission such as possibility of contracting HIV, 39.8% through mosquitoes, 38% toilet seats and 1.8% through hugging an HIV infected person (Ouzouni and Nakakis 2012, 147). Sehume, Zungu and Hoque (2012, 1) conducted a study aiming to assess the Turkish student nurses' knowledge and attitude towards people with HIV and AIDS, findings aligned with other authors, students reported insufficient knowledge especially on mode of transmission, policies, and legislation. This study finding is in line with results in the study conducted by Nazik, Arslan, Ozdemir and Apay (2012, 434) to identify student nurses' attitudes towards patients living with HIV and AIDS. Findings indicated students had insufficient knowledge on HIV and AIDS that lead to reluctance to nurse PLWH. Ouzouni and Nakakis as well as Nazik et al endorsed the need to include HIV care in the curriculum. Sehume, Zungu and Hoque (2012, 1) added the need to also teach on legislation and policies regarding HIV care as their study showed that students were lacking.

Dharmalingam, Porredi, Gandhi and Chandra (2015, 24) conducted a study to assess nursing students' knowledge and attitude towards people living with HIV and AIDS. Study findings indicated differences in levels of knowledge on various aspects of HIV and AIDS care. It was

found that they had a moderate level of knowledge on the mode of transmission and on ARV`s. However, it was reported students had adequate knowledge on the causes of HIV and AIDS. Overall findings showed that students` knowledge was of a good level 76.1%, with a mean score of 38.05 and standard deviation 4.91 (Dharmalingam et al 2015, 24).

In the study conducted by Asante and Oti-Boadi (2013, 273), with the aim to evaluate HIV and AIDS knowledge among undergraduate university students, findings indicated that most students were knowledgeable. Highlighted areas that had required knowledge were on prevention 94.4%, definition and meaning of HIV and AIDS was 98.1% and 96.3% in modes of transmission. Similar findings were found in the study conducted by Farotimi, Ugochukwu, Nwozichi and Ojediran (2015, 708) and most, 94% of the HIV and AIDS had excellent knowledge on HIV care. The aim of the study was to assess knowledge attitude and practice of HIV-related stigma and discrimination reduction among nursing students in Southern Nigeria.

Al-Rabeei, Dallak and Al-Awadi (2012, 225) did a study aiming at assessing knowledge, attitude and beliefs towards HIV and AIDS among students of health institutes. Findings showed that students had moderate knowledge on HIV and AIDS, 67.6%. Various modes of transmission knowledge were very good. However, there were misconceptions similar to other researchers` reports, 41.5% of the HIV and AIDS believed HIV could be contracted through kissing and hugging 69.3%, and 61.3% through swimming pools. Researchers asserted that more HIV related information should be provided to eradicate misconceptions and increase students with a positive attitude towards PLWH.

In the study conducted by Akin, Mendi, Mendi and Durna (2013,3363) aiming to assess Turkish nursing students` knowledge and attitude towards patients with HIV and AIDS, findings were 90.2% participants reported excellent knowledge on HIV transmission routes. However, 91.7% had insufficient knowledge on HIV antibodies and HIV infection. The third and fourth year students were found to be more knowledgeable, most probably they had completed more core courses with HIV module and more clinical practice than the first and second years (Akin et al 2013, 3366).

Findings were similar to those of Chan, Madeleine and Thayala (2012, 84). They conducted a study to identify factors affecting nursing students` knowledge of HIV and AIDS. They found an

association between the year of study and knowledge of HIV and AIDS. This is in relation to the core courses completed that equipped the senior student nurses as compared to the 1<sup>st</sup> and 2<sup>nd</sup> years. The study conducted by Biswas, Adikari, Ray and Kundu (2013, 17) tallies with findings from other researchers. The aim of the study was to evaluate knowledge, attitudes and practices of nursing students about health care related aspects. Findings revealed that knowledge acquisition on HIV mode of transmission was increasing according to the year or level of training. For 1<sup>st</sup> years was 12%, 2<sup>nd</sup> years, 94% and 3<sup>rd</sup> years, was 98%. That confirmed an association between the year of study and HIV and AIDS level of knowledge.

Khorvash, Mansorian, Boroumandfar and Mohamadirizi (2014, 406) did a study to investigate an association between students` knowledge and their tendency to take care of HIV patients among the students in nursing and midwifery school. Findings indicated that students had moderate knowledge on HIV care with only 9.5% reported high knowledge on HIV and AIDS. The latter was associated with the courses students had completed in their training.

Naidoo, Ngcobo, Ncama and Brysiewicz (2017, 6) conducted a study on experiences of nurse graduates of the integrated HIV curriculum, findings revealed that participants expressed that the programme lead to required knowledge acquisition using the current policies, and use of latest circulars to guide practice. The study participants had studied the comprehensive four-year degree.

Contrary to other study findings, Modeste and Adejumo (2015) did a presentation that included concerns their study participants raised regarding Integration of NIMART in pre-service curriculum. The HIV experts (the participants) questioned knowledge competencies in topics such as pharmacology as that is crucial in ART initiating and monitoring. To address such concerns authors highlighted that the areas of concern will need special attention and emphasis in the curriculum design and implementation.

Overall, literature reveals the knowledge gaps on HIV and AIDS care among student nurses. However, study conducted by Naidoo et al (2017, 10) confirmed effectiveness of integrating HIV competencies into the basic nursing education curriculum. Participants were adequately prepared on HIV and AIDS care. They acquired life- long skills that will make provision of comprehensive quality and safe HIV and AIDS care possible.

## **2.6 Student nurses` skills /competences in providing care to people living with HIV**

Smith, Odera, Chege, Muigai, Patnaik, Michaels-Strasser, Howard, Yushears and Dhorn (2016, 325) conducted a study on identification of gaps in the nurses` training regarding HIV care and treatment. The study findings confirmed gaps in ARV initiation. Only a third out 162 participants reported they were competent. Majority of the HIV and AIDS, 65% indicated were not competent in identifying treatment failure through viral load monitoring (Smith et al 2014, 325). Overall study findings were that although some were trained on HIV care and treatment, about half reported they were competent (Smith et al 2014, 327). The recommendation similar to other authors` was included in the report that the nursing students be prepared to render comprehensive HIV and AIDS care using updated knowledge.

Lekhuleni, Kgole and Mbombi (2015, 55) conducted a study to determine knowledge of student nurses in NIMART. Study findings revealed that student nurses` knowledge on MINART was insufficient. Authors added that students had no knowledge of Tuberculosis (TB)/HIV co-infection (Lekhuleni, Kgole and Mbombi (2015, 60). This is a great concern as according to the (WHO, 2015) possibility of contracting TB is 16-27 times greater in PLWH than the HIV negative people. The study concurred with other studies by recommending NIMART to be integrated into the undergraduate nursing curriculum.

In the study conducted by Naidoo et al (2017,7), study participants reported that through an HIV integrated curriculum they developed leadership and problem-solving skills in HIV and AIDS related aspects of healthcare. One participant cited an example that once a week she visited outpatient department to share with other nurses the updated HIV information. Another reported positive outcome reported by Naidoo et al (2017, 8) is they also developed confidence to practice in the clinical settings, able to perform diagnostic tests like PCR. She did not only do the tests, but also taught other nurses. The reported leadership and teaching skills are the expected roles from the professional nurse.

The study conducted by Mulenga and Naidoo (2017, 5), even though majority of the HIV and AIDS, 74.4% had been trained on Prevention of Mother to Child Transmission (PMTCT), they had a challenge in accessing updated information. Most information 70.4% they possessed was received during basic training, 18.5% through internet and 12.3% from journals. The last two

sources are common and reliable when accessing for effective evidence based practice of the PMTCT programme.

Zwane (2011, 62) conducted a study with the aim to explore the perceived clinical competencies of newly qualified midwives. These midwives had undergone the comprehensive four-year diploma. Study participants were newly qualified midwives and supervisors working in the various obstetric units. Researcher of this study is only presenting competency ratings done by midwives only as that is in line with topic under study. Findings were reported on various skills that the HIV and AIDS acquired during their education and training. Regarding problem-solving skills, 32% had no experience in obtaining adequate information from the client. 47.8% of the participants, rated themselves competent and able to self-sufficiently assess client's needs.

In the same study, 52.1% reported competency in defining the client's problems, 54.2% could formulate nursing care plan with no assistance (Zwane 2011, 63). Research skills were found to be lacking, an average of 47.9% in identifying the researchable problem, some 33.3% could initiate research study and only 14.6% could read and analyse research findings and recommendations. Regarding teaching abilities in the same study, overall findings revealed less than 50% of the midwives could identify the client's learning needs, set teaching objectives and use relevant teaching strategies and teaching aids in teaching clients and their families (Zwane 2011,71).

The researcher also looked at the leadership skills of the midwives. Similarly, like in other skills, findings showed that midwives ability to allocate tasks in the unit was rated at only 31.3% and 41.7% for leading and influencing other health care professionals in the unit. However, conflict management skills were slightly better, 57.8% participants were competent (Zwane 2011, 76).

The researcher made some recommendations, which are reviewing of the teaching strategies to be the learner-centred type such as problem and case-based. That will facilitate students to take charge of the learning process as opposed to the teacher dominating the learning process. Student-centred learning encourages collaboration and acquisition of necessary skills such as critical thinking, problem solving and decision-making. Also stressed that focus should be on the availability of online information searching facilities with knowledgeable educators to assist students in their research projects. Other recommendations were mentors and preceptors to create

clinical learning opportunities for students to practice leadership and teaching skills for competence development (Zwane 2011, 152). In summary literature confirm gaps in the skills student nurses possess on HIV and AIDS care.

## **2.7 Student nurses` attitude towards HIV and people living with HIV**

In the study conducted by Suominen et al (2014, 5), findings were 75% reported were keen to nurse PLWH who are dying whilst slightly less than 40% were reluctant to care for PLWH and homosexuals irrespective of the latter`s HIV status. Majority were concerned about a possibility of contracting HIV. About 90% had sympathy towards people who contracted HIV through a blood transfusion and were willing to care for them. This is discrimination to other PLWH who contracted the virus through other modes of transmission. Researchers recommended provision of latest HIV and AIDS knowledge that will assist to change the student nurses` negative attitude toward PLWH for the better.

The study conducted by Dharmalingam, Porredi, Gandhi and Chandra 2015, 23), majority of student nurses` attitudes, 67.4% were favourable towards PLWH, with a few, 32.6% who reported a negative attitude. Researchers stressed the need to focus on improving the level of knowledge and attitudes of discriminating PLWH. Similarly, in the study conducted by Sehume, Zungu and Hoque (2012, 16), findings were 99.2% participants were willing to care for people with HIV and AIDS. A few participants with negative attitudes were concerned about the possibility of getting infected whilst caring for these patients and lacked knowledge on modes of HIV transmission (Sehume, Zungu and Hoque 2012, 13). Authors added that negative attitude would be eliminated by attending HIV and AIDS care workshops and learning about values clarification to prevent patient victimization (Sehume, Zungu and Hoque 2012, 19).

Akin et al (2013, 3365) students` attitudes were found to be positive, although they had concerns of getting infected. Similar findings were reported in the study done by Ouzouni and Nakakis (2012, 140) most students had favourable attitudes and were willing to care for PLWH. However, a few who had negative attitudes reported PLWH should, 15% stay at home, or hospital and 7.9% responded PLWH should be kept out of school, and 22.8% would avoid nursing PLWH (Ouzouni and Nakakis (2012, 147). The study of Akin et al (2013, 3365)

stressed a need to focus on improvement of knowledge on HIV and AIDS to eliminate misconceptions students had.

According to Al-Rabeei, Dallak and Al-Awadi (2012, 234) findings on attitudes were diverse. It was found that 86.8% had positive attitude and were willing to care for PLWH, 41% reported such should be isolated from other patients. Authors added that 65.5% felt PLWH should be punished as they associated HIV infection with low morals. Contrary to the study conducted by Ouzouni and Nakakis (2012) the findings from Al-Rabeei, Dallak and Al-Awadi (2012, 224), 66.2% had a positive attitude; they agreed that children with HIV and AIDS should be allowed to attend school. Similarly, authors recommended that student nurses be provided with more knowledge on HIV care to eliminate myths and cultivate favourable attitude towards PLWH.

Contrary to findings of other authors, in the study conducted by Nazik et al (2012, 436), 58.5% of the student nurses reported concern and tender feelings for PLWH. However, 39.5% reported that they had hard feelings about the additional workload that is brought by caring for PLWH. Similarly, 54% of the participants concurred with other researchers' reports; their response was they did not like their children to attend the same school with children infected with HIV. This confirms a lack of knowledge on the mode of HIV transmission and fear of getting infected that lead to the negative attitudes.

In the study done by Mulenga and Naidoo (2017, 6) with the aim to explore nurses' knowledge, attitudes and practices regarding evidence-based practice in PMTCT of HIV programme, findings were, 64.2% had positive attitudes towards the PMTCT programme implementation.

Reluctance to care for PLWH was also found in the study conducted by Khorvash et al (2014, 407), over 50% students due to lack of knowledge and fear of getting infected with HIV. The report added that 91% of health care professionals find themselves exposed to Occupational AIDS (Khorvash et al (2014, 408). The study conducted by Farotimi, Nwozichi and Ojediran (2014, 708) shares similar findings. Discrimination and stigma to PLWH was reported. With 74% discriminating at low level whilst 26% was at high level. Researchers recommended provision of educational sessions to reduce stigma and discrimination practices among student nurses (Farotimi, Nwozichi and Ojediran (2014, 710). Researchers recommended that there should be continuous counselling services provided to student nurses who care for PLWH and

media to conduct educational sessions to increase knowledge on HIV and AIDS care (Khorvash et al (2014, 407).

In summary, literature asserts that student nurses had favourable attitudes with some barriers such as a heavy workload and a lack of facilities to access updated information that prevented them from practicing PMTCT programme using the latest research findings. Researchers recommended various approaches to support one another at work such as peer supported groups and peer mentoring. They added a need to create platforms to discuss new policies together.

Literature also reports diverse attitudes towards people living with HIV and AIDS. It showed that knowledge on HIV care increased students` willingness to care for PLWH. Fear is from myths; fear of being infected and a lack of knowledge are responsible for the students` negative attitudes towards PLWH.

## **2.8 Educational preparation of student nurses to provide care to HIV infected persons.**

Zuber et al (2014, 523) conducted a survey on Nurse-Initiated and Managed Antiretroviral Therapy (NIMART). Research findings revealed that in more than 50% of African countries, NIMART had not been included in the nurses` training curriculum. In East, Central and Southern Africa, 46% (n=5) countries out of 11 had integrated NIMART into the basic nursing education programmes. The countries were Botswana, Zimbabwe, Uganda, Rwanda and Malawi. Authors stressed that focus should be on integrating NIMART into nursing curriculum and have policies in place to regulate and guide nurses` practice.

Smith et al (2016, 323) study findings were like Zuber et al (2014, 526) that NIMART is not adequately integrated into the basic nursing education curriculum. However, Smith et al (2016, 326) also indicated that some nurses had been trained on HIV care and treatment tasks. There were gaps identified in the HIV care training and practice for competence development. Some highlighted areas they were trained on, HIV prevention were 91% yet only 69% were practicing and 79% competent. 82% had training on clinical staging, 71% practicing and thus 57% competent. The study further revealed that less than half were trained on NIMART in Kenya, yet less than a quarter were practicing and less than a third reported were competent. Researchers



suggested better teaching and assessment strategies relevant to achievement of the required competencies. Mentoring of nurses trained on NIMART to practice for competence development was also recommended.

In the study conducted by Akin et al (2013, 3363), findings indicated that 74.5% participants had received insufficient training on HIV and AIDS. In the study conducted by Naidoo et al (2017,3) the HIV integrated curriculum included, HIV- related case studies from 1<sup>st</sup> to 4<sup>th</sup> year, HIV clinical related competencies, workshop on counselling, testing and support done at community settings and 2 weeks of NIMART at 4<sup>th</sup> year of training. From the study findings, the integrated programme could holistically prepare nurses to meet people's health needs.

The study conducted by Ouzouni and Nakakis (2012, 139) 76.7% of the participants reported they had received no training on HIV and AIDS care in their basic nursing education preparation. Authors supported other researchers' recommendations of restructuring basic education and training nursing curriculum by integrating HIV care to acquire HIV care knowledge and willingness to care for PLWH. Contrary to that, in the study done by Mulenga and Naidoo (2017, 6) whose findings were 70.4% participants reported they had received PMTCT training in their basic education and training. They were only challenged by lack of facilities to access latest information. For that, researchers suggested updates through support groups to share and discuss relevant information they get hold of.

In the study conducted by Mbombo and Bimerew (2012, 9) on integrating PMTCT competences into the nursing curriculum, students reported they were not allowed to participate in the management of PLWH with Highly Active Antiretroviral Therapy (HAART). They were only attended to by qualified personnel. This was a gap for their clinical learning exposure.

Modeste and Adejumo (2015, 2) conducted a study to validate integration of HIV and AIDS related nursing competencies into the undergraduate nursing curriculum. Findings showed some gaps in the preparation of student nurses on HIV and AIDS competencies. Researchers' recommendations focused on nurse educators taking a lead by restructuring the learning outcomes for each level or year of training. Researchers added that they should also identify the available learning opportunities for their students, expose them to practice for competence. Most importantly, the researchers highlighted an important need to develop nurse educators by

equipping them to drive the nursing education transformation process (Modeste and Adejumo 2015, 9).

In summary, literature indicates preparation of nurses on HIV care is insufficient and identified different gaps that need to be attended.

## **2.9 Conclusion**

To reiterate this study was conducted to explore the perceived competency levels of HIV and AIDS management among student nurses. Literature that was presented in this chapter included the extent of HIV and AIDS globally and locally and health care professionals' shortage. That was followed by the need to transform nursing education curriculum, students' knowledge of HIV and AIDS and its management and student nurses' skills /competencies in providing care to people living with HIV. Literature on student nurses' attitude towards HIV and people living with HIV and the educational preparation of student nurses to provide care to HIV infected persons was also presented.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter presents the approach that was used to address the objectives of this study and find answers to the research questions. It describes the approach, design, research settings and the study population. It will also present the sample, sampling technique and calculation of the sample size. Data collection instrument, its validity and reliability, ethical considerations will also be described. Data collection process, analysis data management and dissemination of findings will follow that.

#### **3.2 Research paradigm and approach**

The researcher used the positivist paradigm in this study. “The fundamental assumption of positivist’s philosophers is that there is reality out there that can be studied and known” (Polit and Beck 2012, 12). The positivist paradigm supports that actual events can be empirically observed, and explained through logical analysis. The quantitative approach originates from the positivism philosophical background that has tight control over the scientific enquiry process. Positivists focus on objectivity, to avoid bias and not to influence the scientific study. This paradigm uses the deductive reasoning, which moves from a general or broader perspective to a specific one (Grove, Burns and Gray 2013, 7). The general perspective may be an assumption or hypothesis that the research has and works to prove it (De Vos, Strydom, Fouche, and Delport 2011, 48). This research lens resonates with the researcher’s problem statement, aims and objectives. The items on the research instrument were structured to answer the research questions.

In this study, the quantitative research methodology was used. The quantitative approach is defined as the formal, objective and systematic process of collecting numerical data, to understand and describe aspects of the world (Grove, Burns and Gray 2013, 23). This rigorous

and disciplined, systematic approach was used to explore and describe the perceived extent of knowledge, skills and attitudes related to HIV and AIDS management that are possessed by the student nurses.

### **3.3 Research design**

Research design is a plan that details how and what data was collected, to answer the research questions (De Vos et al 2011, 143). The researcher used the non-experimental descriptive design, which helps to arrive at new understanding of what exactly is happening in the real-life situation. Grove et al (2013, 26 and Polit and Beck 2012,741) both assert that descriptive studies give the researcher a picture of what exists, how often something happens, can generate new meanings and categorize information gathered. Brink, Van Der Walt and Van Rensburg (2012, 112) adds that the descriptive design may be useful when the researcher aims at identifying challenges or defending the current practice, and making judgements on that practice. It also limits study outcome interference by certain factors or variables. This design was appropriate for the problem under study and its purpose and it assisted in exploring the perceived competency levels of student nurses in HIV and AIDS management.

### **3.4 Research settings**

The study was conducted at two selected Nursing Education Institutions in the eThekweni Municipality. These Nursing Education Institutions offer a Comprehensive Four-Year Diploma Programme in nursing and Midwifery. One of the colleges is attached to a District Hospital, which is classified as rural, with a catchment area that includes most health care settings geographically located in rural areas. The second nursing education institution is attached to a referral hospital that commonly receives patients from urban and semi-urban areas.

### **3.5 Study population**

The term population is defined as the total number of all people, elements or objects that meet the researchers` criteria or characteristics for inclusion as participants from whom relevant data may be gathered (Grove, Burns and Gray 2013, 44; Polit and Beck 2012, 273 and Brink, Van Der Walt and Van Rensburg 2012, 121). The research population for this study was all the third and fourth year student nurses studying the comprehensive four-year diploma in the two selected Nursing Education Institutions in the eThekweni municipality. The researcher included the total number of the population to cater for those who may not participate in the study by choice, for spoiled questionnaire responses as well as students who may withdraw their participation during the process of data collection. Total population in Nursing Education Institution A was 115 (3<sup>rd</sup> years were 55 and 4<sup>th</sup> were 60) and Total population of Nursing Education Institution B was 92 (3<sup>rd</sup> years were 52 and 4<sup>th</sup> years were 40). Therefore, total population was 207.

### **3.6 Sampling and Sampling technique**

According to Grove, Burns and Gray 2013, 351; Polit and Beck 2012, 275) sampling is the process of selecting a portion of the population who represent the entire population. The subset of the population is selected to participate in the study. The researcher used the systemic random sampling method, which is defined as systematic selection of participants from a sampling frame. The population list of all the 3<sup>rd</sup> and 4<sup>th</sup> year student nurses in each of the two Nursing Education Institutions was made. Numbers were then assigned, thereafter the researcher asked for assistance to randomly choose any number that became the first one. Sample was made by selecting every alternative number after the initial one that was randomly selected. In this sampling approach, all elements had an equal chance of being selected from the population (Barbie 2016, 193).

### **3.7 Inclusion and exclusion**

Polit and Beck (2012, 274) and Grove, Burns and Gray (2013, 353) define inclusion as the eligibility criteria that determine who may participate in the study in terms of the required characteristics for the study participants. In this study, the inclusion criteria were, all third and fourth year student nurses who were studying the comprehensive four-year diploma in the two

selected Nursing Education Institutions. All third and fourth year student nurses who were willing to participate in the study.

An exclusion criterion refers to all elements that do not have the required characteristics (Polit and Beck 2012, 274; Grove, Burns and Gray 2013, 353). This study exclusion criterion was, all the first and second year student nurses as they had not covered all the modules on HIV and AIDS care.

### **3.8 Calculating sample size**

The targeted minimum sample size was calculated using the Yamane formula designed by the University of Florida using the total population of 207 from both Nursing Education Institutions (Glen 1992, 3). The precision was 0.05 =5%. Calculated sample size was 137 student nurses =60% of the total population. From Nursing Education Institution A, the sample drawn was 56% of 137= 77 student nurses (37 third years and 40 fourth years). The sample that was drawn from Nursing Education Institution B, was 44% of 137 = 60 student nurses (29 third years and 31 fourth years).

### **3.9 Data collection instrument**

According to Barbie (2016, 248) a questionnaire is a document containing questions and other types of items designed to solicit information appropriate for analysis”. Questionnaires are administered by the researcher for the participants to answer in writing or occasionally on the computer (Polit and Beck 2012, 297; Grove, Burns and Gray 2013, 425). The format that was followed was adapted from studies by Zwane (2011, 170); Kutoane (2012, 108) and Bam (2012, 145).

The researcher used the Likert scale self- structured questionnaire to collect data on HIV and AIDS clinical management competencies of the student nurses. Questionnaires were constructed based on literature. The scale was from 1-5. 1 = poor for having no knowledge or experience, 2 = fair- having little knowledge, 3 = good able to perform most activities unaided, 4 = good for being able to function independently and 5 = excellent for having knowledge and skills and able

to teach others. Part of the questionnaire on foundational knowledge, the scale was from 0-3. 0=no knowledge, 1- inadequate knowledge, 2= adequate knowledge and extensive knowledge.

Data collection instrument had two sections. Section A collected demographic data for the research participants, age, gender, their level of training, the nursing diploma core modules the learner had completed and the one's the study participant was still studying. Section B consisted of the HIV care preparation the participants had received, the acquired competences such as knowledge on HIV and AIDS care, the holistic and safe practice or care provision. It also included competencies on research and evidence based practice, leadership in HIV management, personal and professional development and student concerns. Other competences that were in section B are the ethics and professionalism and health education, they both incorporated the interdisciplinary competency area. Section B comprised of closed ended and open-ended questions for the participant to give suggestions, concerns and comments.

### **3.10 Validity and reliability**

Research findings aim at reflecting what is true; to achieve that the researcher had to ensure that the research instrument was both reliable and valid. The two are equally important processes to use to ensure quality of the research instrument. These contribute in justifying credibility of the data collected, findings of the scientific enquiry and make the study to be of desired quality.

#### **3.10.1 Validity**

Grove, Burns and Gray (2013, 393 and Brink et al 2012, 165) define validity of an instrument as the extent to which it can measure what it is exactly intended to measure. Botma et al (2010, 174) concurs that validity shows whether research findings are acceptable or not, based on the study design and the interpretation. In this study, validity was ensured by conducting a pilot study. This mini or preliminary study was conducted on six participants that met the inclusion criteria. This pilot study was conducted before the actual study to test the instrument. It may help to confirm whether questions were simple, and clear for the participant to understand, if not be restructured and simplified. It would also assist the researcher to estimate time each participant may need to complete filling in the questionnaire. The pilot study showed no need for changes.

The researcher also used the checklist to confirm relationship between the questions on the research instrument and the objectives, questions and conceptual framework. According to Botma et al (2012, 143) a checklist is a tool that is used to indicate whether a certain behaviour happened or not. It comprises of several questions arranged in one dimension and responses to such on the other side of questions as follows (Polit and Beck 2012, 299).

**Table 3.1: Content Validity (checklist)**

<b>Research Objectives</b>	<b>Research Questions</b>	<b>ITEMS</b>	<b>Conceptual framework concepts</b>
1. To describe the student nurses perceived extent of knowledge possessed that is related to the HIV and AIDS management	1. What is the perceived extent of knowledge possessed by the student nurses that is related to the HIV and AIDS management?	7-41	Foundational knowledge competence,
2. To describe the student nurses perceived level of psychomotor competencies possessed that are related to the HIV and AIDS.	2. What is the perceived level of psychomotor competencies possess by the student nurses that related to the HIV and AIDS?	42-87	Performance (care provision, evidence-based practice, leadership and management),
3. To describe the student nurses perceived level competence in terms of attitudes related to the management of HIV and AIDS.	3. What is the perceived level of competence by the student nurses in terms of possessed attitudes related to the management of HIV and AIDS?	42-87	performance (care provision, evidence-based practice, leadership and management),
4. To explore the relationship between the students nurses demographics and levels of competence in HIV and AIDS management.	4. What is the relationship between the student nurses demographics and their levels of competence in HIV and AIDS management?	1-6 and 7-85	Student nurses' foundational knowledge, performance (care provision, evidence-based practice, leadership and management) and supporting pillars
5. To explore the views of student nurses regarding their educational preparation in the management of HIV and AIDS	5. How do student nurses view their educational preparation in the management of HIV and AIDS?	86-87	Student nurses' concerns regarding their preparation on HIV and AIDS management.



### **3.10.2 Reliability**

“Reliability refers to the accuracy and consistency of information obtained in the study” (Polit and Beck 2012, 175). When the researcher uses a valid research instrument, it yields the same results when used in different groups but in different situations. In this study reliability of the instrument was confirmed by doing the Cronbach’s Alpha test using Statistic Package for Social Sciences (SPSS) version 24. The result was .983 based on 93 standardized items. This indicated high consistence of the instrument and the data collection tool is of quality since the acceptable result is from 0.7 and above (Polit and Beck 2012, 334). “Cronbach’s Alpha Coefficient is the statistical procedure used for calculating internal consistency for interval and ratio level” (Grove, Burns and Gray 2013, 391). According to Pallant (2016, 6) the Cronbach’s Alpha coefficient indicates the average correlation of all the items that make the scale.

### **3.11 Ethical considerations**

Ethical approval to conduct the study was granted from the University of KwaZulu Natal Biomedical Research Ethics Committee, the Provincial Department of Health. The gatekeeper permission was obtained from the KwaZulu Natal college of Nursing Ethics Committee to protect the rights of the participants. Permission to conduct research was also received from principals of the two selected Nursing Education Institutions, before administering questionnaires to the student nurses. Participation on the study was on voluntary basis and participants were informed that they could withdraw whenever they felt like without giving reasons and the fact that they would not be victimized for that.

Prospective participants were supplied with information leaflets explaining the purpose of the study and how it was going to be conducted. HIV and AIDS were also assured about anonymity and were advised not to include any identifiable information such as their name or their Nursing Education Institution names on the questionnaire. The researcher assigned numbers to each questionnaire, not names of the HIV and AIDS. The signed consent forms were separated from the questionnaires to ensure that there was no link between the two.

Information gathered was treated confidentially by the researcher and the supervisor and kept under lock and key. Electronic data, the researcher used her personal password to access. Data was used for this study only. All the information given by the participants was not shared with another person without their permission even during dissemination of research findings.

### **3.12 Data collection process**

The researcher booked an appointment with the Nursing Education Institution principals, met each principal as arranged and explained the purpose and significance of the study. On the day for collection of data, the researcher met the participants at the Nursing Education Institution, introduced self and explained the purpose and significance of the study. The researcher also clarified the fact that they had a right to choose to either participate or not to. After signing consent, the researcher explained how to fill in the questionnaire to avoid spoiling.

The researcher distributed questionnaires by hand during tea or lunch breaks. They were filled in whilst the researcher was waiting to collect them at completion and to enhance the participant's response. The researcher clarified and answered questions that the participants had as they were filling in the questionnaire. The researcher provided a box for those that were not able to fill in the questionnaire immediately, and these were collected the following day by the researcher. Completion of the questionnaire took about 30-35 minutes.

### **3.13 Data analysis**

Data collected was organized and analysed using the SPSS version 24, with assistance of the supervisor, student mentor and the statistician from the University of KwaZulu Natal. Data was summarized, categorized through the descriptive and inferential statistics, the mean, mode and median. Percentages and averages were calculated, presented in tables, graphs format and interpreted accordingly. Cross-tabulations were done to establish the relationship among demographic data and participants perceived competency levels in different areas of HIV and AIDS management. A chi-square value obtained at a P value less or equal to 0.05 denoted a significant difference between variables under investigation.

### **3.14 Data management**

Data from this study was used for completing this study only. Data was also treated confidentially, accessed by the researcher and the supervisor of the study only. For a period of five years, written data shall be kept in a locked place. Electronic data was stored in the computer with a password known by the researcher only. After five years, written data will be shredded and electronic data will be deleted from files and the recycle bin.

### **3.15 Dissemination of research findings**

Results of the study were communicated to the study supervisor and the head of nursing and public health school. Research findings will be submitted to the UKZN faculty of Health Sciences. Such will also be disseminated to the DOH, the two selected Nursing Education Institutions at eThekweni municipality where the participants are studying and the KwaZulu Natal College of Nursing. A copy will be given to ICAP (my study financial sponsor) in Columbia and findings will also be widely disseminated through publishing in the accredited nursing journals.

### **3.16. Conclusion**

This chapter described the research approach, settings, population, inclusion and exclusion criteria, sampling and the data collection instrument. Ethical considerations, data collection process, analysis, data management and dissemination of the research findings were also described. The next chapter will present analysis and findings of this study.

## **CHAPTER FOUR**

### **RESULTS PRESENTATION**

#### **4.1 Introduction**

This chapter presents the results of the study that aimed at exploring the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality. The objectives of the study were to (a) Describe the student nurses' perceived extent of knowledge possessed related to the HIV and AIDS management. (b) Describe the student nurses perceived level of psychomotor competencies possessed related to the HIV and AIDS care. (c) Describe the student nurses perceived level of competence in terms of attitudes related to the management of HIV and AIDS. (d) Explore the relationship between the student nurses' demographics and levels of competence in HIV and AIDS management. (e) Explore views of student nurses regarding their educational preparation in the management of HIV and AIDS.

To reiterate, data was collected using a structured questionnaire which included closed ended and open-ended questions and analyzed using the Statistics Package for Social Sciences (SPSS) version 24 software. Research findings are therefore presented according to sections of the questionnaire. The relationship between the HIV and AIDS' demographics and the foundational knowledge, competencies which were the health care provision, health promotion and health education, leadership and management, ethical issues, research and personal and professional development were tested using the Pearson chi square. Descriptive statistics that describe one variable at a time were used, that is the mean and standard deviation tables and correlation indexes were used. They presented frequencies of variables and were cross tabulated. Findings reflect measures such as tables, frequency counts, graphs, and percentages. Responses from the open-ended questions were analyzed thematically and the common frequenting themes were quantified and later presented narratively.

## 4.2 Sample realization

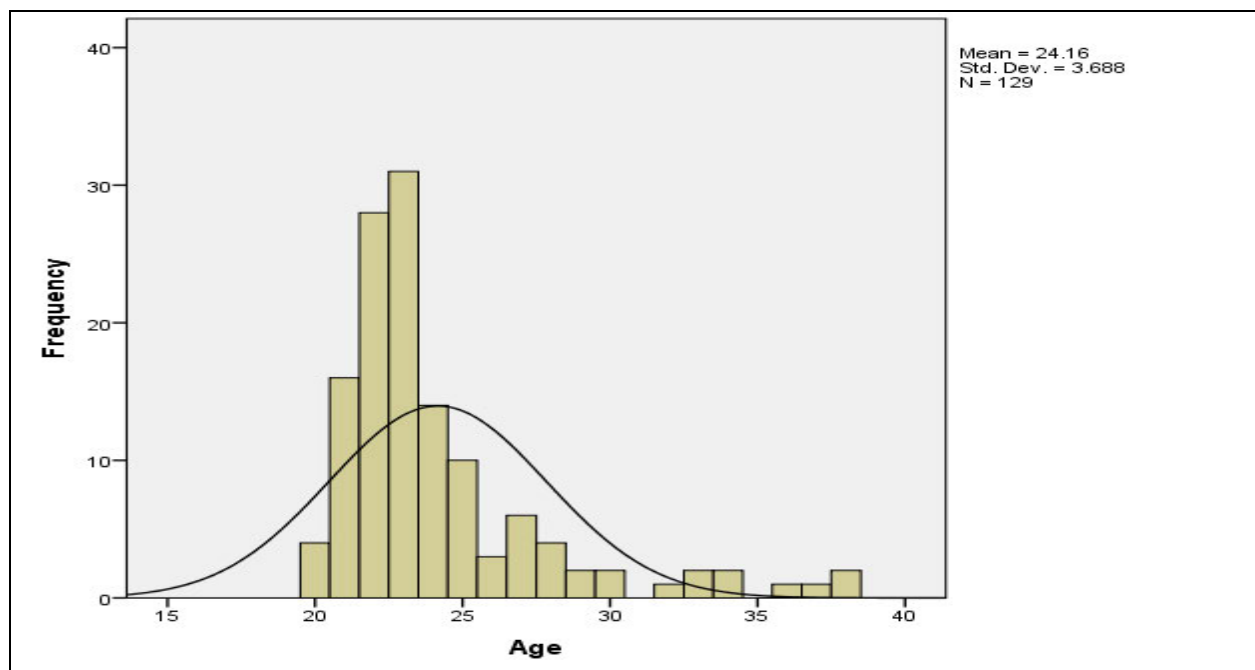
The total sample size of participants from the two research settings was 131 and only 129 returned completed questionnaires. The response rate was therefore 98.4 %. Of the 129 HIV and AIDS, 55.8% (n=72) from Nursing education institution A and 44.1% (n=57) from institution B.

## 4.3 Socio demographics

The demographic data in this study consisted of age, gender, level of training, core courses completed, student nurse's experience in nursing people with HIV and AIDS and sources of knowledge on HIV and AIDS management.

### Age

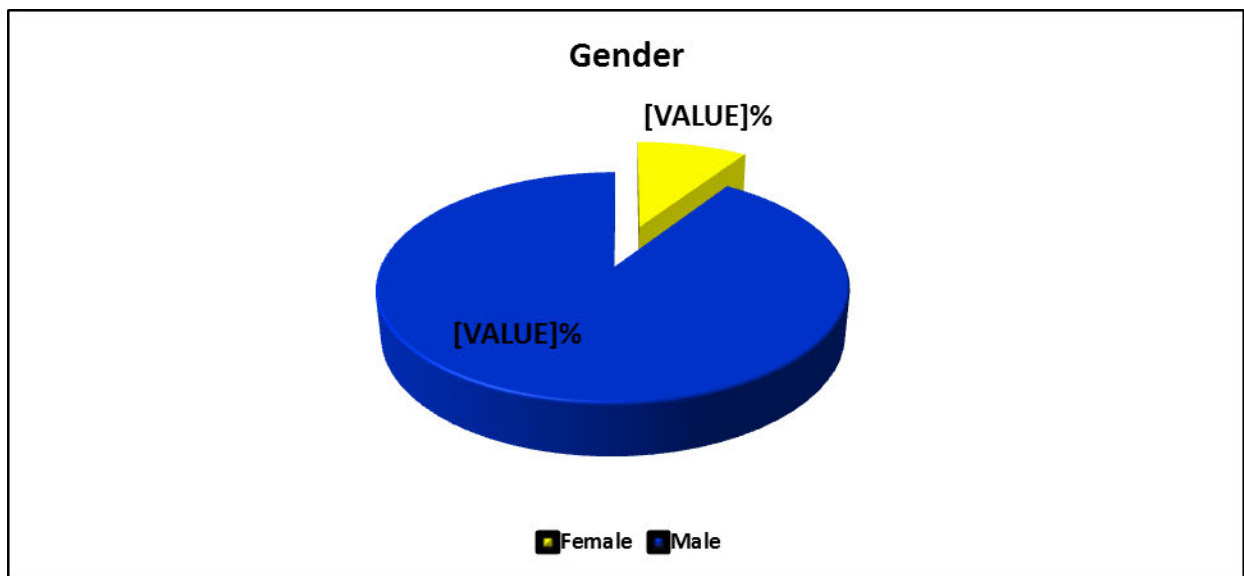
The study revealed that age of the participants ranged from 20 to 38 years. The mean age was 24.16, and the standard deviation was 3.688. The median and the mode were 23 respectively. (See figure 4.1). The majority 79.8% (n=103), HIV and AIDS were in the age group of 20-25 years, 13.2% (n=17) were between 26-30 years, 3.9% (n=5) were between 31-35, and small percentage (3.1%, n=4) were aged 36 and above.



**Figure 4.1: Histogram of the ages of the participants' knowledge on HIV and AIDS**

## Gender

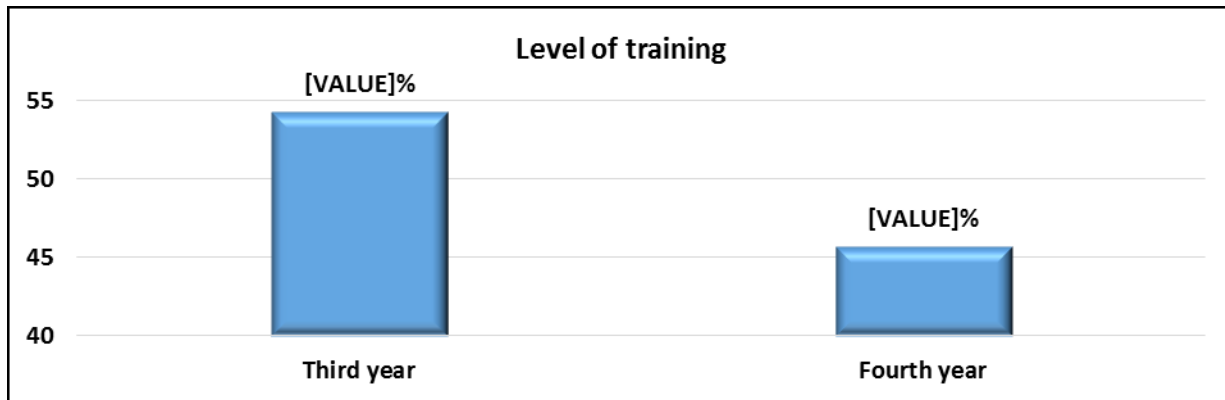
The study participants were both male and female student nurses. Results of the study reported that most of the HIV and AIDS were females 90.7% (n=117) and males were only 9.3% (n=12). (See Figure 4.2 below)



**Figure 4.2 Gender of the participants**

## Level/year of training

The participants from this study were at different levels of training, and most of them 54.3%, (n= 70) were at third year of training, and the fourth years were 45.7% (n=59). (See figure 4.3 below).



**Figure 4.3 Level /year of training of the participants.**

### **Core courses completed**

In this study, core courses completed were established with the assumption that the core competencies required to manage HIV and AIDS are integrated in these core courses. The participants reported completing a few courses which included Fundamental nursing, General nursing, Community health nursing, Midwifery, and Psychiatry (See Table 4.1.). Results showed that 99.2% (n=128) participants had completed the Fundamental /basic nursing core course. Only 0.8% (n=one) participant`s response revealed that the core course had not been completed. Results revealed that 83.7% (n=108) had completed the General nursing core course and 16.3% (n=21) had not completed. Results of the study also revealed 54.3% (n=70) had completed the Community Health Nursing core course and 45.7% (n=59) had not completed. Participants responded that 33.3% (n=43) had completed the Midwifery core course and 66.7% (n=86) had not completed. Results further revealed that (8.5%) n=11 participants had completed the Psychiatry/Mental Health core course, and 91.5% (n= 118) had not completed.

**Table 4.1: Core courses completed by the participants on HIV and AIDS**

Completed core course	Yes		No		TOTAL	
	Freq.	%	Freq.	%	Freq.	%
Fundamental nursing	128	99.2	1	.8	129	100
General nursing	108	83.7	21	16.3	129	100
Community health nursing	70	54.3	59	45.7	129	100
Midwifery	43	33.3	86	66.7	129	100
Psychiatry/Mental Health Nursing	11	8.5	118	91.5	129	100

**Correlation between the level of training and the completed co-courses**

A Chi square test was done to establish the association between the level of training and the completed co-courses. There a significant association between the level of training and completion the following courses: General nursing course ( $\chi^2=16.968$ , d. f=1,  $p<0.000$ ); Community health nursing ( $\chi^2=84.976$ , d. f=1,  $p<0.000$ ); Midwifery ( $\chi^2=70.107$ , d. f=1,  $p<0.000$ ). These results indicate that the completed co-courses were taught at a specific level either at the 3<sup>rd</sup> or 4<sup>th</sup> year. The psychiatric co course had no significant association because HIV and AIDS were still studying the module as it was done at the second semester of 4<sup>th</sup> year level. (See Table 4.2 below)

**Table 4.2: Correlation between the level of training and the completed co-courses**

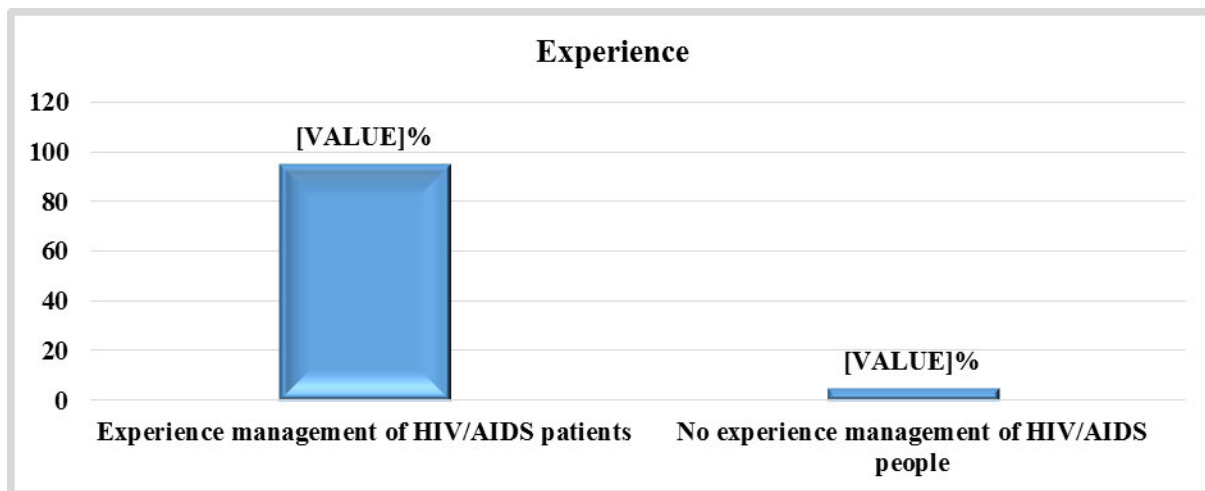
Completed co-courses	3 <sup>rd</sup> year		4 <sup>th</sup> year		Chi square test		
	Freq.	%	Freq.	%	$\chi^2$	d.f	pvalue
Fundamental nursing	69	53.5%	59	45.7%	.849	1	.543
General nursing	50	38.8%	58	45.0%	16.968	1	.000
Community health nursing	12	9.3%	58	45.0%	84.976	1	.000
Midwifery	1	0.8%	42	32.6%	70.107	1	.000
Psychiatry	3	2.3%	8	6.2%	3.530	1	.059



#### 4.4 Experience/practice in managing clients /people with HIV and AIDS.

##### 4.4.1. Participants experience in managing clients /people with HIV and AIDS

The participants` responses showed that 95.3% (n=123) had experience in nursing people with HIV and AIDS and 4.7% (n=6) had none. (Figure 4.4) Out of 123 HIV and AIDS, 51.2% (n=66) were third years and 44.2% (n=57) were fourth years that had experience in nursing PLWH. The participants that reported had no experience were 3.1% (n=4) third years and 1.6% (n=2) fourth years.



**Figure 4.4 Experience of participants in managing people with HIV and AIDS**

#### 4.5. Source of knowledge about HIV and AIDS

In this study, participants reported having acquired knowledge on HIV and AIDS from various sources which included the following: HIV and AIDS nursing module, HIV and AIDS unit in a nursing module, In-service training, workshops, self-initiated online learning, and textbooks.

Study findings reported that 86.8% (n=112) obtained knowledge on HIV and AIDS from the nursing module. Study findings also revealed that 55.8% (n=72) obtained knowledge on HIV and AIDS management from the HIV and AIDS unit nursing module. Findings in this study further showed that 36.4% (n=47) obtained their knowledge on HIV and AIDS management from in-service training. Findings further revealed that 14.7% (n=19) obtained knowledge on HIV and AIDS from workshops they attended. Participants, 34.9% (n=45) reported they obtained

knowledge on HIV and AIDS management through self- initiated on-line learning. Study results further revealed that 5.4% (n=7) obtained knowledge on HIV and AIDS from reading textbooks.

**Table 4.3: The participants’ sources of knowledge on HIV and AIDS**

Sources of knowledge	Freq.	%
HIV AND AIDS nursing module	112	86.8
HIV AIDS unit in a nursing module	72	55.8
In-service training	47	36.4
Workshops	19	14.7
Self-initiated online learning	45	34.9
Books	7	5.4

To calculate an overall score of the source of knowledge about HIV and AIDS five items in the Table 4.3 were computed. It was found that 31% (n=40) of the HIV and AIDS reported 4 sources of knowledge about HIV and AIDS, 29.5% (n=38) reported 2 sources, 19.4% (n=25) reported 3 sources, 4.7% (n=6) reported 5 sources, and only 1(0.8%) did not mention any source of information.

Overall, an average of 50% reported to get the knowledge about HIV and AIDS from at least 3 sources.

#### **4.6 HIV and AIDS management competences**

In this study, participants reported several HIV and AIDS management competencies. The items under this section were grouped into foundational knowledge, health care provision knowledge on HIV and AIDS, health promotion and health education, ethical issues in HIV and AIDS management, leadership and management, research in HIV and AIDS management as well as personal and professional development in HIV and AIDS management. There were four (4) responses to choose from 0 to 3 in rating level of foundational competence, 0= none, 1= inadequate, 2= Adequate and 3= Extensive (Table 4.4).

**Table 4.4 Participants competencies in foundational knowledge on HIV and AIDS management.**

	None	Inadequate	Adequate	Extensive	Mean	Std.
HIV and AIDS relevant concepts	1(.8%)	12(9.3%)	101(78.3%)	15(11.6%)	2.01	.492
HIV and AIDS microbiology	1(.8%)	27(20.9%)	93(72.1%)	8(6.2%)	1.84	.527
HIV mode of transmission	0(0%)	2(1.6%)	56(43.4%)	71(55.0%)	2.53	.531
Epidemiology of HIV	1(.8%)	10(7.8%)	97(75.2%)	21(16.3%)	2.07	.518
Pathogenesis of HIV	0(0%)	10(7.8%)	93(72.1%)	26(20.2%)	2.12	.516
Clinical manifestation of HIV	0(0%)	5(3.9%)	66(51.2%)	58(45.0%)	2.41	.568
HIV Counselling and testing (HCT)	0(0%)	1(.8%)	63(48.8%)	65(50.4%)	2.50	.517
Provider counselling and testing (PCT)	1(.8%)	11(8.5%)	77(59.7%)	40(31.0%)	2.21	.621
Voluntary counselling and testing (VCT)	1(.8%)	6(4.7%)	76(58.9%)	46(35.7%)	2.29	.592
Diagnosis of HIV Clinically	1(.8%)	18(14.0%)	82(63.6%)	28(21.7%)	2.06	.622
Diagnosis of HIV with Rapid test	1(.8%)	5(3.9%)	76(58.9%)	47(36.4%)	2.31	.584
Prevention of mother to child transmission (PMTCT)	1(.8%)	12(9.3%)	73(56.6%)	43(33.3%)	2.22	.640
Prevention of HIV opportunistic infections	0(0%)	3(2.3%)	83(64.3%)	43(33.3%)	2.31	.512
Opportunistic infections e.g. TB, STI's etc.	0(0%)	4(3.1%)	69(53.5%)	56(43.4%)	2.40	.552
HIV management with Antiretroviral (ARV's)	1(.8%)	18(14.0%)	80(62.0%)	30(23.3%)	2.08	.633
Pre-Exposure prophylaxis (PrEP)	2(1.6%)	37(28.7%)	66(51.2%)	24(18.6%)	1.87	.722
Post exposure prophylaxis (PEP)	2(1.6%)	38(29.5%)	68(52.7%)	21(16.3%)	1.84	.705
Monitoring of CD 4 cell count and the viral load	3(2.3%)	48(37.2%)	72(55.8%)	6(4.7%)	1.63	.613
Legal and ethical issues in HIV care	3(2.3%)	32(24.8%)	83(64.3%)	11(8.5%)	1.79	.621
Effects of HIV to patient, family and community	0(0%)	4(3.1%)	75(58.1%)	50(38.8%)	2.36	.542

	None	Inadequate	Adequate	Extensive	Mean	Std.
HIV and AIDS care	0(0%)	6(4.7%)	84(65.1%)	39(30.2%)	2.26	.534
HIV and AIDS and TB Management	0(0%)	5(3.9%)	78(60.5%)	46(35.7%)	2.32	.545
Integrated Management of Childhood Illnesses (IMCI)	0(0%)	11(8.5%)	72(55.8%)	46(35.7%)	2.27	.609
Cultural sensitivity in HIV and AIDS management	0(0%)	36(27.9%)	74(57.4%)	19(14.7%)	1.87	.642
Antiretroviral Therapy	4(3.1%)	21(16.3%)	88(68.2%)	16(12.4%)	1.90	.635
Nurse Initiated Management of Antiretroviral Therapy (NIMART)	5(3.9%)	55(42.6%)	66(51.2%)	3(2.3%)	1.52	.614
Highly Active Antiretroviral Therapy (HAART)	4(3.1%)	34(26.4%)	85(65.9%)	6(4.7%)	1.72	.599
Sexually Transmitted Infections and Tuberculosis (STI's and TB) and HIV	0(0%)	3(2.3%)	80(62.0%)	46(35.7%)	2.33	.520
Laws, Regulations and policies related to HIV and AIDS management (National and International)	7(5.4%)	66(51.2%)	54(41.9%)	2(1.6%)	1.40	.618
HIV and AIDS management protocols and guidelines (National and International)	2(1.6%)	65(50.4%)	58(45.0%)	4(3.1%)	1.50	.588
National and Provincial HIV and AIDS programmes	3(2.3%)	59(45.7%)	64(49.6%)	3(2.3%)	1.52	.588
HIV Health promotion and preventative strategies	1(.8%)	10(7.8%)	81(62.8%)	37(28.7%)	2.19	.600
Management of Antiretroviral-associated complications	2(1.6%)	57(44.2%)	64(49.6%)	6(4.7%)	1.57	.609
Standard precautions and HIV post exposure Prophylaxis	1(.8%)	41(31.8%)	74(57.4%)	13(10.1%)	1.77	.631
Nutrition and HIV and AIDS	0(0%)	0(0%)	88(68.2%)	41(31.8%)	2.32	.467
Psychosocial aspects of HIV and AIDS in children, adolescents and adults	0(0%)	26(20.2%)	89(69.0%)	14(10.9%)	1.91	.551
Diagnosing and staging HIV and	1(.8%)	25(19.4%)	86(66.7%)	17(13.2%)	1.92	.594

	None	Inadequate	Adequate	Extensive	Mean	Std.
AIDS						
Pre-and Post-test Counselling	0(0%)	2(1.6%)	74(57.4%)	53(41.1%)	2.40	.522
Initiation of Antiretroviral Therapy	4(3.1%)	32(24.8%)	78(60.5%)	15(11.6%)	1.81	.674
HIV antibodies testing equipment	3(2.3%)	39(30.2%)	79(61.2%)	8(6.2%)	1.71	.615
HIV and AIDS management in mentally ill patients	18(14.0%)	63(48.8%)	44(34.1%)	4(3.1%)	1.26	.734

#### 4.6.1 Competencies in foundational knowledge on HIV and AIDS management

In this study, most of the respondent, 78.3% (n=101) reported they had adequate foundational knowledge in HIV and AIDS relevant concepts, 11.6% (n=15) indicated they had extensive knowledge, and 9.3% (n=12) HIV and AIDS indicated they had inadequate foundational knowledge. Mean score was 2.01 and standard deviation was .492. Majority of the HIV and AIDS, 72.1% (n=93) perceived themselves they had adequate knowledge, however, 29% (n=7) HIV and AIDS perceived themselves they had inadequate knowledge. The mean score was 1.84, standard deviation .527.

Many HIV and AIDS, 55% (n=71) responded that they had extensive foundational knowledge on HIV mode of transmission, and 43.4% (n=56) showed adequate knowledge of the HIV and AIDS. Mean score was 2.53 and standard deviation was .531. Majority, 75.2% (n=97) reported that they had adequate knowledge on HIV epidemiology, and 16.3% (n=21) reported they had extensive foundational knowledge on HIV epidemiology. However, few participants, 7.8% (n=10) indicated had inadequate knowledge. The mean score was 2.07 and standard deviation was .518.

Results of this study showed that 72.1% (n=93) had adequate knowledge on HIV pathogenesis, and 20.2% (n=26) had extensive knowledge. Mean score was 2.12, standard deviation .516. Many HIV and AIDS, 51.2% (n=66) indicated they had adequate knowledge in HIV clinical manifestations, and 45% (n=58) who reported had extensive knowledge. Mean score was 2.50 and standard deviation was .517.

It was found that 50.4% (n=65) of the HIV and AIDS reported they had extensive knowledge in counselling and testing for HIV and 48.8% (n=36) indicated they had adequate knowledge. Mean score was 2.21, standard deviation .621. Findings of this study revealed that, 59.7% (n=77)

indicated they had adequate knowledge and 31% (n=40) had extensive knowledge. A significant percentage 58.9% (n=76) indicated they had adequate knowledge on voluntary counselling and testing for HIV, and 35.7% (n=46) reported that they had extensive knowledge. Mean score was 2.29, standard deviation .592. Majority of the HIV and AIDS, 57.4% (n=74) reported they had adequate knowledge and 41.1% (n=53) had extensive knowledge on pre-and post-test counselling. Mean score was 2.40, standard deviation .522.

Findings in this study showed that most HIV and AIDS 58.9% (n=76) had adequate knowledge to diagnose HIV clinically, and 36.4% (n=47) indicated they had extensive knowledge. Mean score was 2.06, standard deviation .622. HIV and AIDS in this study, 58.9% (n=76) had knowledge in diagnosing HIV using the rapid test, and 36.4% (n=47) reported to have an extensive knowledge on using Rapid test to diagnose HIV. Mean score was 2.31, standard deviation .584.

Findings in this study revealed that the foundational knowledge on diagnosing and staging HIV and AIDS, most participants, 66.7% (n=68) had adequate knowledge and 13.2% (n=17) had extensive knowledge. However, significant percentage, 19.4% (n=25) had inadequate knowledge. Mean score was 1.92, standard deviation was .594. Findings in this study showed that 61.2% (n=79) had adequate knowledge on HIV antibodies testing equipment. However, 30.2% (n=39) had inadequate knowledge. Mean score was 1.71, standard deviation .615.

On the foundational knowledge on prevention of mother to child transmission of HIV, 56% (n=73) rated that they had adequate knowledge, and 33.3% (n=43) had extensive knowledge. Mean was 2.22, standard deviation .640. In the prevention of HIV opportunistic infections, 53.3% (n=69) of the HIV and AIDS had adequate knowledge, and 33.3% (n=43) had extensive knowledge. The study findings revealed that 62% (n=80) had adequate knowledge on STI's, TB and 35.7% (n=46) had extensive knowledge on sexually transmitted infections, TB and HIV. The mean score was 2.40, standard deviation .552.

On the foundational knowledge on the opportunistic infections, 53.5% (n=69) had adequate knowledge, and 43.4% (n=56) had extensive knowledge. Mean score was 2.31, standard deviation .512. Most of the HIV and AIDS, 62% (n=80) had adequate knowledge on management of HIV with ARV's, and 23.3% (n=30) reported had extensive knowledge.



However, 14% (n=18) reported to have inadequate knowledge on management of HIV with ARV's. Mean score was 2.08, standard deviation .633.

On the foundational knowledge on pre-exposure prophylaxis, majority of the HIV and AIDS, 51.2% (n=66) reported they had adequate knowledge and 18.6% (n=24) had extensive knowledge. It was found that a significant percentage 28.7% (n=37) of the HIV and AIDS had inadequate knowledge on pre-exposure prophylaxis. Mean score was 1.87, standard deviation .722. Findings in this study showed that 52.7% (n=68) of HIV and AIDS had adequate knowledge and 16.3% (n=21) had extensive knowledge on post exposure prophylaxis. However, 29.5% (n=38) had inadequate knowledge. The mean score was 1.84, standard deviation was .705.

In this section HIV and AIDS were required to rate their knowledge on CD 4 cell count and viral load monitoring, 55.8% (n=72) had adequate knowledge and a few, 4.7% (n=6) had extensive knowledge. However, a significant number 37.2% (n=48) reported they had inadequate knowledge in monitoring of CD 4 cell count and the viral load. Mean score was 1.63 and standard deviation .613.

On the foundational knowledge on legal and ethical issues in HIV, most HIV and AIDS, 64.3% (n=83) reported they had adequate knowledge and 8.5% (n=11) had extensive knowledge. It was also found that 24.8% (n=32) had inadequate knowledge, and 2.3% (n=3) had no knowledge legal and ethical issues in HIV care. Mean score was 1.79, standard deviation .621.

In this study, it was found that 51.2% (n=66) had inadequate knowledge, and .4% (n=7) had no knowledge on laws, regulations and policies related to HIV and AIDS management (National and International). The results indicated that only 41.9% (n=54) had adequate knowledge on these policies, laws and regulations. Mean score was 1.40 and standard deviation was .618.

Furthermore, it was found that 50.4% (n=65) had inadequate knowledge on HIV and AIDS management protocols and guidelines. Only 45.0% (n=58) had adequate knowledge of the protocols and guidelines. Results indicated that 45.7% (n=59) had inadequate knowledge on the National and Provincial HIV and AIDS Programmes, and 49.6% (n=64) reported they had adequate knowledge. Mean was 1.52, standard deviation .588.

On the foundational knowledge regarding the standard precautions and HIV post exposure prophylaxis, majority, 57.4% (n=74) had adequate knowledge and 10.1% (n=13) had extensive knowledge, however, 31.8% (n=41) had inadequate knowledge. Mean was 1.77, standard deviation was .631. Results in this study indicated that majority of the HIV and AIDS, 58.1% (n=75) had adequate knowledge on what effects HIV has to the patient, family and community and 38.8% (n=50) had extensive knowledge. Mean was 2.36, standard deviation .542.

Most HIV and AIDS, 65.1% (n=84) had adequate knowledge, and a significant number, 30.2% (n=39) had extensive knowledge on HIV and AIDS care. A small percentage 4.7% (n=6) reported that they had inadequate foundational knowledge on HIV and AIDS care. Mean was 2.26, standard deviation .534. On the foundational knowledge on management of HIV and AIDS and TB, results of this study revealed that, 60.5% (n=78) reported they had adequate knowledge, and 35.7% (n=46) had extensive knowledge. Mean was 2.32, standard deviation .545. Most of the HIV and AIDS, 55.8% (n=72) had adequate knowledge and 35.7% (n=46) had extensive knowledge on IMCI. Study findings showed that a few, 8.5% (n=11) had inadequate knowledge. Mean was 2.27, standard deviation .609.

On the foundational knowledge on cultural sensitivity in HIV and AIDS management, findings of this study indicated that 57.4% (n=74) had adequate knowledge, and 14.7% (n=19) had extensive knowledge. However, 37.9% (n=36) had inadequate knowledge on cultural sensitivity in HIV and AIDS management. Mean was 1.87, standard deviation .642.

Results also showed that most HIV and AIDS, 68.2% (n=88) had adequate knowledge and 16.2% (n=16) had extensive knowledge on ARV's. However, 16.3% (n=21) had inadequate knowledge, and 3.1% (n=4) had no knowledge on ARV's. Mean was 1.90, standard deviation .635. Findings in this study showed that 51.2% (n=66) of the HIV and AIDS reported they had adequate knowledge on the NIMART. However, 42.6% (n=55) had inadequate knowledge, and 3.9% (n=5) participants had no foundational knowledge on the NIMART. Mean was 1.52, standard deviation .614. On the foundational knowledge on HAART, results of this study indicated that majority of the HIV and AIDS, 65.9% (n=85) reported had adequate knowledge, and 4.7% (n=6) had extensive knowledge on HAART. However, 26.4% (n=34) had inadequate knowledge, and 3.1% (n=4) had no knowledge on the Highly Active Antiretroviral Therapy. Mean was 1.72, standard deviation .599.



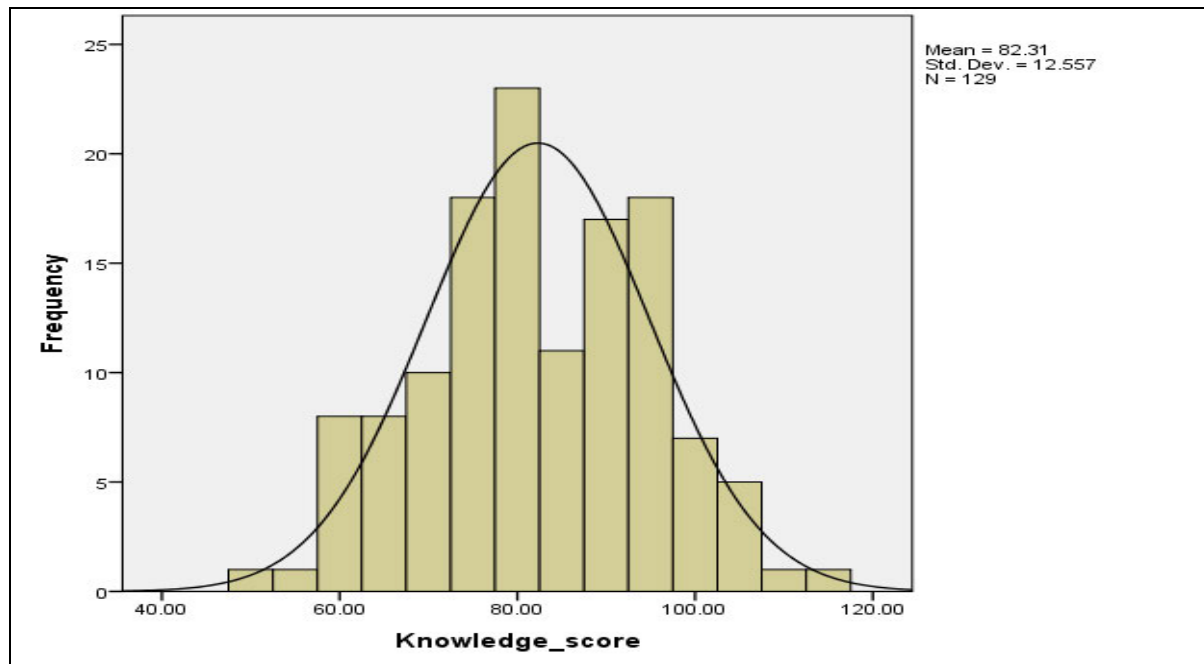
On the foundational knowledge on HIV Health promotion and preventative strategies, 62.8% (n=81) reported had adequate knowledge and 28.7% (n=37) had extensive knowledge. A small percentage 7.8% (n=10) had inadequate knowledge. Mean was 2.19, standard deviation .600. The study findings indicated that 49.6% (n=64) reported they had adequate knowledge and a few, 4.7% (n=6) had extensive knowledge on management of Antiretroviral-associated complications. However, a significant percentage, 44.2% (n=57) had inadequate knowledge. Mean was 1.57, standard deviation .609. The results indicated that 68.2% (n=88) of the HIV and AIDS had adequate knowledge, and 31.8% (n=41) reported had extensive knowledge on nutrition and HIV and AIDS. Mean was 2.32, standard deviation .467.

In findings displayed in table 4.4, most of the HIV and AIDS, 69% (n=89) had adequate knowledge, and 10.9% (n=14) reported they had extensive knowledge on the psychosocial aspects of HIV and AIDS in children, adolescents and adults. However, 20.2% (n=26) reported to have inadequate knowledge. Mean was 1.91, standard deviation .551.

On the foundational knowledge on initiation of Antiretroviral Therapy, findings of this study indicated that 60.5% (n=78) had adequate knowledge 11.6% (n=15) had extensive knowledge, however 24.8% (n=32) had inadequate knowledge, and 3.1% (n=4) had no knowledge on how to initiate the Antiretroviral Therapy. Mean was 1.81, standard deviation .674. It was found that a significant percentage of the HIV and AIDS, 48.8% (n=63) had inadequate knowledge, and 14% (n=18) had no knowledge on HIV and AIDS management in mentally ill patients. The results indicated that only 34.1% (n=44) had adequate knowledge on managing HIV and AIDS in mentally ill patients. Mean was 1.26, standard deviation .734.

### **Overall knowledge of the participants on HIV and AIDS**

To calculate the overall score of knowledge about HIV and AIDS, 41 items were computed, and the responses ranged from 0=none, 1=inadequate, 2=adequate, 3= extensive. The higher the score, the more HIV and AIDS were knowledgeable about HIV and AIDS. Minimum knowledge score was 50 and the maximum 113. The mean was 82.31 with a standard deviation of 12.557. The median was 82.000, and the mode was 93 (Figure 4: 5)



**Figure 4.5: Overall knowledge of participants on HIV and AIDS**

Overall, the results indicated that 50.4% (n=65) participants had sufficient knowledge about HIV and AIDS, whereas 49.6% (n=64) had insufficient knowledge. Mean score was 82.31, standard deviation 12.557 (Figure: 4.5).

#### **4.6.2 Competencies in health care provision skills**

HIV and AIDS were asked to rate how they perceived their various health care provision skills that included the curative skills in HIV and AIDS management. The health care provision skills had fifteen (15) items. The rating scale 1 to 5 was used. 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform most activities unaided, 4=very good for performing all curative activities independently and applying related knowledge and required attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

Study findings displayed in Table 4.5, indicated that, 36.4% (n=47) had good skills 34.1% (n=44) had very good skills 5.4% (n=7), and 24% (n=31) reported that they had excellent health provision skills in obtaining adequate and relevant history from the client and could teach others. Mean was 3.77, standard deviation .880. This study findings showed that 35.7% (n=46) had good

skills, 34.1% (n=44) rated their skills as very good. Study results also showed that 24% (n=31) had excellent skills in identifying and interpreting verbal and non-verbal cues from the patient and able to teach others. Mean was 3.64, standard deviation .935.

On curative skills in assessing client's needs, 40.3% (n=52) had good skills, 35.7% (n=46) had very good skills 9.3% (n=12) and 14.7% (n=19) reported they had excellent skills. However, a small percentage, 9.3% (n=12) had insufficient knowledge. Mean was 3.56, standard deviation .856. Findings in this study indicated that 38% (n=49) had good skills, 37.2% (n=48) had very good skills, and 15.5% (n=20) had excellent skills in defining client's problems. Mean was 3.59, standard deviation.863.

**Table 4.5: The participants' health care provision knowledge**

Therapeutic knowledge	Poor	Fair	Good	Very good	Excellent	Mean	Std.
Obtain adequate and relevant history from the client	(0)0%	(7)5.4%	(47)36.4%	(44)34.1%	(31)24.0%	3.77	.880
Identify and interpret verbal and non-verbal cues from the patient	(0)0%	(14)10.9%	(46)35.7%	(42)32.6%	(27)20.9%	3.64	.935
Assess client's needs	(0)0%	(12)9.3%	(52)40.3%	(46)35.7%	(19)14.7%	3.56	.856
Define the client's problem	(0)0%	(12)9.3%	(49)38%	(48)37.2%	(20)15.5%	3.59	.863
Formulate the nursing care plan	(0)0%	(8)6.2%	(41)31.8%	(56)43.4%	(24)18.6%	3.74	.832
Implement the best possible plan	(0)0%	(13)10.1%	(64)49.6%	(39)30.2%	(13)10.1%	3.40	.805
Evaluate effects of the intervention	(0)0%	(16)12.4%	(57)44.2%	(43)33.3%	(13)10.1%	3.41	.835
Do rapid test of HIV status	(0)0%	(3)2.3%	(19)14.2%	(35)27.1%	(72)55.8%	4.36	.819
Interpret rapid test results	(0)0%	(3)2.3%	(19)14.7%	(30)23.3%	(77)59.7%	4.40	.825
Interpret CD 4 cell count and viral load results	(6)4.7%	(23)17.8%	(37)28.7%	(34)26.4%	(29)22.5%	3.44	1.159
Prescribe antiretroviral correctly	(22)17.1%	(50)38.8%	(31)24%	(17)13.2%	(9)7%	2.54	1.132
Apply knowledge of drug interaction when prescribing and administering antiretroviral	(16)12.4%	(44)34.1%	(37)28.7%	(24)18.6%	(8)6.2%	2.72	1.097
Administer antiretroviral correctly, according to legislation, scope of practice and doctor's prescription	(8)6.2%	(34)26.4%	(37)28.7%	(33)25.6%	(17)13.2%	3.13	1.135
Identify medication adverse reactions and take appropriate remedial actions	(7)5.4%	(28)21.7%	(60)46.5%	(20)15.5%	(14)10.9%	3.05	1.014

Recognize treatment failure and refer appropriately	(6)4.7%	(40)31.0%	(37)28.7%	(36)27.9%	(10)7.8%	3.03	1.045
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In this study findings indicated that 43.4% (n=56) had very good skills, 31.8% (n=41) had good skills, and 18.6% (n=24) reported they had excellent skills in formulating the nursing care plan. Mean was 3.74, standard deviation .832. Findings in this study showed that majority of the HIV and AIDS, 49.6% (n=64) had good curative skills, 30.2% (n=39) had very good skills and a significant 10.1% (n=13) reported they had less skills and knowledge in implementing the best possible plan in nursing people living with HIV and AIDS. Mean was 3.40, standard deviation .805. Results in this study indicated that, 44.2% (n=57) had good skills, 33.3% (n=43) had very good skills and 10.1% (n=13) reported they had excellent curative skills in evaluating effects of the nursing intervention. Mean was 3.41, standard deviation .835. Majority of the HIV and AIDS, 55.8% (n=72) rated that they had excellent skills, 27.1% (n=35) indicated to be very good and, 14.2% (n=19) skills reported to be good in doing a rapid test to diagnose HIV. Mean was 4.36, standard deviation .819. In findings displayed in table 4.5, revealed that 59.7% (n=77) reported they had excellent skills, 23.3% (n=30) had very good skills and knowledge and 14.7% (n=19) had good skills in interpreting rapid test results. Mean was 4.40, standard deviation .825.

In this study, 28.7% (n=37) had good skills, 26.4% (n=34) had very good skills and 22.9% (n=29) reported they had excellent skills in interpreting CD4 cell count and viral load results. However, a significant percentage, 17.8% (n=23) reported had insufficient skills. Mean was 3.44, standard deviation was 1.159. It was also found that 17.1% (n=22) reported they had no required knowledge, skills and attitude, 38.8% (n=50) had some knowledge, 24% (n=31) reported could prescribe Antiretroviral correctly, 13.2% (n=17) had very good skills. They could prescribe antiretroviral independently applying the relevant knowledge and with the required attitude. A few, 7% (n=9) reported they had excellent skills, knowledge and attitude and could impart such to others. Mean was 2.54, standard deviation 1.132.

Findings in this study revealed that a significant percentage 34.1% (n=44) had some knowledge. However, 12.4% (n=16) had no required knowledge Study findings also revealed that skills and attitude that needed to be applied regarding drug interaction when they prescribed and

administered antiretroviral, 28.7% (n=37) had good knowledge, 18.6% (n=24) their knowledge was reported to be very good in applying knowledge of drug interaction when prescribing antiretroviral. Mean was 2.72, standard deviation 1.097.

Study findings indicated that 28.7% (n=37) rated their knowledge as good, however, 26.4% (n=34) had insufficient knowledge. It was also found that 25.6% (n=33) reported they had good knowledge could independently and safely perform administration of antiretroviral. Mean was 3.13, standard deviation 1.135. A significant percentage, 46.5% (n=60) of the HIV and AIDS reported they had good knowledge and, 15.5% (n=20) had very good knowledge. However, 21.7% (n=28) had insufficient knowledge to identify adverse reactions and implement remedial actions. Mean was 3.05, standard deviation 1.014. Results in this study indicated that, 28.7% (n=37) rated had good knowledge and 27.9% (n=36) their knowledge was very good on recognizing treatment failure and appropriate referrals However, 31% (n=40) had insufficient knowledge. Mean was 3.03, standard deviation 1.045.

To calculate the overall score of health promotion/curative competencies of HIV and AIDS, 15 items were computed. Responses ranged from 1-5, 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform most activities unaided, 4=very good for performing all curative activities independently and applying related knowledge and required attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

The competence scores were first grouped to clarify the difference in competences as opposed to incompetence. Total score from 0- 44.9 were incompetent and 45-75 competent. (Table 4.6).

### **Cross tabulation of the age of the participants and their health care provision competence levels**

To calculate competencies of participants in relation to their age, cross tabulation was done. The researcher grouped ages: 20-25 years, 26-30 years and 31-38 years. Findings were, ages 20-25 years 71.3% (n=80) were competent, 26-30 years, 51.4% also competent and 31-38 years

58.3% (n=7) were competent as well. These findings indicate that the youngest group 20-25 years were the most competent than the older participants. (Table 4.6) The Pearson chi square test was performed ( $\chi^2 = 24.476$ , d. f=16 and  $p=.080$ ), insignificant relationship was found between age of the participants and their health care provision competency levels.

#### **Cross tabulation of the health care provision competencies and the participants` level of training**

A cross tabulation was done to establish a correlation between level of training and the level of competence Findings revealed that most third years, 70% (n=49) were competent whereas 83.1% (n=49) fourth years were also competent. These results indicated that the level of competence increases with the level of training (Table 4.6). To calculate correlation of the level of training and competence, the Pearson chi square test was done, no significant association was found ( $\chi^2=2.987$ , d.f=2 and  $p= 0.84$ ).

**Table 4.6: Correlation of health promotion/Curative competencies and the demographics of the participants and the level of training of the HIV and AIDS**

<b>Demographic data</b>	<b>Competent</b>		<b>Incompetent</b>	
	<b>Freq.</b>	<b>%</b>	<b>Freq.</b>	<b>%</b>
20-25 years	80	71.3	23	28.6
26-30years	11	51.4	6	31.9
31-38 years	7	58.3	2	14.6
<b>Total</b>	<b>98</b>		<b>31</b>	
<b>Year of training</b>				
Third	49	70	21	30
Fourth	49	83.1	10	16.9
<b>Total</b>	<b>98</b>		<b>31</b>	

#### **4.6.3 Competencies in Health promotion and health education**

In this part of the study, participants responded on eight (8) competencies regarding health promotion and health education. The Likert scale 1 to 5 was used. 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform

most activities unaided, 4=very good for performing all curative activities independently and applying related knowledge and required attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

This study results indicated that, majority of the HIV and AIDS, 45.7% (n=59) were very good and 30.5% (n=39) were good in identifying needs of clients. Mean was 3.78, standard deviation .812. In this study findings revealed that 43.4% (n=56) competence was rated as good and 37.2% (n=48) were rated as very good only. Mean was 3.52, standard deviation .821.

Reflected in Table 4.7, this study indicated that 36.4% (n=47) had very good knowledge and 36.4 (n=47) reported good knowledge. A significant percentage, 19.4% (n=25) were rated as having excellent competencies in using relevant teaching strategies. Mean was 3.67, standard deviation .896. Results in this study showed that, 41.9% (n=54) rated their competence as good and 33.3% (n=43) perceived their competence as very good. Findings also showed that 17.1% (n=22) had excellent competencies in using of teaching aids. Mean was 3.60, standard deviation .862.

**Table 4.7: Participants` health promotion and health education competencies**

<b>Health promotion and health education competencies</b>	<b>Poor</b>	<b>Fair</b>	<b>Good</b>	<b>Very good</b>	<b>Excellent</b>	<b>Mean</b>	<b>Std.</b>
Identify learning needs of clients	(0)0%	(7)5.4%	(39)30.5%	(59)45.7%	(24)18.6%	3.78	.812
Setting the learning outcomes for teaching	(1)8%	(9)7%	(56)43.4%	(48)37.2%	(15)11.6%	3.52	.821
Use the relevant teaching strategies e.g. discussions, presentations, demonstrations	(1).8%	(9)7%	(47)36.4%	(47)36.4%	((25)19.4%	3.67	.896
Use the available and relevant teaching aids creatively to enhance teaching and learning	(0)0%	(10)7.8%	(54)41.9%	(43)33.3%	(22)17.1%	3.60	.862
Teach patient and relatives on the patient`s health needs	(0)0%	(5)3.9%	(46)35.7%	(50)38.8%	(28)21.7%	3.78	.829
Teach student nurses and other health care practitioners HIV care	(1).8%	(9)7%	(53)41.1%	(41)31.8%	(25)19.4%	3.62	.903



Provide HIV awareness to the community irrespective of HIV status	(2)1.6%	(12)9.3%	(46)35.7%	(45)34.9%	(24)18.6%	3.60	.948
Evaluate success of learning	(2)1.6%	(11)8.5%	(52)40.3%	(42)32.6%	(22)17.1%	3.55	.927

Results of this study indicated that 38.8% (n=50) were rated as having good level of competence and 35.7% (n=46) had good teaching skills. However, 21.7% (n=28) perceived their competence level as being excellent in teaching patients. Mean was 3.78 standard deviation .829. Results in this section indicated that, below average percentage of the HIV and AIDS, 41.1% (n=53) rated their competence level as good, 31.8% (n=41) their competence was rated as very good and could teach students and the health care professionals HIV care. Mean was 3.62, standard deviation .903.

On the Provision of HIV awareness to the community, it was found 35.7% (n=46) rated their competence level as good and 34.9% (n=45) were rated as very good. Mean was 3.60, standard deviation .948. Results in this section revealed that 40.3% (n=52) competence was rated as good, 32.6% (n=42) was very good, Study findings also showed that and 17.1% (n=22) competence level was excellent in evaluating success of leaning. Mean was 3.55, standard deviation .927.

### **Cross tabulation of health promotion competencies and the participants` age groups**

To calculate the overall competencies of the participants in relation to age, cross tabulation was done. The researcher grouped ages: 20-25years, 26-30 and 31-38 years together. Findings were, ages 20-25, 84.7% (n=91), ages 26-30, 55% (n=10) and 31-38, 100% (n=10) (Table 4.8). These findings indicate that the eldest group 31-31 years was leading in high level of competence, followed by the youngest 20-25 years. The Pearson chi square test was done and was insignificant, no association was found,  $\chi^2=29.633$ , d. f=16 and p=.020.

### **Cross tabulation of health promotion competencies and the level of training**

Cross tabulation was done to establish association between year of training and competence in health promotion. Findings were out of 129 participants, 80% of third years were competent and 91.5% (n=54) fourth years were competent. (Table 4.8).



The Pearson chi square test was done to establish the relationship between year of training and competence in health promotion. Results showed non-significance,  $\chi^2=3.386$ , d. f=1 and  $p=.066$ . These findings indicate that the proportion of competent third years is not significantly different from the proportion of the fourth years that are competent in health promotion and education.

**Table 4.8: Correlation of Health promotion competencies and the demographics of the participants**

<b>Demographic data</b>	<b>Competent</b>		<b>Incompetent</b>	
<b><u>Age groups</u></b>	<b>Freq.</b>	<b>%</b>	<b>Freq.</b>	<b>%</b>
20-25 years	91	84.7	11	15.2
26-30years	10	55	7	45
31-38 years	10	100	0	0
<b>Total</b>	<b>111</b>		<b>18</b>	
<b><u>Year of Training</u></b>				
Third	56	80	14	20
Fourth	54	91.5	5	8.5
<b>Total</b>	<b>110</b>		<b>19</b>	

#### **4.6.4 Competencies in leadership and management in HIV and AIDS**

In this section, participants responded to eight (8) items. Responses ranged from 1-5 (Likert scale). 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform most activities unaided, 4=very good for performing all curative activities independently and applying related knowledge and required attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

Findings in this study as shown in Table 4.9, indicated that 38.8% (n=50) had good knowledge and 34.1% (n=44) had very good competence levels and knowledge and attitude to influence and lead others in providing HIV and AIDS care. However, 18.6% (n=24) had insufficient knowledge to lead and influence other health care professionals in providing HIV and AIDS care. Mean was 3.26, standard deviation .897. Findings in this study revealed that 40.3% (n=52) had very good skills, 34.1% (n=44) had good skills and 7.8% (n=10) reported an excellent level of performance in organizing resources for healthcare provision. Mean was 3.35, standard deviation .932.

Results in this study showed that, 41.9% (n=54) had very good competence levels and 31.8% (n=41) was rated as good in creating a safe work environment for the health care team and clients, results showed that mean was 3.56, standard deviation .918. Study findings in this

section revealed that 38% (n=49) reported they had good competence levels and 24.8% (n=32) had very good conflict management skills, knowledge and attitude. However, a significant percentage, 20.9% (n=27) had insufficient knowledge in preventing and managing conflicts effectively. Mean was 3.15, standard deviation 1.047.

In this study, it was found that 28.7% (n=37) had good knowledge and skills, 27.9% (n=36) had very good skills and 26.4% (n=34) had insufficient knowledge in delegating HIV and AIDS care tasks to others in accordance with the scope of practice. Mean was 3.14, standard deviation 1.012. Results in this part indicated that, 31% (n=40) had good skills and knowledge, 25.6% (n=33) were rated as very good on supervision. However, 26.4% (n=34) had insufficient knowledge on supervision to ensure HIV and AIDS care is rendered in accordance with policies, protocols and procedures.

This study findings indicated that 31% (n=40) had good skills and knowledge and 28.7% (n=37) were rated as very good in maintaining accountability for care rendered to clients. Mean was 3.19, standard deviation 1.116. Findings in this study showed that, 27.9% (n=36) had very good skills in record keeping, 27.1% (n=35) had good knowledge and skills and 24% (n=31) were rated as excellent. However, 18.6% (n=24) had insufficient knowledge in keeping of records. Mean was 3.53, standard deviation 1.119.

**Table 4.9: Participants' leadership and management in HIV and AIDS competencies**

Leadership and management in HIV and AIDS	Poor	Fair	Good	Very good	Excellent	Mean	Std.
1.Influence and lead others in provision of HIV and AIDS care	(2)1.6%	(24)18%	(50)38.8%	(44)34.1%	(9)7%	3.26	.897
2.Create a safe work environment for the health care team and clients	(2)1.6%	(14)10.9%	(41)31.8%	(54)41.9%	(18)14%	3.56	.918
3.Organize resources to be used during the provision of HIV and AIDS care	(4)3.1%	(19)14.7%	(44)34.1%	(52)40.3%	(10)7.8%	3.35	.932
4.Delegate HIV and AIDS care tasks to others of according to scope of practice	(7)5.4%	(34)26.4%	(37)28.7%	(36)27.9%	(15)11.6%	3.14	1.102
5.Prevent and manage conflicts effectively	(7)5.4%	(27)20.9%	(49)38%	(32)24.8%	(14)10.9%	3.15	1.047
6.Supervise others to ensure HIV and AIDS care is according to the policies,	(14)10.9%	(34)26.4%	(40)31%	(33)25.6%	(8)6.2%	2.90	1.096

protocols and procedures							
7.Maintain accountability for care rendered to clients	(9)7%	(27)20.9%	(40)31%	(37)28.7%	(16)12.4%	3.19	1.116
8.Keep accurate records e.g. (VCT, PEP, pre-and post-test counselling, Rapid tests statistics	(3)2.3%	(24)18.6%	(35)27.1%	(36)27.9%	(31)24%	3.53	1.119

### **Cross tabulation of leadership competencies and the age groups of the participants**

To establish an association between age of the HIV and AIDS and level of competence in leadership, cross tabulation was done. The researcher grouped ages. Findings were ages 20-25years, 57.5% (n=63) were competent and 42.5% (n=40) not competent in leadership skills. Also, ages 26-30years, 70% (n=12) and 31-38 years, 75% (n=7) were both groups competent in leadership. These results reveal that in this study, there was an association between age and leadership skills acquisition. The older participants reported possession of more leadership skills, followed by 26-30 years than the younger student nurses did, 20-25 years (Table 4.10).

A Pearson chi square test was done to establish the association between the ages of the participants and leadership competencies. No association was established, ( $\chi^2=14.465$ , d. f= 16 and  $p= .564$ ). It indicates that there is a relationship between age and leadership competencies. The older the participants, the better are the leadership competencies acquired.

### **Cross tabulation of the leadership competencies and the level of training**

Cross tabulation was performed to establish relationship between the level of training and leadership competencies. Results revealed that 58.6% (n=41) participants at third year had the required leadership competencies and 41.1% (n=29) did not. Findings also showed that 69.5% (n=41) participants at fourth year had the required leadership competences and 30.5% (n=18) did not have required competencies. (Table 4.10)

A chi square test was performed to establish the association between level of training of the HIV and AIDS and their leadership competencies. No association was established ( $\chi^2= 1.648$ ), d. f=1 and  $p=.199$ . This indicates there is a no relationship between the two variables.

#### 4. 10: Correlation of leadership competencies and the demographics of the participants

Demographic data	Competent		Incompetent	
<u>Age groups</u>	Freq.	%	Freq.	%
20-25 years	63	57.5	40	42.5
26-30years	12	70	5	30
31-38 years	7	75	2	25
<b>Total</b>	<b>82</b>		<b>47</b>	
<b>Year of Training</b>				
Third	41	58.6	29	41.4
Fourth	41	69.5	18	30.5
<b>Total</b>	<b>82</b>		<b>47</b>	

#### 4.6.5 Competencies in ethical issues in HIV and AIDS

Participants responded to four competencies in ethical issues in HIV and AIDS. Responses ranged from 1-5 (Likert scale). 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform most activities unaided, 4=very good for performing all curative activities independently and applying related knowledge and required attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

Findings in this study indicated that 31.8% (n=41) rated had good skills, 28.7% (n=37) had very good knowledge and 22.5% (n=29) had excellent skills in explaining rights related to HIV and AIDS management to the patient. However, a small percentage 14% (n=14) of the HIV and AIDS had insufficient knowledge. Mean was 3.53, standard deviation 1.083. Findings of this study also indicated that 35.7% (n=46) had good knowledge, skills and relevant attitude and 30.2% (n=39) had very good skills in managing ethical dilemmas related to HIV and AIDS management. Mean was 3.29, standard deviation 1.040.

Research findings in this study showed that 48.8% (n=63) reported had excellent skills, 24.8% (n=32) had very good skills and 23.3% (n=30) had good knowledge, skills and attitude and could

keep patient's history and HIV status in confidence. Mean was 4.19 standard deviation .902. It was also found that 31.8% (n=41) had good knowledge, skills and attitude, 31% (n=40) the skills were rated as very good and 25.6% (n=33) reported they had excellent knowledge in the observing of ethics principles when interacting with colleagues about HIV and AIDS health care users. Mean was 3.71, standard deviation .980. (Table 4.11)

**Table 4.11: Participants' competencies on ethical issues in HIV and AIDS care**

Ethical issues in HIV and AIDS	Poor	Fair	Good	Very good	Excellent	Mean	Std.
1.Explaining to the patient their rights related to HIV and AIDS management	(4)3.1%	(18)14%	(41)31.8%	(37)28.7%	(29)22.5%	3.53	1.083
2.Manage ethical dilemmas related to HIV and AIDS management	(6)4.7%	(22)17.1%	(46)35.7%	(39)30.2%	(16)12.4%	3.29	1.040
3.Keep in confidence all history given, patient's HIV status	(0)0%	(4)3.1%	(30)23.3%	(32)24.8%	(63)48.8%	4.19	.902
4.Observe ethics principles when communicating with colleagues regarding users of HIV and AIDS /clients/patients	(0)0%	(15)11.6%	(41)31.8%	(40)31%	(33)25.6%	3.71	.980

#### **Cross tabulation of ethical competencies and the age groups**

Cross tabulation was done to establish an association between age groups and ethical competencies of the participants. Findings were age group 20-25 years, 79.6% (n=85) were competent and 26-30 years, 86.6% (n=14) were also competent. Age group 31-38 years had 100% (n=9) in ethical competencies. Findings in this study revealed that the older the age group the more competent they were reported in ethical competencies. The Pearson chi square test was done, results revealed no significant relationship between the two variables, ( $\chi^2=10.030$ , d. f=16 and  $p=.865$ ) (Table 4.12).

#### **Cross tabulation of HIV related ethical competencies and the level of training**

A cross tabulation was done to establish relationship between the level of training and competencies in ethical issues. An association was established. Results showed that 81.4% and 86.4% third and fourth year student nurses had ethical competencies respectively. (Table: 4.12)

A chi square test was performed to establish relationship between level of training and ethical competences. No association was established ( $\chi^2=.590$ , d. f=1, and  $p=.442$ ).

**Table 4.12 Correlation of the ethical competencies and the demographics of the participants**

Demographic data	Competent		Incompetent	
Age groups	Freq.	%	Freq.	%
20-25 years	85	79.6	18	20.3
26-30years	14	86.6	3	13.3
31-38 years	9	100	0	0
<b>Total</b>	<b>108</b>		<b>21</b>	
Year of training				
Third	57	81.4	13	18.6
Fourth	51	86.4	8	13.6
<b>Total</b>	<b>108</b>		<b>21</b>	

#### **4.6.6 Competencies in Research in HIV and AIDS**

Participants were asked to respond to five (5) competencies about research in HIV and AIDS. The Likert scale was used for responses, 1= poor for having no knowledge or skill, 2=fair for some knowledge or experience, 3= good for being able to perform most activities unaided, 4=very good for performing all research related activities independently and applying related knowledge and attitude and 5=excellent for having knowledge, skills attitude and able to teach others.

It was also found out that 41.1% (n=53) reported had good knowledge and 25.6% (n=33), had very good skills. However, a significant percentage, 26.4% (n=34) had insufficient knowledge on the identification of researchable HIV and AIDS management problems. Mean was 2.95, standard deviation .895. Research findings in this study also showed that, 35.7% (=46) had good knowledge and skills and 16.3% (n=21) had very good research skills. However, 30.2% (n=39) had insufficient knowledge and 14.7% (n=19) had no required knowledge to initiate research in HIV and AIDS unassisted. Mean was 2.63, standard deviation 1.024.

In this study, findings revealed that, 45% (n=58) had good skills and knowledge and 18.6% (n=24) had very good skills. However, 22.5% (n=29) had insufficient knowledge and 9.3% (n=12) reported had no required knowledge in reading and analysing HIV-related research. Mean



was 2.87, standard deviation .979. It was found that, 42.6% (n=55) had good knowledge and 14.7% (n=19) had very good skills. Yet a significant percentage, 31% (n=40) had insufficient knowledge and 9.3% (n=12) had no necessary knowledge skills in determining applicability of research findings to HIV management. This study findings further indicated that and 34.9% (n=45) reported had good skills and knowledge and 26.4% (n=34) had very good knowledge. However, 25.6% (n=33) had insufficient knowledge and 8.5% (n=11) had no essential knowledge to use research findings in HIV and AIDS care. Mean was 2.93, standard deviation 1.025.

**Table 4.13: Participants' competencies on research in HIV and AIDS**

Research in HIV AND AIDS	Poor	Fair	Good	Very good	Excellent	Mode	Std.
1. Identify researchable HIV management problems	(6)4.7%	(34)26.4%	(53)41.1%	(33)25.6%	(3)2.3%	2.95	.895
2. Initiate research in HIV and AIDS management	(19)14.7%	(39)30.2%	(46)35.7%	(21)16.3%	(4)3.1%	2.63	1.024
3. Read and analyse HIV-related research	(12)9.3%	(29)22.5%	(58)45%	(24)18.6%	(6)4.7%	2.87	.979
4. Determine applicability of research findings to HIV management	(12)9.3%	(40)31%	(55)42.6%	(19)14.7%	(3)2.3%	2.70	.915
5. Use research findings in the management of HIV and AIDS	(11)8. %	(33)25.6%	(45)34.9%	(34)26.4%	(6)4.7%	2.93	1.025

#### **Cross tabulation of the research competencies and the age groups**

Cross tabulation was done to establish the relationship between age groups and research competencies. The researcher grouped participants into 3 age groups. Findings were, out 99 participants in age group 20-25 years, only 47.3% (n=46) were competent. Group 26-30 years participants, a slightly average of 51.6% (n=10) were competent and 31-38 years, most participants, 83.3% (n=7) reported had research competencies. (Table 4.14). The Chi square test was done no significance ( $\chi^2=16.752$ , d. f=16 and  $p=.402$ ).

#### **Cross tabulation of research competencies and the level of training**

Cross tabulation was done to establish an association between level of training and research competencies. No association was found; 50% of third year students had sufficient and

insufficient research competencies respectively while 50.8% of fourth year students had sufficient research competencies. (Table 4.14)

A chi square was done to establish an association between the HIV and AIDS' level of training. No significance was found, ( $\chi^2=.009$ , d. f=1 and  $p=.924$ ).

**Table 4. 14: Correlation of the research competencies and the demographics of the participants**

Demographic data	Competent		Incompetent	
Age groups	Freq.	%	Freq.	%
20-25 years	46	47.3	53	52.7
26-30years	10	51.6	7	48.3
31-38 years	7	83.3	2	16.6
<b>Total</b>	<b>63</b>		<b>62</b>	
Year of training				
Third	35	50	35	50
Fourth	30	50.8	29	49.2
<b>Total</b>	<b>65</b>		<b>64</b>	

#### **4.7 Personal and Professional Development in HIV and AIDS management**

Findings from this study report on the various sources of knowledge that the HIV and AIDS were accessing for their personal and professional development. They were asked to respond to six (6) sources of knowledge. A Likert scale 1-4 was used. 1= Not at all, 2= Less frequently, 3= frequently and 4= Most frequently.

In this study, findings showed that, 41.1% (n=53) frequently used textbooks and 42.6% (n=55) had consulted textbooks less frequently in accessing information on HIV care. Mean was 2.53, standard deviation .761. Results further indicated that 44.2% (n=57) had used journals less frequently and 20.9% (n=27) had never used journals. However only 30.2% (n=39) had frequently used journals for their development on HIV care. Mean was 2.19, standard deviation .817.

Research findings of this study showed that 42.6% (n=55) had frequently used internet and 31.8% (n=41) had used internet and intranet most frequently. Yet 7.8% (n=10) had never used



both internet and intranet to get information for their development. Mean was 2.98, standard deviation .901. Study findings indicated that, 45% (n=58) had attended in-service less frequently and 38% (n=49) had never attended any form of in-service. Only 10.9% (n=14) had frequently accessed their developmental information from workshops, updates, seminars and or symposium. Mean was 1.85, standard deviation .849.

It was found that, 36.4% (n=47) had frequently consulted other health care professionals and 23.3% (n=30) reported they had most frequently. However, 37.9% (n=49) had less frequently turned to other HCP's for information to aid their development. Mean was 2.78, standard deviation .857. Results of this study also revealed that 45.7% (n=59) had used policies and protocols less frequently, 24% (n=31) had never consulted policies. Only 23.3% (n=30) reported had consulted policies and protocols to enhance their development. Mean was 2.13 standard deviation .860.

**Table 4.15: Participants sources of knowledge for development**

Sources of knowledge	Not at all	Less frequently	Frequently	Most frequently %	Mean	Std.
1. Reading textbooks	(9)7%	(55)42.6%	(53)41.1%	(12)9.3%	2.53	.761
2. Reading journal articles	(27)20.9%	(57)44.2%	(39)30.2%	(6)4.7%	2.19	.817
3. Internet/intranet	(10)7.8%	(23)17.8%	(55)42.6%	(41)31.8%	2.98	.901
4. Consult other health care professionals	(6)4.7%	(49)37.9%	(47)36.4%	(30)23.3%	2.78	.857
5. Consult policies and protocols	(31)24%	(59)45.7%	(30)23.3%	(9)7%	2.13	.860
6. Attend in-service (workshops, updates, seminars, symposium)	(49)38%	(58)45%	(14)10.9%	(8)6.2%	1.85	.849

### **Cross tabulation of access of information and age groups of the HIV and AIDS**

Cross tabulation was done to establish a relationship between age of the HIV and AIDS and access of information. Ages of the HIV and AIDS were first grouped into three groups. Findings were, 20-25 years, only 7.9% (n=12) had access to information, most of this age group, 92% (n=91) had no access. Also 26-30 years, 86.6% (n=15) had no access as well as 80% of 31-38

years, had no access. (Table 4.16). These findings showed no significance ( $\chi^2=20.536$ , d. f=16 and  $p=.197$ ). These findings indicate that there is no relationship between the variables.

### **Cross tabulation of access of information and the level of training**

To establish a relationship between year of training and the participants' skill in accessing information, cross tabulation was done, no significant association between the two variables. (Table 4.16). A chi square was performed, non-significant ( $\chi^2=.006$ , d. f=1 and  $p=.939$ ).

**Table 4.16: Correlation of accessing of information competencies and the demographics of the participants**

<b>Demographic data</b>	<b>Competent</b>		<b>Incompetent</b>	
<b>Age groups</b>	<b>Freq.</b>	<b>%</b>	<b>Freq.</b>	<b>%</b>
20-25 years	12	7.9	91	92
26-30years	2	13.3	15	86.6
31-38 years	2	20	7	80
<b>Total</b>	<b>16</b>		<b>113</b>	
<b>Year of training</b>				
Third	8	11.4	62	88.6
Fourth	7	11.9	52	88.1
<b>Total</b>	<b>15</b>		<b>114</b>	

### **4.8 Student nurses' views, comments and concerns about their preparation on HIV and AIDS in the nursing programme.**

Data collected had closed and open-ended questions. This section presents analysis of data from the latter. HIV and AIDS were asked to give views about their preparation on HIV and AIDS management both the theory and the practical in the nursing programme they underwent. They were also requested to identify the strengths of the programme and what may need to be improved. They were also asked for any comments they wished to express. A majority wrote their views and a few added comments. Some were mixing views and comments. The researcher noted the fact that the two are interrelated and analysed together.

In analysing data, researcher examined written words of the participants. The bulk of data was reduced in preparation for reporting (Polit and Beck 2012, 556; Grove, Burns and Gray 2013, 281). Data not in line with the purpose of the study and research objectives was eliminated. Data with similar views and comments were grouped together for themes and subthemes to emerge.

**Table 4.17: Themes, subthemes and percentages of subthemes**

Themes	Subthemes	%
1.Strengths of the training programme	1.Quality of the training programme	15.5
2.Theory and practical component	1. Duration for Clinical placement	18.6
	2. Weight of HIV and AIDS knowledge content	26.3
3.Areas for improvement	1. Need for updates and workshops	17
	2.Integrate HIV and AIDS care from 1 <sup>st</sup> year	16.2

Themes that emerged from data from open- ended questions were three with five subthemes all together. Themes identified were, strengths of the training programme, views on theory and practical component and areas for improvement. Subthemes were quality of the training programme, duration for clinical placements, weight of HIV and AIDS knowledge content, need for updates and workshops as well as the integration of HIV and AIDS care from 1<sup>st</sup> to 4<sup>th</sup> year (Table 4.17).

#### **4.8.1 Themes and subthemes that emerged from data collected from open-ended questions**

##### **Theme 1: Strength of the training programme**

Data revealed one subtheme, the good quality of the training programme as the strength of the training programme the participants were studying. The subtheme will be discussed further below.

##### **Subtheme 1: Quality of the training programme**

Results showed that 15.5% (n=20) participants commented training they received was of good quality. Some participants indicated they were satisfied with HIV and AIDS care that was

offered in the training programme. This is strength for the educational programme under study as they indicated it was sufficient and informative and prepared them to integrate theory learnt into practice in the clinical settings. According to participants, having a facilitator who was an expert in the field of HIV was an advantage in their HIV and AIDS workshop. Please see excerpts below that support this.

*“We had the opportunity of having an outsider from NEPI who took us through on a one week workshop regarding HIV and AIDS. It was very informative and we got a broader understanding of the epidemic as she was knowledgeable” (p 7)*

*“Theory on HIV and AIDS management was proper, everything was there and well explained. Nothing needs to be improved” (p 19)*

*“Theoretically we were well prepared at college regarding HIV and AIDS. We were also exposed to it practically also giving health education and managing patients with HIV and AIDS” (p 60)*

## **Theme 2: Theory and practical component**

Two subthemes emerged from data collected from the participants regarding the theory and practical component. Subthemes are the duration of clinical placements and the weight of HIV and AIDS knowledge content. They are reported below.

### **Subtheme 1: Clinical placement duration**

Evident from data analysis is that 18.6% (n=24) participants were satisfied with theory on HIV care they received in their four-year programme. However, they commented that practice was insufficient for them to correlate theory to practice. During the one-week workshop, they learnt theory and the only practice they got was counselling sessions they did on each other in class. Going to HIV clinics to do counselling was not done on real patients because the available time was short and at least one or two student nurses could be allowed with each patient who gives consent. In the clinical settings, they relied on qualified nurses and doctors to guide and teach them, until lecturers come for clinical accompaniment.

The participants' concerns were for insufficient time allocated for clinical practice and they reported they benefitted a lot in learning they had in the clinical settings. Excerpts below explain this further.

*"We were prepared well theoretically however we need more practice to initiate, issue and monitor ARV's." (Participant (p) (60)*

*" Provide more time for students in practical area such as clinics where HIV and AIDS is thoroughly dealt with" (p 55)*

*" I feel most of learning on HIV and AIDS; I got from doctors and professional nurses in the clinical areas" (p 42)*

*"I personally feel that it is in the practical areas where one really learns a lot and gain knowledge and better understanding of HIV and AIDS and other illnesses" (p 122)*

*"In theory, we get lot of information, but in practice we get satisfactory exposure since we don't get enough time to practice in the clinical area" (p33)*

*"Students should be allocated in the HIV and AIDS wards / clinics as there is little exposure in the medical and surgical wards" (p78)*

## **Subtheme 2: Weight of HIV and AIDS knowledge Content**

Emerging from data, 26.3% (n=34) participants expressed that information on HIV care is very extensive, yet time allocated in the programme is not enough. They even highlighted important areas that need more attention during their training for them to be deemed competent. Statements below highlight this further.

*"Time given for HIV and AIDS is very short especially because is such a huge issue in South Africa" (p 27)*

*"I think more training is needed for preparation on HIV and AIDS management, more especially treatment and microbiology" (p 31)*

*“One week of HIV workshop was good, but it would have been more effective if it was extended so that we don’t get scanty information” (p 83)*

*“I do not think time allocated to the HIV and AIDS module is enough. There is so much to learn and know concerning HIV and AIDS and student cannot know all of it in that short space of time” (p14)*

### **Theme 3: Areas for improvement**

Data collected showed two subthemes in the aspects that need to be improved in the training programme these study participants underwent. Subthemes were the need for workshops and updates and the need to integrate HIV and AIDS care from 1<sup>st</sup> to 4<sup>th</sup> year of training. They are presented below.

#### **Subtheme 1: Need for updates and workshops**

Results indicated that the study participants were aware of evidence-based practice and the fact that research on HIV and AIDS is ongoing. They indicated that what the training programme provides on HIV and AIDS care is insufficient. They were also aware of sources of latest scientific discoveries such as workshops and internet access. Therefore, 17% (n=22) of the HIV and AIDS expressed a need to attend workshops and be updated. The statements below express this further.

*“We should be exposed to workshops and internet access to get more knowledge” (p23)*

*“If students can participate more in workshops and in service based on HIV, will be able to keep updated on management of the disease”(p112)*

*“We are seldom involved or invited to participate in the updates, to ensure competence” (p113)*

*“We need to be kept up to date on the new discoveries that are being made by the WHO so that we keep up with the new management” (p116)*

*“We were given quite a bit of information about HIV and AIDS within the programme. but research and information about HIV and AIDS is constantly updated through workshops” (p119)*

## **Subtheme 2: Integrate HIV care from 1-4<sup>th</sup> year**

Data obtained revealed the participants` views regarding duration of time given to HIV and AIDS care, which they repeatedly quoted a one-week HIV and AIDS workshop at second year only as part of Community Nursing Science. Suggestions were HIV and AIDS be taught at all levels of training, from first to fourth year of training. See the quotations from the participants that explain this further.

*“HIV should be integrated at all levels of training” (p7)*

*“We were taught about HIV in a 5-day workshop which was the only theory received during 2<sup>nd</sup> year. Though it was informative, I would have appreciated to be taught basics during the first year” (p10)*

*“Portion of HIV and AIDS content should be done in Community from 1<sup>st</sup> year all the way to 3<sup>rd</sup> year” (p14)*

*“I think HIV should also be integrated throughout the course, equally not just in 2<sup>nd</sup> year” (p89)*

*“I think instead of just having HIV module in 2<sup>nd</sup> year, there should be at least one HIV module yearly” (p107)*

#### **4.9 Conclusion**

This chapter reported findings from this study. Research findings were grouped into demographic data, foundational knowledge in HIV and AIDS management, competencies in health care provision, knowledge in health promotion and education, leadership and management in HIV and AIDS care, ethical issues in HIV and AIDS, research in HIV and AIDS and sources of information for professional and personal development in HIV and AIDS.

Study findings revealed that age of the participants ranged from 22-38 years 90.7% females and a few males, 9.3%. Participants were at different levels of training, 54.3% at third year and 45.7% at fourth year of training. Majority of the HIV and AIDS, 93.5% reported had nursed PLWH and 4.7% had never. An average of 50% reported had accessed information from at least three sources of knowledge. Findings of this study revealed different levels of competencies at various aspects of HIV and AIDS care. Finally, there were suggestions from the participants for areas that to be improved in the basic nursing education programme they underwent. Participants' suggestions were that student nurses should attend workshops to gain updated knowledge for evidence-based practice and integration of HIV and AIDS competencies from 1<sup>st</sup> to 4<sup>th</sup> year of training. The next chapter will present discussion and interpretation of the findings, limitations and recommendations of this study.



## CHAPTER FIVE

### DISCUSSION OF THE FINDINGS, LIMITATIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents a discussion of the significant findings of this research study, limitations and recommendations. To reiterate, the aim of the study was to *explore the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality*. Objectives of the study were to (a) describe the student nurses' perceived extent of knowledge possessed related to the HIV and AIDS management. (b) Describe the student nurses' perceived level of psychomotor competencies possessed related to the HIV and AIDS care. (c) Describe the student nurses' perceived level of competence in terms of attitudes related to the management of HIV and AIDS. (d) Explore the relationship between the student nurses' demographics and levels of competence in HIV and AIDS management. (e) Explore views of student nurses' regarding their educational preparation in the management of HIV and AIDS. Study findings discussed are in relation to existing relevant literature, research objectives and the conceptual framework underpinning the study. Elements of the conceptual framework (COPA model) were used to establish the perceived levels of competence in different areas such as the foundational knowledge, health care provision skills and Health promotion and prevention. Also, various skills such as leadership, ethical, research and personal together with professional development were also established.

The demographic findings are discussed first, followed by the student nurses' perceived extent of knowledge possessed that is related to the HIV and AIDS management, the student nurses' perceived level of psychomotor competencies possessed that are related to the HIV and AIDS, the student nurses' perceived level competence in terms of attitudes related to the management of HIV and AIDS, the relationship between the student nurses' demographics and levels of competence in HIV and AIDS management and views of student nurses regarding their educational preparation in the management of HIV and AIDS.

## 5.2 Socio Demographics

The demographic data in this study consisted of age, gender, level of training, core courses completed, student nurse's experience in nursing people with HIV and AIDS and sources of knowledge on HIV and AIDS management.

The results from this study indicated that most HIV and AIDS 79.8% were in the age group of 20-25 years, followed by 13.2% who were between 26-30 years, and 7% was 31 years old and above. Participants' ages ranged from 21-38 years. Most probably because they are direct entries from matric. Other study findings that indicated that the participants were younger than 40 years of age were (Mulenga and Naidoo 2017, 6; Asante and Oti-Boadi 2013, 272; Lekhuleni, Kgole and Mbombi 2015, 57). Age is higher for the post basic courses student nurses. Previous literature, (Mc Gee and AAHIVS 2015, 240; Relf and Harmon 2016, 204) reported on the aging of qualified nurses including the HIV clinicians. Therefore, with the majority (79.8%) between 20-25 years, it brings hope of bridging the age gap with young nurses that have joined the nursing profession.

Majority of the participants were females (90.7%), as nursing is a female dominated profession. This is in line with findings from a few studies in nurses' training. (Mulenga and Naidoo (2017, 6); Cele 2014, 66; Lekhuleni, Kgole and Mbombi 2015, 57; Sehume, Zungu and Hoque 2012, 15). Furthermore, Hlongwane (2011, 125), also pointed out that males were the minority in the nursing profession. All these studies confirm dominance of females in the nursing profession. The trend is however gradually changing as males are joining the nursing profession. In a study conducted by Asante and Oti-Boadi (2013, 271), 56.2% were males and 43.8% female participants. The study conducted by Hlongwane (2011, 128), indicated that male nurses are assertive and respectful and protect female nurses. The implication is that presence of males in the nursing profession commands some respect for nurses.

The participants from this study were at two different levels of training and most of them 54.3% were at third year of training, and the fourth years were 45.7%. Similarly, in the study done by Lekhuleni, Kgole and Mbombi (2015, 57) findings were, 51% for third years and 49% for fourth years. These results contradict with findings of another study by Dharmalingam, Porredi, Gandhi and Chandra (2015, 24) where third years were 41.9% and few fourth years 15.7%. In the study

conducted by Al Rabeei, Dallak and Al-Awadi 2012, 223), third years were only 8%. Also in the study conducted by Sehume, Zungu and Hoque (2012, 15), third years were 32.2% and fourth years only 6.6%.

According to current as well as supporting studies, there are less fourth year students than third year students., This may be the result of attrition as students progress with their studies as cited by (Ramkilowan 2014, 103; Merkley 2016, 74). Moreover, there were less fourth years in this study population.

In this study, several core courses were reported to have been completed. They included Fundamental nursing (99.2%), General nursing (83.7%), Community health nursing (45.7%) and Midwifery (66.7%). However, most of the HIV and AIDS, 91.5% had not completed Psychiatry/Mental Health. The results from this study indicated that there is a significant association between the level of training and completion of the core modules. The Psychiatry/Mental health module is the very last module done in the second semester in the fourth year. Each core course curriculum has HIV content and skills that the students must acquire to be competent in HIV related aspects of care.

The fundamental nursing science (FNS) core course is the basic nursing that is done at first year of training. It equips student nurses with the basic HIV and AIDS related competencies such as the standard precautions and the mode of transmission (R425 Fundamental nursing science guide 2001). Community nursing science (CNS) is the module done at three levels (year 1-3). The HIV and AIDS related component is done at 2<sup>nd</sup> year. Its contains myths of HIV, definition of concepts such as HIV and AIDS, clinical manifestations, diagnostic findings, WHO staging, pharmacological, nursing and medical management as well as prevention at all levels of health care. (R425 Community Nursing science 11 Guide 2001).

The General nursing science (GNS) module is done in second and third year over 18 months. Although it is one of the nursing programme core courses, the concern is that it does not have the specific HIV and AIDS related component in it. Within it are various general conditions, some are associated with HIV and AIDS such as cancer of the cervix, Kaposi Sarcoma, Lymphoma, Cryptococcal Meningitis, TB, STI's to mention a few. (R425 General nursing science guide 2001). PMTCT and ARV's are included in the Midwifery module at fourth year level (Midwifery R425 study guide). The psychiatry module is done at 4<sup>th</sup> year, in the very last

semester. HIV and AIDS and mental illness are a common combination. It is thus a concern to the researcher that student nurses meet PLWH and mental illnesses in need of their care. As this HIV and AIDS component is taught that late in the programme, how are they expected to care for these patients? It is important to start introducing psychiatric illnesses in HIV at 3<sup>rd</sup> year level for student nurses to integrate theory learnt into practice. Modeste and Adejumo (2015, 11) recommended that integration of HIV and AIDS competencies be in line with health care needs of the community.

### **5.2.1 Participants experience in managing clients /people with HIV and AIDS**

The participants' responses showed that 95.3% had an experience in nursing people with HIV and AIDS. This is in line with the study that was conducted by Dharmalingam et al (2015, 24) on assessing nursing student's knowledge and attitude towards PLWH, whose findings were 80.2% had an experience in caring for PLWH. However, in the study conducted by Chan, Madeleine and Thayala (2012, 84) findings reported far less than that, 40.5% HIV and AIDS had nursed PLWH. Sehume, Zungu and Hoque (2012, 16), an average of 51.2% had nursed PLWH. Contrary to this study findings, in the study conducted by Akin (2013, 3363), only 18.8% had experience in nursing PLWH in the clinical settings.

Previous studies conducted by Sehume, Zungu and Hoque (2012,16) and Akin et al (2013, 3365) showed no relationship between experience in nursing PLWH and their attitude towards offering them HIV and AIDS care. These findings indicate there are differences in experiences of nursing PLWH. They also confirm this HIV and AIDS epidemic, student nurses meet and care for PLWH often and thus each practising nurse should be prepared to provide quality and efficient HIV and AIDS care.

### **5.2.3 Sources of Knowledge about HIV and AIDS**

In this study, participants reported various sources of information on HIV and AIDS, and they were the following: HIV and AIDS nursing module, HIV and AIDS unit in a nursing module, in-service training, workshops, self-initiated online learning, and textbooks.

Study findings reported that 86.8% obtained knowledge on HIV and AIDS from the nursing module. This corresponds with the qualitative findings of this study, where 15.5% participants

reported they were satisfied with the HIV care that was provided in the education and training programme they underwent. Naidoo et al (2017, 6) supported these findings, where participants reported their programme was of quality. It equipped them with relevant and sufficient knowledge and skills in HIV and AIDS care, that made them to practice with confidence. They added the programme provided them with knowledge to interpret HIV and AIDS management policies and thus they can use updated information.

Similar findings are Mulenga and Naidoo (2017, 5) where 70.4% they received information on HIV and AIDS from the nursing module during their training. Contrary to these findings, Hassan and Wahsheh (2011, 780) only 30% had received training on HIV and AIDS care as part of the nursing module.

Study findings also revealed that 55.8% obtained knowledge on HIV and AIDS management from the HIV and AIDS unit-nursing module, in the clinical settings. This is contrary to the qualitative findings of this study, where only 18.6% participants were satisfied with theory on HIV care they received in their four-year programme. However, they commented that clinical practice time was insufficient for them to correlate theory to practice as cited by Khorvash, 2014, 407; Modeste and Adejumo 2015, 2). Limited time and exposure in the HIV clinical settings may be the reason for inadequate correlation of theory to practice. Nursing is practical therefore, it is essential to strengthen clinical placements of student nurses. The latter is supported by Mellish, Brink and Patton 2008, 207; Meyer and van Niekerk 2011, 168; Muller 2009, 351).

In-service is also known as professional development that is offered to people while employed. These bridges identified knowledge and skills gaps and it is an opportunity for employees to access updated information (Mellish, Brink and Patton 2008, 273). For student nurses, it complements knowledge and skills they acquired during their education and training, which become outdated as new discoveries emerge. This study showed 36.4% received HIV and AIDS information through in-service education. Results that support this study findings even though they are higher, are Mulenga and Naidoo (2017, 5) where 64.5% had sourced knowledge on HIV care from attending in-service sessions. This an indication that these sources of information student nurses are not exposed to as frequently as possible. This may affect negatively as access and use of updated information is crucial in HIV and AIDS management as highlighted by (Modeste and Adejumo 2015, 7; Naidoo et al 2017, 7). Use of outdated knowledge may lead to

mismanagement of PLWH and give poor outcomes. It is therefore important that educational preparation of nurses reinforce exposure of student nurses in in-service education sessions. It is important to note that in-service is indeed planned for qualified personnel.

Overall, an average of 50% reported to get the knowledge about HIV and AIDS from at least three sources. This is in line with findings of a study conducted by Dharmalingam et al (2015, 24) whose results indicated information on HIV and AIDS was obtained from three sources and above.

This study finding also revealed that 34.9% obtained knowledge on HIV and AIDS care from online learning. Similarly, these findings are in line with results of the study conducted by Ouzouni and Nakakis (2012, 137), where 60% obtained knowledge online through the internet. Internet use is rapidly expanding across all professions including nursing and the nursing education. Internet is the source of information that quickly provides updated information.

This study finding indicated 42.6% accessed information through the internet and intranet. Findings that support this study are, Akin et al (2013, 3363), 36.2% were accessing information on the internet. Sharing almost similar findings was a study conducted by Ouzouni and Nakakis (2012, 137) where 60% of the participants were accessing information from the internet. Asante (2013, 273) study findings of 63% also confirmed the internet as one of the main sources of information. Contrary to these findings, Dharmalingam et al (2015, 24), found only 1.2% participants used the internet as source of information on HIV and AIDS.

This is an indication that information on HIV and AIDS is available out there to some, and others may be disadvantaged by not having access to or awareness of the available sources at their disposal. The nursing education institutions should provide student nurses with computers with internet facility, to access latest information to use for better HIV and AIDS patient care outcomes.

### **5.3 HIV and AIDS Management Competencies**

In this study, participants reported several HIV and AIDS management competencies. They were foundational knowledge, health care provision knowledge and skills on HIV and AIDS, health

promotion and health education, ethical issues in HIV and AIDS management, leadership and management, research in HIV and AIDS management as well as personal and professional development in HIV and AIDS management.

### **5.3.1 Foundational knowledge competencies**

In this study, most of the HIV and AIDS, 78.3% reported they had adequate level on the foundational knowledge in HIV and AIDS relevant concepts. Findings supporting this are Akin et al (2013, 3364) where 87.9% understood HIV and AIDS concepts. Similarly, findings of the study conducted by (Asante and Oti-Boadi 2013, 273) also showed that 97.4% and 98.8% knew definition of HIV and AIDS concepts respectively. Another study findings that support this study results are Suominen et al (2015, 5) which reported that 96% understood that in AIDS, the immune system is attacked.

In this study, most of the HIV and AIDS 72.1 % had adequate level of knowledge regarding HIV and AIDS microbiology. Similarly, in the study conducted by Al-Rabeei, Dallak and Al-Awadi (2012, 223) 85.3% had knowledge in microbiology. In a study conducted by Hassan and Wahsheh (2011, 778) 39.1% also had knowledge regarding HIV and AIDS microbiology. Dharmalingam et al (2015, 24) they reported that participants had adequate knowledge in HIV microbiology. The findings indicate a need to address the gaps on the causative organism of HIV and immunology in the preparation of student nurses.

Many HIV and AIDS, 55% responded that they had extensive foundational knowledge on HIV mode of transmission. Findings in this study are similar to results of the study done by Al-Rabeei, Dallak and Al-Awadi (2012, 225) where 58.5% knew the mode of HIV transmission. Also, in Suominen et al (2015, 6), their study showed that 70% knew about HIV transmission. From a study done by Akin et al (2013, 3366), where majority was reported they had responded correctly regarding HIV transmission. These percentages indicate that most of the student nurses understood the terminology and the mode of transmission except for those with misconceptions regarding the latter.

Contrary to these findings are Lekhuleni, Kgole and Mbombi (2015, 60) where more than 33% reported HIV may be transmitted through mosquito bites and swimming in the same water.

Insufficient knowledge on HIV and AIDS transmission may be one of the causes of negative attitude towards caring for PLWH and fear of contagion. The latter implies that there is a need to reinforce the mode of transmission in the nurses' education and training.

Findings in this study also showed that majority, 75.2% reported that they had adequate level of knowledge on HIV epidemiology. Similarly, in the study conducted by Dharmalingam et al (2015, 24) findings reported that participants had adequate knowledge on HIV epidemiology. Results of this study also showed that 72.1% had adequate knowledge on HIV pathogenesis. This is in line with findings in the study conducted by Al-Rabeei, Dallak and Al-Awadi (2012, 223) where 88.6% HIV and AIDS had sufficient knowledge on HIV pathogenesis. Study findings that support this study finding are Suominen et al (2015, 5) where 82% understood pathogenesis of HIV and AIDS. However, in the study conducted by Asante and Oti- Boadi (2013, 273), an average of 54.6% participants had adequate knowledge regarding HIV pathogenesis. Contrary to these findings, Hassan and Wahsheh (2011, 778) only 24.3% had pathogenesis knowledge level on HIV. These results indicate an above average knowledge the student nurses had on HIV and AIDS pathogenesis and epidemiology. Pathogenesis refers to the origin and development of the disease and epidemiology includes the disease statistics and control. The two aspects are crucial for student nurses to know for teaching and nursing patients with understanding. Preparation of student nurses needs to strengthen this aspect.

An average percentage of the HIV and AIDS, 51.2% indicated they had adequate knowledge level in HIV and AIDS clinical manifestations. This is in line with the findings in the study conducted by Al- Rabeei, Dallak and Al-Awadi (2012, 223) where 48.3% reported results indicated they knew clinical manifestations of HIV and AIDS. This is an indication that signs and symptoms of HIV and AIDS were a challenge to most of the study participants. This means it may be a challenge to assess and diagnose possible HIV and AIDS in a client basing on the signs and symptoms. Special attention must be given to the clinical manifestations of HIV and AIDS in the preparation of nurses.

This study finding revealed that 50.4% of the HIV and AIDS reported they had extensive level of knowledge in counselling and testing for HIV and 59.7% could provide counselling and testing.



Also 58.9% could perform voluntary counselling and testing for HIV and 57.4% reported could perform pre-and post-test counselling. Similarly, in the study conducted by Smith et al (2016, 325) 46% were reported to be competent in counselling and testing for HIV and AIDS. In the study conducted by Lekhuleni, Kgole and Mbombi (2015, 9) findings revealed that study participants could perform ten HCT as part of pre- test counselling. Another study that support this study results, Mbombo and Bimerew (2012, 6) where 77.3% could perform pre-test counselling Findings that support these results, Farotimi, Ugochukwu, Nwazichi and Ojediran (2015, 707), 96% had knowledge on counselling and testing for HIV and the importance of such.

In the study conducted by Hassan and Wahsheh (2011, 780), only 27.1% knew how to educate and counsel clients before and after testing for HIV. The study that support this study findings is Mbombo and Bimerew (2012, 6) which showed 74.7% knew how to perform post-test counselling. Findings in this study show that student nurses` exposure to counselling prior to and after testing is limited, yet it is basic and essential to meet the UNAIDS 90, 90, 90 targets by 2020 (UNAIDS 2014). Special attention must be given to this aspect of HIV care in the nurses` education and training.

HIV and AIDS in this study, 58.9% had adequate level of knowledge and skills in diagnosing HIV using the rapid test. Similarly, Smith et al (2016, 325), findings were 57% could perform HIV testing for a child. Smith et al (2016, 325) study findings further supported this study findings by reporting that 42% participants could diagnose the infant HIV status. This is also in line with findings in the study conducted by Mbombi (2012, 9) where participants did rapid tests on 945 pregnant women during a study on integration of PMTCT competencies into the nursing curriculum. These findings are also supported by Mbombo and Bimerew (2012, 6) where 87% could successfully perform the rapid test. The latter is the highest as compared to other previous and the current studies. Contrary to this study findings, in Portillo et al (2016, 220) findings were, more that 50% study participants did not know how to do HIV testing using the Rapid test.

Only 23.3% reported they could interpret rapid test results. This is one of the crucial tasks in HIV and AIDS care. Lack may lead to mismanagement as the rapid test results determine the appropriate management such as counselling, health education, referrals and or initiation of ARV`s. This needs special attention from the education and training of nurses.

Findings in this study revealed that the foundational knowledge on diagnosing and staging HIV and AIDS, most participants, 66.7% had adequate level of knowledge. Findings also showed 58.9% had adequate knowledge to diagnose HIV clinically. Sharing almost similar findings was a study done by Smith et al (2016, 325) which revealed that 57% HIV and AIDS were competent in staging HIV clinically. This is also an indication that even though some students had opportunities to test and diagnose patients, others did not. There is a need to dedicate special attention to this aspect of HIV and AIDS care and provide exposure for all nursing students to practice for competence.

Findings in this study showed that 61.2% had adequate knowledge level on HIV antibodies testing equipment. These results contradict results in another study done by Akin (2013, 3365) that revealed that participants had insufficient knowledge on how to use the HIV antibodies testing equipment for diagnostic purposes. That is a concern as they all will qualify and be expected to skilfully diagnose for proper management of PLWH. Testing lead to arriving at a diagnosis, followed by initiation of relevant management. The findings imply that testing for HIV need to be strengthened in nursing education.

Findings in this study revealed that regarding foundational knowledge level on prevention of mother to child transmission (PMTCT) of HIV, 56% rated that they had adequate knowledge. Supporting this study findings, the study conducted by Lekhuleni, Kgole and Mbombi (2015, 58) indicated that 89.6% had sufficient knowledge on PMTCT. Contrary to these findings, in the study conducted by Smith et al (2016, 325), only 38% of the participants were reported had skills in PMTCT. The results indicate differences in levels of competences that student nurses had regarding PMTCT. Literature reported that every year about 70 000 babies are born infected with HIV. Over 90% of those infected babies, transmission is from a mother to a child (Mbombo and Bimerew 2012, 1). PMTCT implementation can never be over emphasized. There is a need for the education and training of nurses to focus on PMTCT for the huge percentage that was incompetent. The reason may be some fourth-year students had not completed the midwifery module that is done in the first semester in year four.

On the foundational knowledge on the opportunistic infections, 53.5% had adequate knowledge. This study findings further revealed that 62% had adequate knowledge on STI's, TB and 35.7% had extensive knowledge on STI's, TB and HIV. Studies that support this study finding are,

Hassan and Wahsheh (2011, 778) where only 20.3% had knowledge on the opportunistic infections. A huge percentage, 99% participants agreed that TB screening must be done on all PLWH for early diagnosis and prompt management (Suominen et al 2015, 6). Contrary to these findings, in the study done by Lekhuleni, Kgole and Mbombi (2015, 60) most, of the participants, 95.8% had no knowledge of TB- co-infection to HIV yet the latter is common. There are a few opportunistic diseases associated with HIV and AIDS, but TB and STI's are more common. It is thus important that student nurses possess competencies in identifying and managing these opportunistic infections in HIV care.

On the foundational knowledge level on pre-exposure prophylaxis (PrEP), several HIV and AIDS, 51.2% reported they had adequate knowledge and 52.7% of HIV and AIDS had adequate knowledge on post exposure prophylaxis (PEP). The study conducted by Smith et al (2016, 325) showed less than average, 46% participants that were competent in PEP. Prophylaxis before and after exposure play an important preventive role in HIV and AIDS management. Preparation of student nurses should therefore focus on PEP and PrEP for nurses to be competent practitioners in the fight against HIV and AIDS.

In this section HIV and AIDS were required to rate their knowledge on CD 4 cell count and viral\_load monitoring, 55.8% had adequate level of knowledge. However, a significant percentage, 37.2% reported to have inadequate knowledge in monitoring CD 4 cell count and the viral load. In this study 28.7% had good skills in interpreting CD4 cell count and viral load results. These study results are in line with the study done by Lekhuleni, Kgole and Mbombi (2015, 57), where most participants 94.8% could interpret CD4 cell count and viral load as means to monitor effect of ARV's. These findings were higher than in the current study. Success or failure of ARV's is monitored through a rise or decrease in CD4 cell count and vice versa with the viral load respectively. Lack of this competency may lead to mismanagement such as delays in initiation of ARV's or inability to identify treatment failure and the need to refer or move to the next treatment regime. It is very essential that education and training of nurses equip them with this competency.

On the foundational knowledge on legal and ethical issues in HIV, most HIV and AIDS, 64.3% reported they had adequate knowledge on legal and ethical issues in HIV care and 41.9% had adequate knowledge on the policies, laws and regulations and the Provincial HIV and AIDS Programmes. Policies, protocols and regulations are all documents that stipulate what is to be done and how. This is in line with the COPA model of ethics and professionalism core competency that looks at the nurse responding and behaving in a professionally accepted pattern whilst caring for PLWH. Lack of knowledge on these may put a patient's life at risk from nurses' failure to follow the guidelines. This implies that more attention must be given to stressing use of all the guiding documents to direct HIV and AIDS management.

Generally, most HIV and AIDS, 65.1% had adequate knowledge level on HIV and AIDS care. Regarding the foundational knowledge regarding the standard precautions and HIV post exposure prophylaxis, majority, 57.4% had adequate knowledge. Similarly, in the study conducted by Mbombo and Bimerew (2012, 7), 69.5% participants successfully provided ARV prophylaxis to pregnant women in labour. They also provided ARV prophylaxis to the neonates, 75.3%. These results mean that more than 50% student nurses are exposed to offer precautionary HIV care in the clinical settings. The implication is that more attention should be given to cater for all to practice this HIV aspect for competence.

Results in this study indicated that majority of the HIV and AIDS, 58.1% had adequate level of knowledge on effects of HIV to the patient, family and community and, on cultural sensitivity in HIV and AIDS management. Findings of this study indicated that 57.4% had adequate knowledge. On the foundational knowledge on management of HIV and AIDS and TB, results of this study revealed that, 60.5% reported they had adequate knowledge. Contrary to this study findings, Smith et al (2016, 325) study findings showed less than average, 45% could manage TB by initiating its treatment in relation to HIV and AIDS.

Results also showed that most HIV and AIDS, 68.2% had adequate knowledge and ARV management. Regarding the initiation of Antiretroviral Therapy, 60.5% were competent. Findings that support this study findings are, Mbombo and Bimerew (2012, 7) where 78% could initiate the dual ARV therapy. Contrary to this study findings, results in the study conducted by Smith et al (2016, 325) indicated that only 27% could initiate ARV's. Unlike in this study findings, Lekhuleni, Kgole and Mbombi (2015 57) results revealed that 95.8% had no knowledge

regarding initiation of ARV's in relation to the level of the CD4 cell count. This study finding also indicated that 49.6% reported they had adequate knowledge in management of Antiretroviral-associated complications.

Findings of this study indicate that a very good percentage had knowledge level on ARV's and their initiation. However, more attention must be focused on those that reported could not. This is to ensure that all student nurses when they qualify as professional nurses they will be able to provide holistic care to PLWH.

Findings in this study showed that 51.2% of the HIV and AIDS reported they had adequate knowledge on the NIMART. The findings are supported by Lekhuleni, Kgole and Mbombi (2015, 58), where 89.6% had knowledge on NIMART. Most of the HIV and AIDS, 55.8% had adequate knowledge and 35.7% had extensive knowledge on IMCI.

On the foundational knowledge on Highly Active Antiretroviral Therapy (HAART), results of this study indicated that majority of the HIV and AIDS, 65.9% had adequate level of knowledge on the (HAART). Different results were reported in the study conducted by Mbombi and Bimerew 2012, 9) where participants were not allowed to participate in HAART when only trained health care professionals attended to PLWH.

On the foundational knowledge on HIV Health promotion and preventative strategies, 62.8% reported had adequate knowledge. This study finding corroborates the previous study (Smith et al 2016, 325) where 79% study HIV and AIDS reported could educate on HIV prevention. Similarly, in the study conducted by Suominen et al (2015, 5) 98% had knowledge on precautions regarding blood products when caring for PLWH. In the prevention of HIV opportunistic infections, 53.3% of the HIV and AIDS had adequate knowledge. This is an indication that student nurses had adequate knowledge on precautionary measures against HIV and AIDS contagion.

Findings in this study indicated that most of the HIV and AIDS, 69% had adequate knowledge level and 10.9% reported they had extensive knowledge on the psychosocial aspects of HIV and AIDS in children, adolescents and adults. This study findings are in line with the findings in the study done by Smith et al (2016, 325), which showed that 68% participants could provide counselling to a child and the caregiver. It was found that most of the HIV and AIDS, 48.8% had

inadequate knowledge in management of mentally ill patients. The results indicated that only 34.1% had adequate knowledge on managing HIV and AIDS in mentally ill patients. The implication of this study results is that special attention should be given towards reinforcing HIV and AIDS care in mental illness.

### **5.3.2 Competencies in health care provision skills**

The study participants were required to rate themselves on the competency level on health care provision skills such as the curative skills. Findings in this study indicated that, 36.4% had good skills in obtaining adequate and relevant history from the client and 35.7% had good skills in identifying and interpreting verbal and non-verbal cues from the patient. According to the COPA model, competence in health care provision means ability to assess and examine the patient from head to toe and effectively communicating by understanding the patient's verbal and non-verbal cues. Previous studies that support this study findings, Zwane (2011, 67) where 31.9% reported could interpret both verbal and non-verbal cues from the client. Contrary to this study findings in the previous study, Zwane (2011, 62) revealed that only 15% could obtain adequate and relevant history from the patient.

Even though these skills were rated as good, focus must be given to the skills of taking relevant history from the clients including interpretation of all the cues from the patient. This forms part of history taking in an observation aspect. History taking is the fundamental aspect of patient assessment, it is therefore essential for arriving at the correct diagnosis and management. Lack of these skills may lead to incorrect diagnosis and mismanagement.

On the health provision skills in assessing client's needs, 40.3% had good skills and 35.7% had very good skills good in defining client's problem. Findings that support this study results are, Zwane (2011, 62) findings showed slightly less than a third, 32% could define the client's problems. In this study, findings indicated that 43.4% had very good skills in formulating the nursing care plan. These results are not in line with the findings of the study conducted by Zwane (2011, 62) where only 32.6% reported could design the nursing care plan basing on the identified problems the client presented. This means that participants in this study lacked sufficient skills to

state the client's problem and plan how to cater for such. All aspects of management depend on competency in understanding the client's needs. That alone is also not enough; planning must be instituted to resolve the identified problem. It is thus essential to strengthen these aspects of HIV and AIDS care in the preparation of nurses.

Findings in this study showed that majority of the HIV and AIDS, 49.6% had good skills and knowledge in implementing the best possible plan in nursing people living with HIV and AIDS. Results in this study further indicated that, 44.2% had good skills in evaluating effects of the nursing intervention. This is in line with the COPA model core competency that looks at the provision of holistic by using the essential nursing intervention skills. The study that supports these findings was Zwane (2011, 76), where 39.6% could evaluate own practice. As part of the nursing process, it is essential to evaluate every planned and implemented nursing care. This is done to decide whether to continue with care if results are solving the problem. In the cases where the patient's problem persists the nurse has to re-do the process from identification of the problem up to re-implementation and re-evaluation. The implication is that skills of implementing the planned care and evaluating such are insufficient. These areas need to be strengthened in the preparation of student nurses.

It was also found that only 24% reported could prescribe Antiretroviral correctly, 13.2% had very good skills. They could prescribe antiretroviral independently applying the relevant knowledge and with the required attitude. This is in consistence with results found by Smith et al (2016, 325) where only 27% reported they had good skills in prescribing ARV's for the adult and 37% for the child living with HIV and AIDS. This implies that preparation of student nurses need to focus on reinforcing this skill.

A significant percentage, 46.5% of the HIV and AIDS reported they had good knowledge to identify adverse reactions and implement remedial actions. These findings are in line with findings in the study conducted by Smith et al (2016, 325), where 40% could manage ARV side effects. Results in this study further indicated that, 28.7% reported had good knowledge their knowledge in recognizing treatment failure and make appropriate referrals. Smith et al (2016, 325) also reported 33% of their study participants could identify treatment failure. Treatment

failure is a possibility that the nurse should observe the patient for and identify early to refer, recommend or initiate a change of the treatment regime timeously. Also, adverse reactions to treatment including ARV's do occur. The nurse has a responsibility to know the possible adverse reactions, identify them and institute remedial action as soon as possible. Both these competencies were deficient in this study HIV and AIDS. This means special attention should be given to these essential skills in HIV care.

Overall the in the health care provision rating was between fair and good performance. Fair was for having some knowledge or experience whilst good meant ability to perform most activities unaided. Nevertheless, preparation of student nurses need to focus on areas that the study findings reported had insufficient skills in various health care provisions.

### **5.3.3 Competencies in Health promotion and health education**

Vasutharan and Mthembu (2013, 52) defined health promotion as a process of equipping people with information and skills. These assist people to improve their attitudes in health-related issues, control and improve their health status. Regarding health promotion and health education in HIV and AIDS care, findings in this study revealed that 45.7% were very good in identifying learning needs of clients and 43.4% were competent in setting learning outcomes for teaching and learning. This study also found that 36.4% were competent in using the relevant teaching strategies and 41.9% were competent in using teaching aids to enhance teaching and learning. This is in line with the Lenburg's (COPA model), as it states that the core competency of health promotion skills include ability to impart knowledge to patients, relatives and other health care professionals

Findings that support these findings was Zwane (2011, 70), where 29.1% could adequately identify learning needs of clients and students and 28.4% were competent in using teaching aids. The study that further supports these findings was Zwane (2011, 70) who reported 29.1% participants could use the various teaching strategies in clinical teaching. Teaching empowers patients, families, community and other Health care professionals with knowledge. Incompetence in knowledge may lead to misconceptions. Even though findings in this study indicated a below average ability and knowledge of the teaching skills it shows some improvement in teaching abilities as compared to findings in the study by Zwane. There is still a



need to pay special attention to improve the teaching skills in the education and training of nurses.

Results of this study indicated that 38.8% were competent in teaching patients and 41.1% were competent in teaching students and other health care professionals. This study also showed that 35.7% were competent in providing HIV awareness to the community and 17.7% could evaluate success of teaching and learning. Another study results that support these findings are Zwane (2011, 70), 25.9% could teach patients and families on HIV and AIDS related issues and 17.3% could evaluate success of teaching. Farotimi et al (2015, 709) supported this study findings, which reported 98% participants could teach other health care workers and 99% were competent in teaching patients, families and the community about HIV (Farotimi et al (2015, 707).

The findings indicate a lack in teaching abilities of student nurses; overall the teaching skills of the student nurses ranged from good to very good. An improvement was observed when comparing with results in the study conducted by Zwane. However, findings in Farotimi and his team showed excellent teaching skills of 98% and 99%. Clinical teaching is an important tool to promote health and eliminate misconceptions. Teaching empowers patients, families, community and health care professionals with knowledge and skills to understand all aspects of HIV and AIDS. Knowledge assists the clients to understand and accept their condition. Families and the community will also understand and support PLWH. It is therefore imperative that teaching knowledge and skills be strengthened in the student nurses` education and training.

#### **5.3.4 Competencies in leadership and management in HIV and AIDS**

Muller (2009, 152) defines leadership as an interpersonal process between the leader and the followers. The leader influences team members to work towards achieving a common objective. In this study context, the student nurse is the leader who influences other health care workers towards achievement of quality and holistic care to PLWH. In accordance with the COPA model, management skills involve planning organizing resource and coordinating work activities in the nursing unit.

Findings in this study indicated that 38.8% had good knowledge to influence and lead other health care professionals in providing HIV and AIDS care and 40.3% could organize resources for health care provision. Results in this study further showed that, 41.9% were competent in creating a safe work environment for the health care team and clients and 38% could prevent and

manage conflicts effectively. This is in line with findings in the previously done study (Zwane 2011, 77), where 41.7% reported had ability to lead and influence others and 39.6% could organize work resources and the environment. In the study conducted by Naidoo et al (2017, 7) HIV and AIDS reported their noticeably good teaching ability that made them lead mentoring and information sharing sessions in the units.

Leadership was said to support achievement of the common goal by role modelling for juniors and colleagues in rendering efficient and holistic care to PLWH (Lenburg 1999). Lack of leadership competencies may compromise quality patient care. Findings in this study showed that some student nurses possessed good leadership abilities. However, special focus should be given to those that are lacking this essential skill that each professional must acquire.

In this study, it was also found that 28.7% had good knowledge skills of delegating HIV and AIDS related health care tasks to others in accordance with the scope of practice and 31% had adequate supervisory skills. This is in consonance with results found in the study done by Zwane (2011, 74) where 31.8% rated themselves competent in allocating tasks to other health team members in accordance with the scope of practice and the job description and 35.7% could supervise all health care activities in the nursing units.

These study findings indicated that 31% had good skills and knowledge and 28.7% were rated as very good in maintaining accountability for care rendered to clients and only 27.9% had record keeping abilities. This is according to the COPA model core competencies of leadership and ethics with professionalism that focuses on the nurse's ability to document according to the principles of record keeping and in a professional way. This study finding is supported by results in the study conducted by Zwane (2011, 73) where 35.4% could maintain accountability for care they rendered to clients and 26.4% could safely keep records (Zwane 2011, 118).

Overall findings in this study indicated a below average level in most of the administrative skills, leading others, record keeping, organizing resources and environment, accountability for actions taken, delegation, supervision and conflict management. Competencies in the administrative skills equip the professional nurse to create and maintain a therapeutic environment in the nursing unit. The nurses' education and training need to focus on teaching

and development of these skills that each professional nurse must acquire for effective functioning in the nursing unit.

### **5.3.5 Competencies in ethical issues in HIV and AIDS**

Ethics is defined as “The highly specialized field of study that deals with the dynamics of what is right and wrong in human behaviour”. This system has guiding principles that specify what is expected and what is not. The COPA model describes the human caring /relationship skills as one’s ability to relate and treat patients with dignity, privacy and confidentiality. In this study context, the researcher is discussing findings that specify the expected behaviour the student nurses rated themselves they possessed.

Findings in this study indicated that 31.8% were rated had good skills in explaining rights related to HIV and AIDS management to the patient and 35.7% had good knowledge, skills and relevant attitude in managing ethical dilemmas related to HIV and AIDS management. Similarly, to these findings, another study conducted by Zwane (2011, 80) where findings were 56.1% could explain procedures which is in line with promotion of patient’s rights.

Research findings in this study showed that 48.8% reported had excellent skills in keeping patient’s history and HIV status in confidence and 31.8% had good knowledge, skills and attitude in the observing ethical principles when interacting with colleagues about HIV and AIDS health care users. This is in line with the Modeste and Adejumo supporting pillar on interdisciplinary aspect whereby the nurse should become part of the multidisciplinary health team, understand and respect each other’s roles. This is supported by findings in a study conducted by Lekhuleni, Kgole and Mbombi (2015, 57) revealed that 95.8% participants were aware that NIMART initiation at a clinic should not be done in front of all other patients. This is also in line with findings in the study conducted by Zwane (2011,80) which stated that 56.5% could ensure privacy and confidentiality on HIV and AIDS matters entrusted to them by the clients and 43.8% had ability to interact with colleagues ethically regarding care for PLWH.

The implication of this study finding is that generally ethical knowledge and skills on HIV management are below average more especially as compared to other previous study findings. Having sufficient ethical knowledge assist in minimizing discrimination and promote use of

health care service centres by PLWH. It is therefore imperative to reinforce the ethical skills in the preparation of student nurses.

### **5.3.6 Competencies in Research in HIV and AIDS**

According to Grove, Burns and Gray (2013, 1) research is defined as a systematic scientific enquiry that aims at acquiring new information and or modify the existing body of knowledge. According to Lenburg (1999), knowledge and integration skills include nurse`s competency in possessing and using up to date knowledge to guide the nursing practice. Research is conducted to arrive at new discoveries that HIV and AIDS care will be based on. In this study context, it is about research competencies that the student nurses reported they had in HIV and AIDS management.

Results in this study revealed 41.1% could identify the researchable problem, 35.7% could initiate research study and 45% had adequate knowledge in reading and critically analysing research. This corroborates with the study finding, Zwane (2011, 65) conducted where 47.9% could identify researchable problem and 35.7% could initiate research study (Zwane (2011, 64). Contrary to this study findings (Zwane (2011, 64), only 13.2% reported could read and analyse research findings. This study finding indicates an improvement in the ability to read and analyse research as compared to the study conducted by Zwane.

Results further showed that 42.6% had good knowledge skills in determining applicability of research findings to HIV management and 34.9% could use research findings. These findings are not in line with results in another study (Zwane 2011, 65), where only 13.8% could determine applicability of the findings in practice settings and 15.2% could use research findings in HIV and AIDS care (Zwane (2011, 64). Results on HIV ethical competencies were lacking, however they showed improvement in certain areas such as applicability of research findings and use of research findings as compared to Zwane`s previous findings. This is in line with the COPA model core competency on critical thinking skills that pertains to decision making and problem solving using empirical evidence in patient care activities. Lack of research skills, may lead to student nurses not able to successfully conduct a research study and engage in evidence based practice when providing care to PLWH. Preparation of nurses must pay special attention to development of research skills in student nurses.

### **5.3.7 Personal and Professional Development in HIV and AIDS management**

Professional development refers to the process of empowerment through which one develops expertise in the job or profession. This may be done through attending in-service sessions and self on line learning or reading to access latest information (Meyer, Naude and van Niekerk 2008, 217; Muller, Bezuidenhout and Jooste 2011 73). In this context, it means accessing knowledge to gain updated knowledge and skills in HIV management. According to Modeste and Adejumo, personal and professional development is one of the supporting pillars of competencies in HIV and AIDS care. It includes competency in ability to recognize, plan, and implement activities to aid personal and professional growth by keeping updated and knowledgeable.

Findings from this study report on the various sources of knowledge that the HIV and AIDS were accessing for their personal and professional development. In this study findings showed that, 41.1% frequently used textbooks in accessing information on HIV care. These findings are in line with findings in the study conducted by Ouzouni and Nakakis (2012, 137) where 57.5% reported were accessing information from the textbooks. Similarly, in the study conducted by Mulenga and Naidoo (2017, 5), 38.3% received information from textbooks. However, in the study conducted by Khorvash, Mansorian, Boroumandfar and Mohamadirizi (2014, 406) only 2.9% had accessed information on HIV and AIDS from textbooks. This source of information (textbook) is one of the usually easy to access if available and relevant to HIV and AIDS care. At times, it may not offer latest information if it is an older edition. It is advisable to use the latest editions textbooks to avoid use of outdated and no longer relevant information. Libraries at the nursing education institutions must also be stocked with the latest editions of textbooks for student nurses.

Internet use is rapidly expanding across all professions including nursing and the nursing education. Internet is the source of information that quickly provides with updated information. This study finding indicated 42.6% accessed information through internet and intranet and journals were used by 30.2% to access information for their development. Communication is also one of the core competencies the COPA model has that focus on the nurse`s skill in accessing information from textbooks and electronically to cater for patients` needs. Findings

that support this study are Akin et al (2013, 3363) 36.2% were accessing information on internet. Sharing almost similar findings was a study conducted by Ouzouni and Nakakis (2012, 137) where 60% of the participants were accessing information from the internet. Asante (2013, 273) study findings of 63% also confirmed internet as one of the main sources of information. Contrary to these findings, Dharmalingam et al (2015, 24), only 1.2% participants were using internet as source of information on HIV and AIDS.

Findings that support this study findings are Mulenga and Naidoo (2015, 5) where 12.3% used journals for HIV and AIDS information. The contradictory finding to this study was Hassan and Wahsheh (2011, 780) 0% was reported for accessing information from professional journals. Through internet, journals are accessible electronically, may be other authors combined internet and journals as one source of information. This study findings revealed below average use of internet and journals by student nurses. Lack of internet facility at the nursing education institutions may hinder accessing updated information and use of outdated which may affect negatively on the patient outcomes. Education institutions should provide student nurses with computers that have internet facilities and current journals. This need was also suggested by students in the qualitative data of this study.

Study findings indicated that, 45% had attended in-service less frequently and 38% had never attended any form of in-service. Only 10.9% had frequently accessed their developmental information from workshops, updates, seminars and or symposium. Similarly, in the study conducted by Hassan and Wahsheh (2011, 780) 6.3% reported information on HIV and AIDS was received by attending an in-service education. HIV and AIDS` exposure to updated information was limited, yet is valuable for relevance in HIV and AIDS care and evidence-based practice (Lenburg 1999, 313; Adejumo and Modeste 2014, 112).

It was found that, 36.4% had frequently consulted other health care professionals for information to aid their development. Supporting these findings, a study conducted by Akin et al (2013, 3363) revealed that 32.8% were taught by other health care professionals. In the study conducted by Ouzouni and Nakakis (2012, 137), also agreed with the current study results, more than average, 51.8% relied on other health care professionals for information. Ouzouni and Nakakis (2012, 137), added in the report that, 52.9% were also accessing information from their lecturers. Findings of this study show that HIV and AIDS were underutilizing other health care

professionals as their source of information that may be more experienced and better knowledgeable to guide them.

Results of this study also revealed that only 23.3% reported had consulted policies and protocols to enhance their development. The study that supports these findings is Mulenga and Naidoo (2015, 5) where 60.5% had accessed information from the policies and guidelines on HIV and AIDS care. In the study conducted by Naidoo et al (2017, 7), 10% of the participants confirmed using current policies to access latest and relevant information and guidelines on HIV and AIDS care. Contrary to these findings, a study conducted by Zwane (2011, 73), 41.7% could consult policies and protocols to guide the HIV and AIDS care they were offering to patients. This study results indicate that only less than a quarter consulted protocols and policies. They are not only valuable but they are also a necessity as there may be amendments that need to be implemented. They give an official directive to nurses and student nurses in HIV and AIDS management of their patients/clients.

#### **5.4 Views and comments of the participants regarding their educational preparation**

Two subthemes emerged under educational preparation of student nurses in HIV and AIDS management. They are the need for updates and workshops as well as integration of HIV care from first to the fourth year of training.

##### **5.4.1 Need for updates and workshops**

Results indicated that the study participants were aware of evidence-based practice and the fact that research on HIV and AIDS is ongoing. They indicated that what the training programme provided on HIV and AIDS care was insufficient. They were also aware of sources of the latest scientific discoveries such as workshops and internet access. Therefore, 17% of the HIV and AIDS expressed a need to attend workshops and be updated.

Supporting this study findings, was Suominen et al (2015, 1) where they stressed the need to incorporate HIV and AIDS into basic nursing education curriculum basing on the updated knowledge. Similarly, in the study conducted by Naidoo et al (2017, 7) 20% participants reported on the value and benefit they had of using updated knowledge when caring for PLWH

in the clinical settings. The study findings of Modeste and Adejumo (2015, 7) use of updated knowledge was also recommended to enhance performance in HIV and AIDS care. Mulenga and Naidoo et al (2017, 2) also agreed that the rapid changes in PMTCT demands in-service and workshop opportunities for student nurses to keep abreast with latest HIV care developments.

These study HIV and AIDS that recommended for workshops were few, but significance of continuous academic development can never be over-emphasized. The implication is that planning must include student nurses to attend workshops to keep pace with rapid HIV and AIDS care developments.

#### **5.4. 2: Integrate HIV care from 1-4<sup>th</sup> year**

This study finding revealed that 16.2% participants` views regarding duration of time given to HIV and AIDS care, which they repeatedly quoted a one-week HIV and AIDS workshop at second year only as part of Community Nursing Science. Suggestions were HIV and AIDS be taught at all levels of training, from first to fourth year of training. They added that basics such as mode of transmission and preventive measures should be introduced at first year for them to exercise precautionary measures when caring for PLWH. That may also reduce their fears of contagion and improve attitudes in willingness to care for PLWH.

The study that support these findings, Modeste and Adejumo (2015, 7) also agreed student nurses should start interacting with PLWH from the first year of training and caring for them. Naidoo et al (2017, 9) also supported this study findings, by stressing that integration of HIV care from first up to fourth year will provide student nurses with foundational knowledge early in their training and build on such on the subsequent years. Similarly, Portillo et al (2016, 221) also supported integration of HIV related content into the basic curriculum from first year of training.

The findings show importance of including HIV and AIDS care from beginning to end of training of student nurses. The fact that HIV and AIDS high statistics are reported, guarantees great chances of student nurses meeting and caring for them daily. It is recommended that a module on HIV and AIDS be designed and spread over four years. Therefore, more attention should be given to this comment to prepare them holistically to meet PLWH health needs appropriately.



## **5.5 Limitations**

The study had several limitations. There was limited number of participants, the researcher resolved by including all the 3<sup>rd</sup> and 4<sup>th</sup> years. Use of one data collection tool (survey) with two open ended questions did not provide enough ability to explore the phenomena in-depth. The researcher tried but it was not enough. The limited scope of the study as this was done as part of course work masters in the partial fulfilment of the requirement for the qualification. Data was collected from only two Nursing education institutions out of ten that belong KwaZulu Natal college of Nursing. Therefore, the researcher may not generalize these study findings to other nursing education institutions.

## **5.6 Recommendations**

This study made several recommendations. They are based on literature reviewed and findings of this study. They were categorized into curriculum restructuring, clinical preparation and practice of student nurses, academic development of lecturers and clinical facilitators and further research recommendations.

### **Curriculum restructuring**

This study findings and literature reviewed indicated that HIV and AIDS related knowledge content is extensive and time allocated to learn on HIV was one week. It is thus recommended that time be extended by integrating HIV into all levels of the nursing education programme. Misconceptions on the mode of transmission were identified. It is recommended that an HIV module is designed that will integrate every aspect of HIV and AIDS. This is also because South Africa has the highest HIV and AIDS statistics in the region. Psychiatry HIV component is taught during the last semester in the second year. Students do not get enough time to integrate theory into practice of this essential aspect. It is also recommended to introduce the basics at earlier, 3<sup>rd</sup> year and continue with the rest at 4<sup>th</sup> year level.

There were gaps identified in student nurses` knowledge regarding protocols, policies, laws and regulations in HIV management. These knowledge aspects need to be reinforced in the basic

nursing education curriculum. These important guidelines are frequently changed depending on the latest research findings on the issue of concern.

Another gap that this study identified, were knowledge on management of the mental illness in PLWH. This aspect revealed lack of knowledge, yet mental illness is common in PLWH. The curriculum must focus on integrating and strengthening it in preparation of student nurses.

Knowledge on leadership skills was also inadequate. The curriculum need to focus on strengthening the leadership skills more especially supervision, record keeping and accountability for nursing care rendered to PLWH. Handling of legal ethical issues was also poorly rated. Usually this has to do with HIV sensitive issues most of the time that may lead to victimization of PLWH at times. Attention must be given to reinforce this aspect in teaching and learning of student nurses.

Student nurses undergoing this programme conduct mini research at 3<sup>rd</sup> year level as part of Community health module. Research is conducted in small groups after they have received theory on research. However, this study finding reported lack of sufficient knowledge on all aspects of research. There should be relevant resources such as well-resourced libraries with textbooks, journals, computers with internet access to search for information electronically. Focus should be given to thorough supervision and academic support of their research projects up to completion.

### **Clinical preparation and practice of student nurses**

Clinical practice is an important part of the curriculum that supports integration of theory learnt into practice. In this study, students reported on insufficient clinical practice and non-relevant clinical settings they were allocated to. Special attention should be given to allocating students in areas where HIV related competences are available. Such areas must have knowledgeable and skilled mentors to guide and supervise their learning.

Gaps were identified in counselling and testing skill as well as clinical diagnosing HIV and AIDS. These lacking aspects are basic and essential in HIV management. Special attention should be given to plan for counselling and testing practicing sessions during rotations in the

clinical settings. Student nurses also need adequate exposure on performing a rapid test and its interpretation for proper management of PLWH.

The curriculum must also strengthen student nurses` exposure to monitoring and interpretation of the CD4 cell count and the viral load. Another HIV care aspect that need to be focused on is the initiation of ARV`s, application of knowledge on drug interaction when prescribing ARV`s as they were also found to be inadequate.

### **Academic development of lecturers and clinical facilitators**

This study findings student nurses reported on the facilitator of their one week workshop on HIV and AIDS. They were impressed about the presentation and expert facilitation as compared to their lecturers. This shows they identified knowledge and expertise gap in their lecturers in HIV and AIDS teaching and facilitation. Lecturers need professional development through workshops and self on line learning to acquire latest information.

Lecturers also need to use innovative teaching strategies such as group discussions and problem based as they promote learner active participation. They are learner centred as opposed to the traditional teacher dominated such as use of lecture method.

The research component conducted by students needs lecturers to facilitate the process. Lecturers need to have access to electronic resources to guide learners to search and analyse information. As facilitators, they need to be more knowledgeable and better skilled when they supervise students conducting their research.

### **Further research recommendations**

The researcher recommends that the following research would be of benefit to nursing education:

- Study to use mixed methods and use a larger population and extend the study to all levels of training.

## **5.7 Conclusion**

Since HIV and AIDS is a global epidemic and more especially in KZN one province in South Africa, this study intended to explore the perceived competency levels of HIV Clinical management amongst student nurses from selected nursing education institutions in the eThekweni municipality. The quantitative approach based on the positivism paradigm was used to collect data. The self- structured questionnaires were the tool used to collect data from third and fourth year student nurses doing the four- year diploma in General nursing, community, Psychiatry and Midwifery. The COPA model was the conceptual framework that underpinned this study.

The study revealed that student nurses were competent in some arears regarding HIV and AIDS care. Competencies of interest to the researcher were in knowledge, psychomotor skills and attitude. However, there were gaps identified in their educational preparation that may be addressed in different approaches including the recommendations made in this study.

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## **LIST OF ANNEXURES**

### **Annexure 1: Information sheet and consent form INFORMATION SHEET**

**Dear student,**

My name is Pinky Gugu Buthelezi, doing Masters at the University of KwaZulu Natal School of nursing and public health. Contact details are:

#### **Contact details of the researcher**

Cell numbers

0737623682/0761725324

Email: [pgshenge@gmail.com](mailto:pgshenge@gmail.com)

#### **Supervisor contact details**

Professor N.G. Mtshali

Howard college campus

School of Nursing and Public Health

4<sup>TH</sup> Floor Desmond Clarence Building

4041 Durban. South Africa

Email: [mtshali3@ukzn.ac.za](mailto:mtshali3@ukzn.ac.za)

Contact number: 031 260 2498

#### **HSSREC Research Office:**

Mariette Snyman

Contact number: 031- 2608350

Email: [snymann@ukzn.ac.za](mailto:snymann@ukzn.ac.za)

### **HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

**Research Office, Westville Campus**

**Govan Mbeki Building**

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

You are invited to participate in research entitled:

**Exploring the perceived competency levels of HIV clinical management among student nurses from the selected nursing education institutions in the eThekweni Municipality.**

The aim of this study is to explore the perceived competency levels of HIV clinical management among the fourth student nurses. Findings of the study may help nurse educators and the curriculum developers to identify gaps in the curriculum of the four-year comprehensive diploma Nursing Programme and plan on how to integrate HIV into the curriculum and identify the appropriate teaching strategies to use to enhance achievement of HIV competencies. Findings will assist registered nurses on how to support the pre-service nurses towards achieving competency during their clinical placements. The study findings will also add the empirical evidence that will assist the nursing education policy makers and the curriculum developers to plan on how to improve the HIV competencies in education and training of the professional nurses. This will hopefully contribute to a success in fighting the HIV epidemic; meet the 90, 90, 90 UNAIDS 2020 targets, which in turn will surely contribute to global target that aims at ending the HIV pandemic by 2030.

The study is expected to enrol 137 participants from two Nursing Education Institutions, Prince Mshiyeni and Addington. They are in Durban, and the researcher aims at obtaining 60 and 77 respectively from each site. It will involve answering questionnaires for 30 minutes, if you choose to enrol and remain in the study.

The study may involve no risks or discomfort to the participants, as there will be no treatment used. There will be no direct benefits to the participants. Benefits will be addition to scientific body of knowledge, nursing education by informing policy writers, curriculum planners towards improving level of managing HIV in the clinical settings.

This study has been ethically reviewed and by the University of KwaZulu Natal Human and Social Sciences Research Ethics Committee.

Kindly note that participation in the study is voluntary and you may withdraw from participating at any point with no penalty. If you refuse to participate or withdraw from them study, you will neither be victimised no punished in anyway. The researcher may not withdraw participants from the study as there are no risks possible or manipulation of the participants with treatment. Participants will not receive incentives, as data will be collected during lunch break therefore no costs will be incurred.

Participants will also be assured about anonymity and not to include any identifiable information on the questionnaire. Data collected will be treated confidentially under lock and key. Such will be accessible to the researcher and the supervisor only. Information will be used for this study only and will be kept for 5 years thereafter disposed by shredding papers and deleting electronic information from the computer and recycle bin.

## CONSENT

I .....have been informed about the study entitled “ **Exploring the perceived competency levels of HIV clinical management among student nurses from selected nursing education institutions in the eThekweni Municipality.**

Name of researcher: Pinky G. Buthelezi

I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

**Contact details of the researcher**

Cell numbers

0737623682/0761725324

Email: [pgshenge@gmail.com](mailto:pgshenge@gmail.com)

**Supervisor contact details**

Professor N.G. Mtshali

Howard college campus

School of Nursing and Public Health

4<sup>TH</sup> Floor Desmond Clarence Building

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Email: [mtshali3@ukzn.ac.za](mailto:mtshali3@ukzn.ac.za)

Contact number: 031 260 2498

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**HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus

**Govan Mbeki Building**

Private Bag X 54001

Durban

4000

## ANNEXURE 2: Data Collection Questionnaire

*For Office use  
only*

Institution

Participant ID

***TITLE: Exploring the perceived competency levels of HIV/AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality.***

### INSTRUCTIONS:

1. Please do not write your name or any form of your identification.
2. Please give your honest responses.

### SECTION A - DEMOGRAPHIC DATA

1. Please state your age.....

2. What is your gender?

Male

Female

3. Please indicate your level of training by using a tick.

Third Year	
Fourth Year	

4. Please indicate with a tick the core courses you have completed

	Yes	No
Fundamental Nursing/Basic Nursing		
General Nursing/ Medical Surgical Nursing		
Community Health Nursing		
Midwifery		
Psychiatry/Mental Health		

5. Any experience of managing person/client with HIV and AIDS?    Yes ☐    No ☐
6. The knowledge of HIV and AIDS management you have was obtained through *(You may tick more than one)*

An HIV and AIDS Nursing module	
An HIV and AIDS Unit in a nursing module	



In-service training	
Workshop	
Self- initiated on-line learning	
Other (please specify)	

## SECTION B: HIV and AIDS MANAGEMENT COMPETENCIES

### Foundational knowledge in HIV and AIDS management

**Instruction:** Please evaluate your level of knowledge in relation to the items listed below

What do you perceive as your level of knowledge in the items below?

	None	Inadequate	Adequate	Extensive
1. HIV and AIDS relevant concepts				
2. HIV and AIDS microbiology				
3. HIV mode of transmission				
4. Epidemiology of HIV				
5. Pathogenesis of HIV				
6. Clinical manifestations of HIV				
7. HIV Counselling and Testing (HCT)				
8. Provider Counselling and Testing (PCT)				
9. Voluntary Counselling and Testing (VCT)				
10. Diagnosis of HIV clinically				
11. Diagnosis of HIV with Rapid test				
12. Prevention of mother to child transmission (PMTCT)				
13. Prevention of HIV opportunistic infections				
14. Opportunistic infections e.g. TB, STI's etc.				
15. HIV management with Antiretroviral (ARV's)				
16. Pre- Exposure Prophylaxis (PrEP)				
17. Post Exposure Prophylaxis (PEP)				
18. Monitoring of CD4 cell count and the viral load				
19. Legal and ethical issues in HIV care				
20. Effects of HIV to patient, family, and community.				
21. HIV and AIDS care				
22. HIV and AIDS and TB Management				
23. Integrated Management of Childhood Illnesses (IMCI)				
24. Cultural sensitivity in HIV and AIDS management				
25. Antiretroviral Therapy				
26. Nurse Initiated Management of Antiretroviral Therapy (NIMART)				

27. Highly Active Antiretroviral Therapy(HAART)				
28. Sexually Transmitted Infections and Tuberculosis (STIs and TB) and HIV				
29. Laws, regulations and policies related to HIV and AIDS management (National and International)				
30. HIV and AIDS management protocols and guidelines (National and International)				
31. National and Provincial HIV and AIDS programmes				
32. HIV Health promotion and preventative strategies				
33. Management of Antiretroviral-Associated complications				
34. Standard precautions and HIV Post Exposure Prophylaxis				
35. Nutrition and HIV and AIDS				
36. Psychosocial aspects of HIV and AIDS in children, adolescents and adults				
37. Diagnosing and staging HIV and AIDS				
38. Pre-and Post-test Counselling				
39. Initiation of Antiretroviral Therapy				
40. HIV antibodies testing equipment				
41. HIV and AIDS management in mentally ill patients				

**Please indicate your perceived state of competence or ability to perform the following tasks.**

Please use the scale provided by making a tick on the number you have chosen as your response.

**The scale is from 1 to 5 as follows:**

1. = Poor, if you have no required knowledge, skills and attitude.
2. = Fair, if you have some knowledge or experience or attitude.
3. = Good, if you can perform most activities unaided.
4. = Very good, if you can function all activities independently applying the related knowledge and display the required attitude
5. = Excellent, for having knowledge, skills, attitude and able to teach others.

### **Healthcare provision**

42. Obtain adequate and relevant history from the client	1	2	3	4	5
43. Identify and interpret verbal and non-verbal cues from the patient	1	2	3	4	5
44. Assess client`s needs	1	2	3	4	5
45. Define the client`s problem	1	2	3	4	5
46. Formulate the nursing care plan	1	2	3	4	5
47. Implement the best possible plan	1	2	3	4	5
48. Evaluate effects of the intervention	1	2	3	4	5
49. Do rapid test of HIV status	1	2	3	4	5
50. Interpret rapid test results	1	2	3	4	5

51. interpret CD 4 cell count and viral load results	1	2	3	4	5
52. Prescribe antiretroviral correctly	1	2	3	4	5
53. Apply knowledge of drug interaction when prescribing and administering antiretroviral	1	2	3	4	5
54. Administer antiretroviral correctly, according to legislation, scope of practice and doctor's prescription	1	2	3	4	5
55. Identify medication adverse reactions and take appropriate remedial actions	1	2	3	4	5
56. Recognize treatment failure and refer appropriately	1	2	3	4	5

### **Health Promotion and Health Education**

57. Identify learning needs of clients/patients	1	2	3	4	5
58. Setting the learning outcomes for teaching	1	2	3	4	5
59. Use the relevant teaching strategies e.g. discussions, presentations, demonstrations	1	2	3	4	5
60. Use the available and relevant teaching aids creatively to enhance teaching and learning	1	2	3	4	5
61. Teach patient and relatives on the patient's health needs	1	2	3	4	5
62. Teach student nurses and other health care practitioners HIV care	1	2	3	4	5
63. Provide HIV awareness to the community irrespective of HIV status	1	2	3	4	5
64. Evaluate success of learning	1	2	3	4	5

### **Leadership and management**

65. Influence and lead others in provision of HIV and AIDS care	1	2	3	4	5
66. Create a safe work environment for the health care team and clients	1	2	3	4	5
67. Organize resources to be used during the provision of HIV and AIDS care	1	2	3	4	5
68. Delegate HIV and AIDS care tasks to others of according to scope of practice	1	2	3	4	5
69. Prevent and manage conflicts effectively	1	2	3	4	5
70. Supervise others to ensure HIV and AIDS care is according to the policies, protocols and procedures	1	2	3	4	5
71. Maintain accountability for care rendered to clients	1	2	3	4	5
72. Keep accurate records e.g. (VCT, PEP, pre- and post-test counselling, Rapid tests statistics	1	2	3	4	5

### **Ethical issues**

73. Explaining to the patient their rights related to HIV and AIDS management	1	2	3	4	5
74. Manage ethical dilemmas related to HIV and AIDS management	1	2	3	4	5
75. Keep in confidence all history given, patient's HIV status	1	2	3	4	5
76. Observe ethical principles when communicating with colleagues regarding users/clients/patients of HIV and AIDS health care	1	2	3	4	5

### **Research**

77. Identify researchable HIV management problems	1	2	3	4	5
78. Initiate research in HIV and AIDS management	1	2	3	4	5
79. Read and analyse HIV- related research	1	2	3	4	5
80. Determine applicability of research findings to HIV management	1	2	3	4	5
81. Use research findings in the management of HIV and AIDS	1	2	3	4	5

### **Personal and Professional development**

**Indicate how often you access the current health related information by using the following rating: (Please write number only)**

1= Not at all      2= Less frequently      3= Frequently      4= Most frequently

	<b>Response</b>
82. Reading textbooks with HIV and AIDS management content	
83. Reading Journal articles related to HIV and AIDS management	
84. Source information from the Internet and/or intranet	
85. Consult other health care professionals regarding HIV and AIDS management	
86. Consult policies and protocols on HIV and AIDS management	
87. Attend in service education like workshops, updates, seminars or symposium on HIV and AIDS management	

86. What are your views about your preparation on HIV and AIDS management both the theory and the practical in this nursing programme? What are the strengths of the programme and what may need to be improved?

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87. Do you have any other comments?

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THANK YOU FOR YOUR TIME AND SUPPORT

**Annexure :3 APPLICATION FOR PERMISSION LETTERS  
To Provincial Department of Health**

The chairperson

Provincial Health Research Committee

KwaZulu Natal Province

Private Bag x9051

Pietermaritzburg

3200

12. May 2017

**From:** Mrs. Pinky G. Buthelezi

Masters Student

University of KwaZulu Natal

School of Nursing

Durban –South Africa

Email: [pgshenge@gmail.com](mailto:pgshenge@gmail.com)

## **REQUESTING PERMISSION TO CONDUCT RESEARCH**

I am a student at the University of KwaZulu Natal studying Master`s Degree in Nursing Education. One of the requirements is to conduct a study as a partial fulfilment of the degree. I am undertaking a study to explore the perceived competency levels of HIV clinical management among student nurses from a selected diploma in nursing education in the eThekweni municipality.

I hereby request permission to conduct this study at Addington and Prince Mshiyeni Nursing Campuses. I would like collect data from the 3<sup>rd</sup> and 4<sup>th</sup> year student nurses. Participation will be on a voluntary basis. The rights pertaining to freedom of choice to participate, informed consent, confidentiality and anonymity will be observed.

For any further information, my contact details are: 0737623682 and pgshenge@gmail.com

Supervisor: Prof N.G. Mtshali

I hope my request will reach your utmost consideration.

Yours Sincerely

Pinky G. Buthelezi

**To KwaZulu Natal College of Nursing**

University of KwaZulu Natal

Nursing School and Public Health

01.12.2016

Mrs. Sangeetha Maharaj

KwaZulu Natal College of Nursing

Dear Madam

**REQUESTING FOR A LETTER OF SUPPORT TO SUBMIT TO ETHICS COMMITTEE**

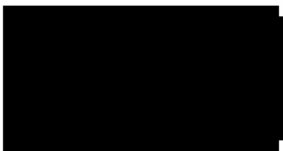
I am student at the Nursing School of the University of KwaZulu Natal in Durban, studying for Masters in Nursing Education. As a requirement for the degree I have to conduct a research project titled **“Exploring the conceived competency levels of HIV clinical management among student nurses from selected nursing education institutions in the eThekweni municipality”**.

I am a NEPI/ICAP funded student from Prince Mshiyeni Memorial Campus under KZN CN. My proposed study population are final year student nurses of the comprehensive four-year programme at Prince Mshiyeni Memorial, Addington and R.K. Khans Nursing campuses. I therefore request a letter of support to submit to the University ethics committee with my research proposal.

I trust that my request will receive your favourable consideration. Information obtained will contribute in transformation of the nursing education and training curriculum so as to prepare professional nurses of quality and relevant to meet health care needs of people in the province.

Yours faithful

P.G. Buthelezi (0737623682)





**TO CAMPUS PRINCIPALS**

University of KwaZulu Natal

Nursing School and Public Health

Mrs. R. Bridgemohan (The Principal)

28.07.2017

Prince Mshiyeni Memorial Campus

P/Bag x10

Mobeni

4060

Dear Madam,

**REQUESTING FOR PERMISSION TO CONDUCT A RESEARCH AT YOUR CAMPUS+-.**

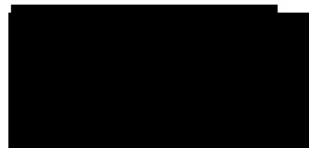
I am student at the Nursing School of the University of KwaZulu Natal in Durban, studying for Masters in Nursing Education. As a requirement for the degree I have to conduct a research project titled **“Exploring the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality”**.

I therefore request permission to meet the 3<sup>rd</sup> and 4<sup>th</sup> year diploma students, give them questionnaires to fill in during their lunch break. I will issue information leaflets that explain about the study and the fact that their participation will be voluntarily. Students that consent will be asked to sign an informed consent. Anonymity and confidentiality will be ensured.

I trust that my request will receive your favourable consideration. Information obtained will contribute in transformation of the nursing education and training curriculum so as to prepare professional nurses of quality and relevant to meet health care needs of people in the province.

Yours faithful

P.G. Buthelezi (0737623682)



University of KwaZulu Natal  
Nursing School and Public Health  
28.07.2017

The Campus Principal  
Addington Campus  
P.O. Box 977  
Durban  
4000.

Dear Madam,

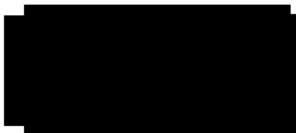
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Yours faithful  
P.G. Buthelezi (0737623682)



## Annexure 4: PERMISSION LETTERS



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

330 Langabalele street,  
Private Bag X5061 PMB 3200  
Tel: 033 395 3189/0333123 Fax: 033 394 3732  
Email: hrkm@kznhealth.gov.za  
www.kznhealth.gov.za

DIRECTORATE:

Health Research & Knowledge  
Management (HRKM)

Reference: HRKM258/17  
KZ\_2017RP9\_966

12 July 2017

Dear Mrs P G Buthelezi  
(University of KwaZulu-Natal)

**Subject: Approval of a Research Proposal**

1. The research proposal titled '**Exploring the Perceived Competency Levels of HIV/AIDS Management among Student Nurses from Selected Nursing Education Institutions in the eThekweni Municipality**' was reviewed by the KwaZulu-Natal Department of Health (KZN-DoH)

The proposal is hereby **approved** for research to be undertaken at Prince Mshiyeni Memorial and Addington Hospitals.

2. You are requested to take note of the following:
  - a. Make the necessary arrangement with the identified facilities before commencing with your research project.
  - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X5061, PIETERMARITZBURG, 3200** and e-mail an electronic copy to [hrkm@kznhealth.gov.za](mailto:hrkm@kznhealth.gov.za)

For any additional information please contact Ms G Khumalo on 033-395 3189

Yours Sincerely

Dr E Lutge

Chairperson Health Research Committee

Date 18 July 2017

*fighting Disease, fighting Poverty, Giving Hope*



24 July 2017

Mrs Pinky Gugu Buthelezl (216073339)  
School of Nursing & Public Health  
Howard College Campus

Dear Mrs Buthelezl,

Protocol reference number: HSS/0609/017M

**Project title:** Exploring the perceived competency levels of HIV/AIDS Management among student nurses from the selected nursing education institutions in the eThekweni Municipality

**Full Approval – Expedited Application**

With regards to your response received on: 21 July 2017 to our letter of 20 June 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

**PLEASE NOTE:** Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully,

Dr. Shenuka Singh (Chair)

/ms

cc: Supervisor: Professor NG Mtshali  
cc: Academic Leader Research: Professor B Sartorius  
cc: School Administrator: Ms Caroline Dhanraj

**Humanities & Social Sciences Research Ethics Committee**

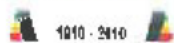
Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54551, Durban 4000

Telephone: +27 (0)31 260 3567/8/56/4557 Facsimile: +27 (0)31 252 4809 Email: [shenuka.singh@ukzn.ac.za](mailto:shenuka.singh@ukzn.ac.za) / [caroline.dhanraj@ukzn.ac.za](mailto:caroline.dhanraj@ukzn.ac.za) / [mohun@ukzn.ac.za](mailto:mohun@ukzn.ac.za)

Website: [www.ukzn.ac.za](http://www.ukzn.ac.za)



100 YEARS OF ACADEMIC EXCELLENCE

Founding Campus: Durban Pietermaritzburg Natal KwaZulu Howard College Marshall School Pietermaritzburg Westville



**health**

Department:  
Health  
PROVINCE OF KWAZULU-NATAL

**KWAZULU-NATAL COLLEGE OF NURSING  
PRINCE MSHIYENI MEMORIAL CAMPUS**

Physical Address: Mangosuthu Highway, Durban, 4000

Physical Address: Private Bag X10, Mobeni, 4060

Tel: +27(031) 907 8313/ 8314 Fax: +27(031) 906 7772 Email: Rozana.Bridgemohan@kznhealth.gov.za

[www.kznhealth.gov.za](http://www.kznhealth.gov.za)

**Directorate: PRINCIPAL OFFICE**

Date: 17/10/2017

Ms P.G.Buthelezi  
School of Nursing and Public Health  
Howard College Campus  
University of KwaZulu Natal (UZKN)

Dear Ms P.G.Buthelezi

**Re:** Permission to conduct a research study at Prince Mshiyeni Memorial Campus


**Title of the study:** Exploring the perceived competency levels of HIV/AIDS management among student nurses from a selected nursing education institutions in the Ethekwini Municipality".

In response to your request dated 28 July 2017, I am pleased to inform you that your application to conduct your study at Prince Mshiyeni Nursing Campus has been granted.

I note with appreciation that you have full approval from the Humanities and Social Sciences Research Ethics Committee, UKZN.

Please abide by the stipulations of Kwa – Zulu Natal College of Nursing and KZN Department of Health. Kindly communicate the outcome of your study by submitting a written report and a copy of the thesis to the Prince Mshiyeni Memorial Campus Principal

Thank you

  
Mrs. R. Bridgemohan  
Campus Principal



24 July 2017

Mrs Pinky Gugu Buthelezl (216073339)  
School of Nursing & Public Health  
Howard College Campus

Dear Mrs Buthelezl,

Protocol reference number: HSS/0609/017M

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Dr. Shenuka Singh (Chair)

/ms

cc Supervisor: Professor NG Mtshali  
cc Academic Leader Research: Professor B Sartorius  
cc School Administrator: Ms Caroline Dhanraj

#### Humanities & Social Sciences Research Ethics Committee

Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54551, Durban 4000

Telephone: +27 (0)31 280 3567/8/5674567 Facsimile: +27 (0) 31 252 4809 Email: [shenuka@ukzn.ac.za](mailto:shenuka@ukzn.ac.za) / [caroline.dhanraj@ukzn.ac.za](mailto:caroline.dhanraj@ukzn.ac.za) / [mohuna@ukzn.ac.za](mailto:mohuna@ukzn.ac.za)

Website: [www.ukzn.ac.za](http://www.ukzn.ac.za)



1010 - 2010  
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Founding Campuses: Edgewood Howard College Marikopa School Pietermaritzburg Westville

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16 ERSKINE TERRACE, SOUTH BEACH, DURBAN, 4001  
P O BOX 977, DURBAN, 4000  
Tel: 031-327 2999 Fax: 031- 327 2070  
Email: Thembi.skakane@kznhealth.gov.za  
Web: www.kznhealth.gov.za

**TRAINING CAMPUS ADDINGTON**

15/08/2017

Ms PG Buthelezi

**PERMISSION TO CONDUCT RESEARCH AT ADDINGTON CAMPUS**

Dear Ms Buthelezi

Permission is hereby granted for you to conduct your research on:

**“Exploring the perceived competency levels of HIV and AIDS management among student nurses from a selected nursing education institutions in the eThekweni Municipality”.**

Please take cognizance of the following:

- You must adhere to all policies, procedures, protocols and guidelines of the Department regarding research
- Please inform our institution before research is commenced
- Please provide a copy of your research report to the Campus, on completion of the study

Wishing you all the best for your studies

Ms.T.P. Skakane-Masango  
Campus Principal

12 Kite Place

Woodhaven

Durban

4004

18-01-2018

### **Editing Declaration**

To whom it may concern

**Thesis Title:** “Explore the perceived competency levels of HIV and AIDS management among student nurses from selected nursing education institutions in the eThekweni Municipality.

**Author:** Pinky Buthelezi

**Student number:** 216073339

This is to certify that I have edited the above thesis and have made recommendations to the author in respect of grammar, punctuation, spelling, syntax, tense and language.

Yours Faithfully

Silindile Hlengwa



**List of figures**

Figure 1.1: Conceptual framework on Student Nurses perceived level of clinical competence in HIV and AIDS management

Figure 4.1 Histogram of the age of the HIV and AIDS

Figure 4.2 Gender of the participants

Figure 4.3 Level or year of training

Figure 4.4 Experiences in managing clients/ people with HIV and AIDS

Figure 4.5 Overall knowledge of the HIV and AIDS on HIV and AIDS

Figure 4.6 Competency grades of the participants

**List of tables**

Table 3.1: Content Validity (checklist)

Table 4.1 Core courses completed

Table 4.2 Correlation between the level of training and the completed core courses

Table 4.3 Participants sources of knowledge on HIV and AIDS

Table 4.4 Participants` competencies in foundational knowledge of HIV and AIDS management

Table 4.5 The participants` therapeutic/ curative knowledge

Table 4.6 Correlation of Curative /Therapeutic competencies and the demographics of the participants

Table 4.7 Participants` health promotion and health education competencies

Table 4.8 Correlation of the Health promotion competencies and the demographics of the participants

Table 4.9 Participants` leadership and management in HIV and AIDS competencies

Table 4.10 Correlation of the Leadership competencies and the demographics of the participants

Table 4.11 Participants` competencies on ethical issues in HIV and AIDS care

Table 4.12 Correlation of the Ethical issues competencies and the demographics of the participants

Table 4.13 Participants` competencies on research in HIV and AIDS

Table 4.14 Correlation of the Research competencies and the demographics of the participants

Table 4.15 Participants` sources of knowledge for development

Table 4.16 Correlation of the sources of knowledge competencies and the demographics of the participants

Table 4.17 Themes, subthemes and percentages of subthemes