NURSES KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS PATIENTS WITH HIV AND AIDS, KUMASI, GHANA

By

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DEDICATION

This work is dedicated to all patients living with HIV and AIDS who in one way or the other have suffered stigma and discrimination in an attempt to seek health.

Student Number: 58545549

DECLARATION

I declare that **NURSES' KNOWLEDGE, ATTITUDES AND PRACTICES TOWARD PATIENTS WITH HIV AND AIDS, KUMASI, GHANA** is my own work and all the sources that I have used, cited or quoted have been indicated and acknowledged by means of complete references, and that this work has not been submitted before for any other degree at any other institution.

Signature:..... Date:…..4th October 2018…..

Full name: Boakye Dorothy Serwaa

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NURSES' KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS PATIENTS WITH HIV AND AIDS, KUMASI, GHANA

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ABSTRACT

Studies on knowledge, attitudes and practices among healthcare workers involved in HIV and AIDS care have often revealed the lack of knowledge about HIV and AIDS. Nurses' knowledge may compromise the quality of care and attitudes towards patients living with HIV/AIDS. Special nursing knowledge and skills have been suggested as a prerequisite for taking care of patients with HIV. The purpose of this study was to assess nurses' knowledge, attitudes and practices towards patients with HIV and AIDS in Kumasi, Ghana. A quantitative cross-sectional study was conducted among 247 nurses at five selected health facilities in Kumasi. Data was collected by means of a structured self-administered questionnaire and analysed using SPSS version 23.0. Results were presented using charts and tables. Knowledge of HIV and AIDS was satisfactory but some of the nurses still hold erroneous beliefs and misconception about HIV transmission. A majority demonstrated favourable attitudes. Nurses had fears of contracting the virus, which resulted in the display of negative attitudes by some. Their practice of universal precautions was satisfactory; however, there was evidence of non-compliance among some of them. More studies should be conducted throughout the country to further assess nurses' knowledge, attitude and practices towards HIV and AIDS.

KEY CONCEPTS:
Attitudes, HIV/AIDS, knowledge, nurses, practices, primary health care, Ghana

LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANOVA	Analysis of variance
ART	Antiretroviral therapy
ARV	Antiretroviral
AVERT	Averting HIV and AIDS
CANAC	Canadian Association of Nurses in AIDS Care
CDC	Centre for Disease Control and Prevention
CNO	Chief Nursing Officer
ECDC	European Centre for Disease Prevention and Control
EN	Enrolled Nurse
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
HIVPOINT	Finnish HIV Foundation
KAP	Knowledge, attitude and practice
KATH	Komfo Anokye Teaching Hospital
KNUST	Kwame Nkrumah University of Science and Technology
MoH	Ministry of Health
NACP	National AIDS Control Programme
NGOs	Non-Governmental Organizations
PEP	Post-Exposure Prophylaxis
PLWHA	People living with HIV and AIDS
PMTCT	Prevention of Mother to Child Transmission
PNO	Principal Nursing Officer
POC	Point of Care
PrEP	Pre-Exposure Prophylaxis
SEN	Senior Enrolled Nurse
SN	Staff Nurse
SPSS	Statistical Package for Social Sciences
STI	Sexually Transmitted Infection

TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNISA	University of South Africa
VCT	Voluntary counselling and testing
WHO	World Health Organization

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURES

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION TO THE STUDY

Human immunodeficiency virus (HIV) affects the cells of the immune system and destroys them or hinders their activity. This, in turn, leads to a continued decline of the immune system, causing immune deficiency (WHO 2018a:2). The immune system is regarded as deficient once it is no longer able to accomplish its function of combating infection and disease. Infections linked to critical immunodeficiency are labelled to be opportunistic infections, due to their exploitation of a diminished immune system (WHO 2018a:2). The advanced stages of HIV infection are termed Acquired Immunodeficiency Syndrome (AIDS), and can be defined by the manifestation of any of more than 20 opportunistic infections or HIV-linked cancers (WHO 2018a:3). The most common mode of transmission of HIV includes unprotected sexual intercourse with an infected individual; contaminated blood products, needles, syringes, surgical equipment or other sharp instruments; as well as from mother to child during pregnancy, childbirth and breastfeeding (WHO 2018a:3).

According to the Joint United Nations Program on HIV/AIDS, since the beginning of the HIV epidemic, approximately 78 million people have been infected with HIV, with an approximate 35 million people dying due to AIDS-related illnesses and an estimated 36.7 million people living with HIV worldwide by the end of 2015 (UNAIDS 2018a:1). In 2017 the number of people newly infected with HIV and the number of people who died from AIDS-related illnesses was approximately 2.1 million and 1.1 million, respectively (Foundation for AIDS Research 2018:1).

Sub-Saharan Africa bears the greatest burden, as it sees more than two thirds (69%) of all persons infected with HIV. An estimated 25.8 million persons were living with HIV and AIDS in Sub-Saharan Africa, whereby the end of 2014, women accounted for more

than 50% of the number, 2.3 million of which were girls. Estimated new infections in Sub-Saharan African were 1.4 million, which again represents 70% of new infections worldwide. AIDS-related deaths account for 790,000 persons in Sub-Saharan Africa (HIV Sentinel Survey 2015:1).

In Ghana, the UNAIDS estimates the prevalence rate of HIV to be 1.6% amongst ages 15-49 years (UNAIDS 2017:2). Although HIV prevalence rate in Ghana appeared to be on a downward trend from 3.6% in 2003, to 1.5% in 2010 and remaining at 1.3% in 2011 and 2012 (Ghana AIDS Commission 2014:1), a rise in new infections was recorded in 2016, despite the significant efforts made to reduce new infections (UNAIDS 2017:1). With an estimated 220 000 of the population living with HIV, 10 000 are reported to die per annum, constituting a public health problem in Ghana (Ghana AIDS Commission 2014:1). Amongst the interventions taken in Ghana to increase survival among infected individuals is the scaling-up of antiretroviral (ARV) treatment. The number of people living with HIV and receiving ARV treatment has increased from 0.4% in 2003 to 34% in 2015 (Ghana AIDS Commission, 2014:1).

This chapter provides a background to the study, problem statement, purpose and objectives of the study, significance of the study, the research hypothesis, and definitions of key concepts used in the study. The chapter also provides the synopsis of the research design and methods used in the study and the layout of the dissertation.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

The Joint United Nations Programme on HIV/AIDS [UNAIDS] report (2017:1) indicates that 2.0% of Ghanaian adults aged 15-49 are HIV positive. However, the prevalence rate varies among various age groups, with the highest rate prevalence of 5.6% found among the 45-49, followed by 35-39 at 3.5%, with 15-19 being the lowest at 0.6% (Ghana AIDS Commission 2017:1). Additionally, the prevalence rate is relatively higher in urban areas compared to rural areas, with urban area prevalence being twice as much as rural prevalence (HIV Sentinel Report 2015: 10). The prevalence is higher in

females (2.8%) than it is in males (1.1%). According to UNAIDS (2017:1), 38% of women aged 15-49, and 49% of men aged 15-49 who are living with HIV had never been tested for HIV previously. Currently, the Ashanti regional HIV prevalence rate stands at 2.6% (Ghana AIDS Commission 2017:1). The Kumasi Metropolis, as the capital city of the Ashanti tribal group, recorded the highest prevalence rate of 3.4% in the year 2015, which was above the national prevalence rate of 1.7%, and is still leading with the highest prevalence rate (Ghana Web 2017:1).

The personal safety and health of professionals caring for HIV infected patients ought to be paramount (Masebeo & Maharaj 2016:57) since it is only a healthy workforce that can provide the needed care to PLWHA. Health care workers may become infected with HIV as a result of their own risky sexual behaviour (Wyzgowski, Rosieki, Grzela & Leksowski 2016:990). Nonetheless, they are exposed to various occupational risks such as getting pricked with infected injecting equipment, or accidentally being exposed to infected blood and/ or body fluids (Masebo & Maharaj 2016:57). This risk is generally smaller than the risk from sexual contact. The Center for Disease Control and Prevention (CDC) in Atlanta estimates that for every 200 accidental infected needle pricks, there is one HIV seroconversion (Wyzgowski et al 2016:990). A prospective study conducted by Handerson, Fahley and Willy (1990) and cited in Wyzgowski et al. (2016: 990) to estimate the risk of occupational HIV transmission, which revealed that of the 1344 health workers, 179 and 346 reported percutaneous and mucous membrane exposition, respectively to bodily fluids from HIV positive patients.

Nurses have always been at the forefront of the HIV epidemic, being the largest paramedical professional group caring for patients with HIV/AIDS (Marranzano et al 2013:1). Challenges such as uneven doctor to patient ratio in the health systems of developing countries have led to the World Health Organization (WHO) recommending tasks shifting from doctors to nurses, midwives, and other paramedic staffs in the management of HIV and AIDS in 2008 (Suzan-Monti, Blanche, Boyer, Kouanfack, Delaorte, Bonono, Carrieri, Protopopescu, Laurent & Spire 2015:308). Due to this task shift, nurses have become key players in HIV counseling and testing, clinical assessment, adherence counseling for the initiation and monitoring of antiretroviral

therapy, providing psychosocial support, and continuum of care through follow-ups (Suzan- Monti et al. 2015:308).

Evidence and reports from several studies have indicated discriminatory attitudes and stigmatisation towards people living with HIV and AIDS across the globe (Wu, Ko, Shih & Feng 2014:51; Makhado, & Davhana-Maselesele 2016:8). A study by Vorasane, Jimba, Kikuchi, Yasuoka, Nanishi, Durham and Sychareun (2017:123), suggested that stigmatising attitudes, such as prejudice, discrimination at work, and fear of AIDS, existed among doctors and nurses. However, such attitudes are less likely among nurses with longer years of experience in treating PLWHA (Vorasane et al 2017:123). Vorasane et al. (2017:123) further explained that nurses with longer years of working with PLWHA, gain more experience and familiarity with HIV/AIDS and, therefore, show a greater willingness to provide care to HIV and AIDS patients. On the contrary, a study byLedda, Cicciù, Puglisi, Ramaci, Nunnari and Rapisard (2017:5) revealed that health workers with more than 11 years of service showed greater discriminatory attitudes, poor tolerance towards HIV/AIDS and more fear.

Health education on facts about HIV/AIDS helps in reducing HIV/AIDS-related stigma and discrimination among health workers (Iwoi, Nde, Yuh, Kwenti, Tshimwanga, Achiri & Djunda 2017:10).Inadequate knowledge or lack thereof regarding HIV and AIDS has been associated with nurses demonstration of fear, stigmatisation, and unwillingness to care for PLWHAs, which is very harmful to their practice, as they are expected to resume their nursing role as primary care providers (Iwoi, Nde,Yuh, Kwenti, Tshimwanga, Achiri & Djunda 2017:10).Dharmalingam, Poreddi, Gandhi and Chandra (2018:25), found the overall knowledge of nurses to be high, however, their knowledge on the modes of transmission of HIV was low. Dharmalingam et al. (2018:25) also noted that nurses held misconceptions about how HIV is actually transmitted. Lwoi et al. (2015:10) found a moderate level of HIV related knowledge among its participants.

Non-compliance to universal precautions on the part of nurses puts them at the risk of occupational HIV infection. Non-compliance with universal precautions is a common practice in developing countries (Marranzano, Ragusa, Platania, Faro & Coniglio

2013:5). Non-adherence to different elements of Standard Precautions, such as glove use or sharps safety, has been identified as a concern (Moralejo, El-Dib, Prata, Barretti &CorrêaI 2018:25).

1.3 STATEMENT OF THE RESEARCH PROBLEM

In Ghana, the prevalence rate of HIV is estimated to be 1.47% amongst ages 15-49 years (United Nations Program on HIV/AIDS 2014:13). An estimated 250 000 of the population living with HIV and 10 000 deaths per annum makes it a public health problem in Ghana (UNAIDS 2014:14; Ghana AIDS Commission 2014:10). Hospitals are still struggling to deal with the issues of stigma and discrimination towards patients with HIV amongst their staff. Although some studies have been conducted in Ghana on extant knowledge, attitudes and practices towards people living with HIV, those which show any interest in the status of nurses in this regard are hard to come by. Nurses as frontline health professionals play a pivotal role in the care of HIV infected patients (Van Bekkum & Hilton 2013:2) and as peer educators in their communities. Though nurses' role as peer educators in their communities is largely recognised in Ghana (Baatiema, Sumah, Tang & Ganle 2016:7), there is no known published study regarding Ghanaian registered nurses' knowledge, attitudes and practices (KAP) regarding HIV, despite numerous studies in other Sub-Saharan African countries. However, information about KAP regarding HIV is needed in order to devise appropriate educational program for nurses to alleviate nurses' anxiety about caring for patients with HIV positive and also alleviate the fear in their communities.

1.4 RESEARCH PURPOSE

The purpose of the studyis to investigate the knowledge, attitudes and practices towards patients living with HIV and AIDS among nurses in Ghana in order to make recommendations for enhancing the care and support of those patients.

1.5 RESEARCH OBJECTIVES

The objectives of this study were to:

- assess nurses' HIV/AIDS-related knowledge;
- ascertain nurses' attitudes towards patients living with HIV and AIDS;
- investigate the current practices of nurses towards patients living with HIV and AIDS; and
- provide recommendations for addressing gaps and misconceptions identified.

1.6 RESEARCH QUESTIONS

- What knowledge do nurses in the Kumasi Metropolis have on HIV and AIDS?
- Does the nurses level of knowledge reflect on their attitudes and practice?
- What are the attitude of nurses towards persons living with HIV and AIDS?
- Are the nurses' attitude favourable or unfavourable?
- What are the current practices of nurses towards persons with HIV and AIDS?
- Do nurses adhere to the standard universal precautions on infection prevention and control?

1.7 SIGNIFICANCE OF THE STUDY

Nurses being health professionals at the forefront of the HIV/AIDS epidemic are well acknowledged globally. It is therefore essential to identify some gaps and misconceptions relating to occupational HIV transmission, disease presentation, and HIV risk prevention among nurses. This study will contribute towards providing a baseline analysis of the mentioned gaps and misconceptions in order to make

recommendations for addressing these, to enhance nurses' training. This, in turn, will lead to the development of policies and training programmes aimed at capacitating nurses, and improving the effective management and relation with HIV/AIDS patients.

1.8 DEFINITIONS OF KEY CONCEPTS

1.8.1 AIDS: Acquired Immune Deficiency Syndrome is a spectrum of diseases caused by infection with the human immunodeficiency virus (HIV) (WHO 2018a:1). In this study, AIDS will refer to a disease and illness associated with stigma, discrimination and prejudice at the clinical setting.

1.8.2 Attitude: the extent of an individual's show of a positive or negative behaviour towards a particular object (Wilson & Scior 2015:2). In this study, attitude will refer to a display of a negative or an optimistic behaviour towards a patient infected with HIV.

1.8.2 HIV: the human immunodeficiency virus is a type of virus that attacks the cells of the immune system, destroying or impairing their function (WHO 2018a:1). In this study, HIV will refer to the viral organism responsible for the signs and symptoms of AIDS

1.8.3 Knowledge: familiarity gained through experience or learning (Limaye, Sullivan, Dalessandro & Hendrix-Jenkins 2017:3). In this study, knowledge will refer to the facts, information, and skills acquired on HIV and AIDS through experience and education.

1.8.4 Nurse: a health care professional who is concerned with caring for individuals, families, and communities, ensuring that they attain, maintain or recover optimal health and functioning (WHO 2018b:1). In this study, a nurse will be any person who has been licensed by the Ghana Nurses' and Midwifery Council to practice nursing and is involved in the care of HIV and AIDS patients.

1.8.5 Practice: prevention mechanisms/exercises aimed at reducing risk (Basini 2013:39). In this study, practice will refer to repeated exercises by nurses caring for persons living with HIV and AIDS in a hospital setting.

1.8.6 Primary Health Care: This is an essential form of health care based on scientific knowledge and skills and is made universally accessible to individuals and families in the community (Canadian Nurses' Association 2018:1). In this study, primary health care will refer to the healthcare facility where HIV management service is provided to the general public.

1.9. OPERATIONAL DEFINITIONS

Under this section, the researcher sought to operationalise the dependent and independent variables.

1.9.1 Dependent variables

1.9.1.1 Knowledge a dependent variable will refer to the facts, information, and skills acquired on HIV and AIDS through experience and education. Knowledge will be measured by a 28-item knowledge scale, based on an instrument developed in 1987 by Eckstein, and adapted by Delobelle, Rawlinson, Ntuli, Malatsi, Decock and Depoorter (2009:3).

1.9.1.2 Attitude refers to a display of negative or an optimistic behaviour towards patients infected with HIV or diagnosed with AIDS. Attitude will be measured by an AIDS attitude scale developed and introduced in 1992 by Fromen, Owen and Daisy.

1.9.1.3 Practice will mean repeated exercises by nurses caring for patients living with HIV and AIDS. Practice will be measured by a 10 item HIV/AIDS practice scale, which was tested in a KAP study by Delobelle et al. (2009:3). The practices scale will consist

of questions relating to universal precautions adherence, post-exposure prophylaxis (PEP) requirement and availability and behaviour with regard to HIV testing and referral.

1.9.2 Independent Variables

1.9.2.1 Seminars will refer to conferences or meetings organised for the training of nurses on HIV and AIDS.

1.9.2.2 Educational level will refer to the highest level of schooling a nurse has reached or attained.

1.9.2.3 Experience will refer to learning or lessons the nurses have gained over the years through their personal involvement in the care of HIV infected patients. Experience will be measured by the number of years a nurse has worked in their current unit and it should not be less than three (3) months.

1.9 THEORETICAL FOUNDATIONS OF THE STUDY

A theoretical foundation forms the basis for the research study. It is made up of a set of rules and principles and serves as the lens through which predictions and explanations can be made for a variety of phenomena (Grant & Osanloo 2014:16).

1.10.1 Meta- theoretical assumptions

This study drew its theoretical foundations from Watson's (1988) *Philosophy and Theory of Transpersonal Caring*, which is mainly concerned with the way in which nurses care for their patients, and how that caring progresses into better plans to promote health and wellness, prevent illness, and restore health (Wayne 2016:1). Watson's theory has

been adapted by several researchers including (Elbahnasawy, Lawend & Mohammed 2016:57; Ozan, Okumus & Lash 2015:26).

Watson (1988:14) views the human being as a valued person to be cared for, respected, nurtured, understood and assisted; in general, this describes a philosophical view of a person as a fully functional integrated self. The human is viewed as greater than, and different from, the sum of his or her parts.

According to Watson, caring is central to nursing practice and promotes health better than a simple medical cure. The nursing model also states that caring can be demonstrated and practiced by nurses. Caring for patients promotes growth; a caring environment accepts a person as he or she is, and looks to what he or she may become (Wayne 2016:2).

Applying Watson's transpersonal theory of caring to this study was considered necessary as it helped the researcher produce a better analysis of nurses' attitude and practice towards caring for HIV infected patients, as well as to determine whether the Watson's theoretical model is reflected in their actions and judgment. When necessary a recommendation for the integration of Watson's model into clinical practice in Ghana is made.

McCance, McKennea and Boore (1999), cited in Lambour (2013:11), described how the integration of the ideas and values of Watson into the HIV clinic at University of Denver has yielded significant improvement. They indicated that there was a resultant cost reduction, because the nurses were able to prevent admissions, and decrease the length of stays.

1.11 RESEARCH METHODOLOGY

1.11.1 Research Approach

The research approach used in this study is quantitative. Quantitative research allows for the generation of numerical data that can be organised, interpreted, and presented (Polit & Beck 2017:238). Quantitative research always follows the positivist approach because they believe in the empirical testing of the hypothesis. The quantitative research follows a probabilistic model that is determined by previous research. One of its high points is the findings of one study could be generalised to another similar study regardless of it being conducted in a different setting (Polit & Beck 2017:238). In this study, the quantitative research approach was employed, because the researcher sought to study and explain the knowledge, attitudes and practices of nurses through the generation of numerical data.

1.11.2 Research design and method

The study employed a quantitative descriptive cross-sectional design. A cross-sectional study as described by Setia (2016:262) is an observational study that allows the investigator to measure the outcome and the exposure in the population and may study their association. The researcher utilised a 48-item KAP structured questionnaire adapted from the Delobelle, Rawlinson, Ntuli, Malatsi, Decock and Depoorter (2009) to collect data from a sample of the population at a specific point in time. The collected data was analysed, and a determination of the relationship between a variable of interest was made. Adopting a formula developed by Yamane in 1967, a sample size of 247 was generated from a population of 304 registered nurses. These registered nurses were recruited through the five selected hospitals within the Kumasi Metropolis. Using the simple random technique, the questionnaires were self-administered to registered nurses, who satisfied the inclusion criteria, and were willing to partake in the study. The

ethical principles of the Declaration of Helsinki were observed so as to maintain professionalism in this study. The questionnaire was analysed using Graph Pad Prism 6 and Statistical Package for the Social Sciences (SPSS) Version 23.0. Further analyses were done with Spearman's RHO correlation to test for association among subgroups. Detail information regarding the research design and methodology is discussed in Chapter 3.

1.12 SCOPE OF THE STUDY

The target population for this study was all registered nurses working at HIV units/wards/ departments in five selected hospitals providing ART services within the Kumasi Metropolis. Using a simple random sampling technique, a representative sample of 247 willing registered nurses within the study sites were selected for the study.

1.13.0 STRUCTURE OF THE DISSERTATION

Chapter 1 provides the orientation of the study. This includes background information about the research problem, the statement, significance of the research problem. The research problem was discussed together with the aim and significance of the study. The chapter briefly defines terms before considering the foundations of the research and research design and method. Lastly, the chapter outlines the scope of the study and the structure of the dissertation.

Chapter 2 focuses on the review of relevant literature to a give a picture of the background to the research. This chapter introduces HIV and AIDS, along with its diagnosis and management. Related literature on knowledge, attitude and practices of nurses towards HIV infection was also presented.

Chapter 3 focuses on the actual study research design and methodology, paying particular attention to design choice, study population, sampling, sampling procedures,

the research instrument, data collection methods, and analysis. The chapter also looks at the ethical issues covered in the study as well as issues of reliability and validity.

Chapter 4 focuses on data analysis, presentation and description of research findings. Research results are presented starting with sample characteristics, moving on to descriptive and inferential statistics. Lastly, this chapter gave a summary of the findings of the study.

Chapter 5 discusses the research findings concerning nurses' knowledge, attitudes and practices towards patients with HIV and AIDS in Ghana. The chapterendedbydrawing conclusions, outlining the limitations of the study, and making recommendations based on research results.

1.14 CONCLUSION

This chapter outlined the orientation of the study. Background information about the research problem was presented. The chapter delineated the research problem together with aim and significance of the study as it related to knowledge attitudes and practice of nurses towards patients living with HIV and AIDS. The chapter then succinctly defined knowledge, attitude, and practices as they related to this study. The foundations of the research, research design and method were discussed briefly setting the context of the research. Lastly, the chapter outlined the scope of the study and the structure of the subsequent chapters.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discusses the literature review, comprising some of the existing knowledge and findings on this topic. Little is known about the nurses' knowledge, attitudes, and practices at both private and public hospitals. The literature review has therefore focused on the nurses' care for HIV/AIDS patients; along with their knowledge, attitudes, and practice in general.

The literature review provides readers with the necessary knowledge and information that allows for a good understanding of the topic under investigation and provides the foundation on which the new knowledge generated by the study will be based (Polit & Beck 2017:170). The literature review, therefore:

- uncovers conceptual and data-based knowledge related to a particular subject, concept or clinical problem and is used in all aspects of the research process;
- provides new knowledge that can lead to the development, validation, or reinforcement of theories;
- reveals research questions for the discipline;
- provides the latest knowledge for education; and
- uncovers research findings that support evidence-based practice.

2.2 THE SEARCH STRATEGY

Conducting a high-quality literature review is not an automated exercise but it is an art and a science. The review aims to be comprehensive and thorough and incorporates up-to-date references. Secondly, the information in this review was presented in a

systematic manner. Thirdly, clear and properly defined inclusion and exclusion criteria were used. This, according to Polit and Beck (2017:170), prevents the reviewer from getting distracted with data that are not relevant to the study. The criteria for including or excluding a study in this review are outlined in the table below:

Table 2.1 Criteria for inclusion or exclusion of literature in the review process

INCLUSION CRITERIA	EXCLUSION CRITERIA
research articles published not more than five years ago	articles published more than five years ago
the researcher focused on articles related to nurses and healthcare workers knowledge, attitude and practice towards HIV and AIDS	studies published on other populations' knowledge, attitude and practices in relation to HIV were excluded
research articles about HIV/AIDS, its management ,and prevention	research articles not related to HIV and AIDS
open access articles available in full text	research articles not available in full text
research articles published in English	research articles published in other languages

A majority of the source materials used were from scientificjournalsin electronic databasesand other web source materials. The databases used by the researcher included Google Scholar, PubMed central, Elsevier, Sara and George (SAGE) Premier, Electronic book Central and Science Direct. In addition to the above scientific databases, reliable internet sources such as World Health Organization (WHO), The Joint United Nations Programme on HIV/AIDS (UNAIDS), Human Immune-deficiency Virus Point of Care Testing (HIVPOINT), Averting HIV and AIDS (AVERT) and United Nations Government global HIV activities (HIV.gov) were also used. Only fully accessible research articles that focused on HIV/AIDS care were considered.

According to Polit and Beck (2017:171), there are many ways of going about searching for research evidence. It is always prudent to begin a search with some strategies in

mind. First, the researcher began the search for evidence by typing in keywords such as ‘nurses’ ‘knowledge’, ‘HIV’ ‘attitude’, ‘practices’, ‘compliances’, and ‘universal precaution’. The author combinedthesesearchterms using the recommended Boolean approach, as described by Polit and Beck (2017:177) to obtain the search terms ‘HIV and nursing’, ‘Nurses and HIV and knowledge’, ‘Nursing and HIV and attitude’, and ‘nurses and practice and universal precautions’. Citations from relevant studies were also utilised to track down earlier research on which the studies are based. This search approach is called ancestry (Polit & Beck 2017:171). Theinspectionofthe abstracts for articles and table of contentsfor booksenabled the author to determinetheir relevance to the research. Subsequently, the author read through the articles, as well as the introduction, and the band select chapters from the books. During the literature review process, the researcher focused on the global and African contexts of knowledge, as well as the attitude and practices of nurses towards HIV and AIDS.

2.3 LITERATURE APPRAISAL

Often literature searches using internet databases result in an overwhelming volume of results, which can vary in quality. A critical appraisal of the documents helps to reduce information overload and allow the researcher to focus on articles that are relevant to the research question (Polit & Beck 2017:183; Morrison 2017:1). The analysis of this literature comprised critical scrutiny of the different sources resulting in a summary of evidence on the research topic (Polit & Beck 2017:185). All source information that met the inclusion criteria were evaluated synthesised and screened for relevance and appropriateness while keeping the focus on the research question.

The researcher applied the guidelines for critiquing data quality in quantitative studies as described by Polit and Beck (2017:183) The selected studies were critically assessed for validity and reliability (Polit & Beck 2017:183). The researcher reserved personal opinions for the discussion and conclusion. The literature was organised and written with an emphasis on maintaining objectivity as well as avoiding misinterpretation

of findings. A careful content analysis was donewhich led to the identification of main themes and subthemes.

2.4 THEMES

The review of the literature led to the emergence of relevant themes and subthemes. In the subsequent pages, the literature was discussed under the following main and sub-themes.

Table 2.2 Emerged themes and subthemes

Themes	Sub-themes
Overview of HIV/AIDS.	• What are HIV and AIDS? • Epidemiology of HIV and AIDS • HIV subtypes • HIV transmission • Invasion and mutation of HIV • Diagnosis of HIV • Management • Testing • Prevention • HIV/AIDS care and support • Role of Nurses in HIV/AIDS management
Nurses HIV/AIDS-related knowledge.	• Competencies required of the nurse in AIDS care. • General knowledge of Nurses on HIV/AIDS. • Nurses' knowledge of HIV transmission.

The attitude of Nurses towards patients with HIV/ AIDS.	• Negative attitudes. - Discriminatory attitudes. - Stigmatisation attitudes. - Prejudicial attitudes. • Positive attitudes.
Practices of Nurses towards patients with HIV/AIDS	• Adherence to universal precautions • Knowledge and practices of post-exposure prophylaxis
Inter-correlation of knowledge, attitude, and practice	
Knowledge, attitude, practices and Socio-demographic factors	
Conclusion	

2.5 OVERVIEW OF HIV/AIDS

2.5.1 What Is HIV and AIDS

The Human Immunodeficiency Virus (HIV), known to cause Acquired Immune Deficiency Syndrome, destroys or hinders the activity of T-lymphocytes, specifically CD4 and CD8 subpopulations (Van Dam 2017:1). This leads to a continuous decline of the immune system causing immune deficiency, resulting in the progression of AIDS. At a certain point, the immune system is no longer able to function efficiently to combat infections and diseases, paving way for a number of opportunistic infections (WHO 2018a:2). Some of these opportunistic infections include tuberculosis, recurrent pneumonia, toxoplasmosis, and several others. In fact, this stage commonly referred as Acquired Immunodeficiency Syndrome may be characterised by more than twenty (20) opportunistic infections, and HIV-related cancers including Kaposi sarcoma, non-Hodgkin lymphoma, and invasive cervical cancers (WHO 2018a:3).

2.5.2 HIV Subtypes

HIV belongs to a subgroup of retroviruses known as lentivirus, causing a variety of chronic diseases. There are two main known types of the virus, HIV-1, and HIV-2. HIV-2, which was first isolated in West African patients is similar to HIV-1 and also share close characteristics with the simian immunodeficiency virus (HIV Sequence Database 2017:3). HIV 1 accounts for around 95% of all infections worldwide, and HIV 2 has been described as a slow virus due to the reduction in its virulence, resulting in a difference in the pathogen city of HIV 1 and HIV 2. The epidemiology of HIV 1 and HIV 2 differs greatly. For instance, HIV 2 is more prevalent in West Africa, compared to its prevalence in other regions (AVERT 2018a:1).

HIV 1 could be further sub-grouped into group M, N, O and P. Group M of HIV 1 was the first identified virus that causes the majority of HIV infection worldwide, resulting in the HIV pandemic. The Group M subgroup alone is believed to have additional different subtypes: A, B, C, D, E, F, G, H, I, J, K. The varied number of HIV virus results from mutations and genetic variations of the virus (HIV Sequence Database 2017:2).

2.5.3 Epidemiology of HIV/AIDS

Since the beginning of the HIV epidemic, approximately 76 million people have been infected with the virus, with an approximate 35 million people reported dead due to AIDS-related illnesses. In 2017, the number of people newly infected with HIV and the number of people who died from aids related illnesses was approximately 1.8 million and 940,000, respectively (UNAIDS 2018a:1).

Globally, HIV related deaths have fallen, most likely due to the intervention of Highly Active Anti-Retroviral Therapy (HAART). Among children, new HIV infections have fallen by about 35% since 2010, with approximately 180 000 newly infected in 2017, compared to approximately 270 000 in 2010 (UNAIDS 2018a:1). Approximately 21.7 million people with HIV were accessing antiretroviral therapy by June 2017, as

compared to an estimate of 15.8 million in June 2015 and 7.5 million in 2010 (UNAIDS 2018b:1). An estimated 46% percent of people with HIV had access to treatment, and about 77% of HIV positive pregnant women having access to antiretroviral medication for the prevention of HIV transmission from mother to baby (UNAIDS 2017:1).

There has been no reduction in new HIV infections for adults, with about 1.9 million adults acquiring HIV infection yearly since 2010. However, AIDS-associated deaths have seen a reduction of 45% since their peak in 2005, with approximately 1.1 million people dying in 2015 in comparison to approximately two million in 2005. Tuberculosis is the predominant cause of death among the HIV positive; being responsible for a third of AIDS-related deaths (UNAIDS 2018b:1). However,tuberculosis-related deaths have seen a reduction of 32% since 2004. In 2017, an investment of 21.3 billion US dollars was made into the AIDS response in low and middle-income countries. Fifty-six percent of the total resources for HIV in low and middle-income countries were made up of domestic resources in 2015. It is estimated that 26.2 billion dollars will be needed for the aids response in 2020 and 23.9 billion in 2030 (UNAIDS 2018b:2).

2.5.4 Transmission of HIV

HIV is transmittable through unprotected sexual intercourse with an infected individual, contaminated blood product, contaminated needles and syringes, contaminated surgical equipment, or other sharp instruments. It can also be passed on from mother to child during pregnancy, child birth, and breastfeeding (WHO 2018a:1).

HIV is transmitted from an infected person to an uninfected one when an infected body fluid enters the body of the uninfected person mostly through the mucous membranes. This includes oral membranes, vaginal membranes, and the anal membranes. Another way of getting infected with the virus is through the use of infected needles and sharps (HIV.gov 2017:1). An infected mother could pass the HIV to the baby during labour or breastfeeding. HIV could be transmitted to people during procedures such as organ transplantation and blood transfusion. Pre-screening of such tissues and blood before

the donation process is very important and has helped in reducing the spread of the virus (AVERT 2018b:1).

2.5.5 Invasion and mutation of the HIV

HIV must invade cells to reproduce. When HIV gets access to a cell, it converts viral RNA into DNA within the cell by using the enzyme reverse transcriptase. Due to the rapid conversion rate and a compromised immune system, the body is unable to fight HIV infection. This enhances the mutation of the virus. Reverse transcriptase does not have the typical proofreading that happens with the replication of DNA thus making the possibility of mutation more likely. The process continues in such a way that after the formed copies leave the cell, the cell is already damaged, and the infected cell goes on to infect other healthy cells, making it very difficult to eradicate the virus (Wang-Shick 2017: 227,235).

The mutation of the HIV virus has resulted in the evolution of several sub-types of the virus. In the USA, type B is the main subtype, while in East Africa, subtypes A and D are prevalent, subtype C is the prevalent type in Southern Africa, while West Central Africa has the greatest variance in subtypes. In addition, the mutation has resulted in HIV having the ability to outmaneuver both our biological response as well as our scientific responses, such as drug development. Our individual immune systems respond to infections and acquire resistance, this resistance and response can be passed onto future generations (Doyal & Doyal 2013:3).

A virus can be described as genetic material wrapped in a coat of protein molecules. Viruses have no cell walls, and are parasitic furthermore, they can only replicate inside a host cell. HIV is also classed as lentivirus, meaning that it is slow acting. HIV, like many lentiviruses,has been known to have adverse effects on the human brain and the immune system (Lampejo & Pillay 2013:421). The combination of HIV and other major diseases slows down the healing process as the immune system is greatly compromised (Joska, Stein & Grant 2014:4).

2.5.6 Diagnosis

Nurses involved in the care of patients living with HIV/AIDS should receive training on testing and diagnosing of HIV infection. Early detection helps in halting transmission as well as improving the life of the patient (CANAC 2013:7). HIV antibodies could be detected after 45-60 days of infection through screening tests. First timers are expected to come back for retesting after three months since HIV antibodies might not be detectable through enzyme immunoassay (EIA) test or rapid assay test (Davies, Smith, Brown, Rice, Yin & Delpech 2013:524).

The HIV test kits used in most testing centers can detect HIV-1 and HIV-2 antibodies after about 20-30 days of infection (Lampejo & Pillay, 2013:422). Newer test kits that are now in use detect both antibodies and p24 antigens, thereby reducing the window period to between three and six weeks after transmission. A negative test result six weeks after exposure can be concluded to be correct with a high degree of certainty, though it is recommended to take a repeat test after three months for additional reassurance (Alexander 2016:251). Rapid HIV antibody tests are easy to use. They are more useful in situations that necessitate point of care testing (POC). Rapid tests can be performed in 20 minutes, and they do not require special laboratory equipment or extensive personnel training. They are used extensively in developing countries where access to laboratory infrastructure for HIV testing and diagnosis is unavailable (Alexander 2016:251).

The World Health Organization acknowledges four stages of HIV disease progression. The first stage is usually asymptomatic. The second stage is associated with symptoms such as mild weight loss, fungal infections, and infection with herpes simplex virus. The patient is generally unwell as the virus gets replicated and starts spreading around the patient's cells. Stage three is marked by serious signs and symptoms like opportunistic infections, candidacies, fevers, diarrhea, and severe weight loss. The fourth stage is also known as AIDS. It is at this point that the patient becomes very weak and very sick.

During this stage, the patient can have all sort of bacterial infections including extra-pulmonary tuberculosis; pneumocystis pneumonia, toxoplasmosis, and meningitis (AVERT 2017:1, 2)

2.5.7 Management

The management of a patient with HIV and AIDS is discussed under testing, prevention, care and support and role of the nurses in AIDS care.

2.5.7.1 Testing

Many patients have been treated for symptoms closely related to HIV, but since they have not yet been tested, they are misdiagnosed and the treatment offered to them does not work. They may end up spreading the virus and usually end up with a late diagnosis, which makes the management of the disease very difficult. According to a UNAIDS report, almost 70% of the people infected with this virus globally are oblivious of their HIV status (HIV.gov 2018:1). Despite the fact that HIV/AIDs awareness has been greatly emphasised, most people have not yet visited testing centres.

Key factors that would help nurses care better for HIV/AIDS patients need to be put in place in healthcare facilities. For example, there ought to be a routine procedure to test patients for HIV if they suffer from a sexually transmitted infection. Nurses should be able to advise these patients on the importance of proper sexual habits and the importance of testing to eradicate doubt and ensure early treatment if need be. Prior to testing, nurses ought to have a thorough conversation with patients ensuring the patient fully understands the benefits of the test and the options available to the patient regardless of the results. The nurse must ensure that they are professional the whole time and allow the patient to make the decision. Face-to-face conversations are a better way to carry out this procedure. Other suggestions are that the patient is able to comprehend the information. For instance, patients with memory loss problems or mental conditions might need to be dealt with differently, as they may not be able to fully

understand the information or importance of such testing. The law guides nurses on the procedures to undertake when dealing with sensitive health issues for such patients (Smith, Odera, Chege, Muigai, Patnaik, Michaels-Strasser, Howard, Yu-Shears& Dohrn 2016:326; CANAC 2013:7).

2.5.7.2 Prevention

Nurses play a key role in the prevention of HIV/AIDS. Nurses are the first point of contact for patients. Education of the patient is one of the key roles of nurses, and therefore competency in that aspect is a need. According to Fonner, Armstrong, Kennedy, O'Reilly, and Sweat (2014:16), infection with HIV could be prevented through proper sex education. Proper sex education not only reduces the infection rate of HIV but can significantly reduce STI/STDs. The provision of free condoms, eliminating the stigma associated with condom use and sex education to the public, especially adolescents and young adults, leads to a reduction in the spread of the virus. Prevention of the spread of the virus could also be achieved through the provision of clean needles and syringes to injection drug users. The World Health Organization (2015: 1) recommends the use of pre-exposure prophylaxis to individuals who are at high risk of contracting the virus. Pre-exposure prophylaxis is the use of antiretroviral drugs to prevent the spread of infection to high-risk individuals, such as prostitutes, gay men, and injection drug users.

2.5.7.3 Care and support for PLWHA

After the initial diagnosis of patients infected with the virus, patients will require a great deal of counselling, support, and education to enable them tocope with the physical and psychological stress associated with the disease. As mentioned in the previous paragraphs, early detection of HIV and initiation of antiretroviral therapy helps in prolonging the life expectancy of persons living with HIV and AIDS. PLWHA often experience HIV-related stigma and discrimination from their communities including feelings of shame due to society’s views about HIV/AIDS (Chidrawi, Greeff, Temane &

Doak 2016:202). For these reasons, newly diagnosed patients will require empathetic care and support from nurses. Nursing competencies become a significant key to guiding the attitudes of nurses caring for patients diagnosed with HIV and AIDS (Relf & Harmon 2016:210; CANAC 2013:9).

According to Doyal and Doyal (2013:6), the education of HIV positive mothers has led to reduced anxiety and fear of transmitting the virus to their unborn children. This has also lead to safe deliveries and the confidence to cope with the virus.

2.5.8 Role of nurses in HIV/AIDS care and management

The evolution of HIV infection into a chronic disease has implications for nursing across all clinical settings. People living with HIV/AIDS require ongoing health care services as they are potentially at increased risk of developing HIV/AIDS-related short and long-term complications such as cardiovascular, liver disease, accelerated bone loss, metabolic disorders and death (Ali, Magee, Dave, Ofotokun, Tungsiripat, Jones, Levitt, Rimland, and Armstrong 2014:27; Deeks, Lewin, and Havlir 2013:1529). Those able to access medical care and antiretroviral therapy are living longer, healthier and improved lives.

Previous studies (Strike, Guta, De Prinse, Switzer, Chan & Carusone,2014:640; Johnson, Samarina, Xi, Valdez RamalhoMadruga, Hocqueloux, Loutfy, Fournelle…, & Zachry 2015:1220) have posited that PLWHAs will require ongoing medical attention, antiretroviral treatment, and support from nurses. Furthermore, the chronicity of HIV infection coupled with immune suppression may place PLWHAs at the mercy of other illness, which in most cases could warrant hospitalisation. With nurses being at the forefront of the HIV epidemic, they are expected to be knowledgeable about the prevention, testing, treatment, and chronicity of the disease in order to provide high-quality care to people with HIV (Marrazano et al. 2013:1; Suzan-Monti et al. 2015:308).

Challenges such as an uneven doctor to patient ratio in the health systems of developing countries have led to the World Health Organization (WHO) recommending tasks shifting from doctors to nurses, midwives and other paramedic staff in the management of HIV and AIDS (Suzan-Monti et al. 2015:308). Nurses are now required to do HIV counseling and testing, clinical assessment, adherence counseling for the initiation and monitoring of antiretroviral therapy, providing psychosocial support and continuum of care through follow-ups (Suzan-Monti et al. 2015:308; Iwu & Holzemer 2013:43).

The nurses' knowledge level of HIV and AIDS may have an impact on the quality of services provided (Gagnon & Cator 2015:414). The uptake of HIV/AIDS services by nurses has shown significant results. According to Iwu and Holzheimer (2013:50), task shifting to nurses has to lead to increased access to ART, retention in care and improved outcomes in PLWHA. This task-shifting, along with the acute shortage of nurses, has led to increased workload and burn-out in a nurse. Nurses' satisfaction through the provision of incentives is an important indicator of the quality of nursing care. Amidst the increased workload, a flexible shift system can help prevent burnout, and result in a higher quality of care (Makhado & Davhana-Maselesele 2015:6).

2.6 NURSES' HIV AND AIDS-RELATED KNOWLEDGE

Under this section, the knowledge of nurses on HIV and AIDS described with findings of previous studies. The meaning of knowledge, the competencies required of the nurse in AIDS care, nurses' general knowledge on HIV, and knowledge on transmission routes, are discussed below.

2.6.1 Introduction: The meaning of knowledge

Knowledge can be defined as expertise and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject in a

particular field or in general; and facts and information, or awareness of, or familiarity with a fact or situation gained by experience. Knowledge acquisition involves complex cognitive processes: perception, learning, communication, association, and reasoning. The term knowledge is also used to mean the confident understanding of a subject and the ability to use it for a specific purpose, whenever appropriate (Fernando 2015:1). Knowledge is defined as familiarity, awareness, expertise or understanding gained through experience or study (Limaye et al 2017:3). It is the sum of what is known in a certain field, the range of what has been perceived, discovered or learned. According to Fernando (2015:1), three requirements must be fulfilled before a person can say that "he/she knows". These requirements are: first, that the person should know or have knowledge about that the statement is true; second, that the person ought to believe the statement to be true; and third, that the person ought to have valid reasons to believe that the statement is true.

2.6.2 Competencies required of Nurses providing HIV specialty care

Nurses providing care to people with HIV should be competent in the various aspects of HIV/AIDS. Thus, counselling, prevention of HIV transmission as well as knowledge, skill, and attitude (Gagnon & Cator 2015:414). Nurses ought to have the most current information on post-exposure prophylaxis and pre-exposure prophylaxis (Rowniak & Selix 2016:359). Additionally, nurses are expected to possess the necessary skills and knowledge about HIV testing, interpretation of results, as well as pre- and post-test counseling. Nurses are also expected to have adequate knowledge of an antiretroviral regimen including side effects, treatment restrictions, dosage requirements, and frequency. They are also required to be knowledgeable about possible drug interactions, drug resistance, treatment modifications as well as have the competence to address adherence issues (Boehler, Schechtman, Rivero, Jacob, Sherer, Wagner, Alabdljabbar & Linsk, 2016:256). Nurses are, further to this, expected to be able to provide HIV-related counseling relevant to their client's needs (Relf & Harmon 2016:210; CANAC 2013:7).

2.6.3 General Knowledge of Nurses on HIV/AIDS

In a study by Ama, Shaibu and Burnette (2016:147) it was found that 96.96% of study subjects have correct knowledge of the diagnosis of HIV and AIDS. The high level of knowledge observed in that study was attributed to the high level of education of the health workers. About 55% and 75% of nurses had correct knowledge of HIV and AIDS presentation in a study exploring nurses' knowledge, attitudes and practices towards patients with HIV/AIDS in Italy (Marrazano et al. 2013:4). In another study conducted in Nigeria, Som, Bhattacherjee, Guha, Basu and Datta (2015:18), found that nurses were knowledgeable about the basic HIV/AIDS-related information such as causative agent and modes of transmission. However, these nurses had deficiencies in critical areas of HIV/AIDS such as voluntary counseling and practices on infant feeding. Okpala et al. (2017:551) also reported nurses having a good knowledge of HIV and AIDS. Increased awareness and high scores obtained in their study were attributed to increasing in-service training currently underway in urban areas of Nigeria of late.

In the study of Doda, Negi, Gaur and Harsh (2018:25), though all participants had incomplete knowledge of HIV/AIDS and its related issues, the nursing staff were reported to have performed poorly with regards to knowledge on HIV/AIDS preventive issues and post-exposure prophylaxis. In a study conducted in the rural region of India, though, the authors found the nursing staff to have a good knowledge of HIV/AIDS in relation to the 'meaning', 'prevalence and vulnerability', 'stigma and discrimination' and 'counseling and testing'; the nurses, however, had poor knowledge of universal precautions, PEP, symptom management and opportunistic infection and anti-retroviral therapy (Pal, Chattopadhyay, Mandal, & Biswas 2016:131). Seventeen percent of the nurses had an 'excellent' knowledge, obtaining a knowledge score of 90%, while about 77% had a moderate level of knowledge (score of 70-90%). Pal et al. (2016:130) like Okpala et al. (2017) linked the good knowledge displayed by participants to training they received a year before their survey. Conclusively, they stated that there was retention of knowledge among nurses, and recommended the need for repeated in-service training for nurses to boost their HIV/AIDS-related knowledge.

2.6.4 Nurses' Knowledge of modes of HIV transmission

Knowledge and awareness of the modes of transmission of the human immune-deficiency virus is an important step in reducing the fears and anxiety exhibited by nurses caring for people living with the virus and AIDS. Lack of knowledge especially on HIV transmission and misconceptions surrounding the spread has been identified by several researchers (Som, Bhattacherjee, Guha, Basu & Datta 2015:18; Kashtoori, Sumarni, Kee, Lim, & Normala 2016:52) as the number one reason determining nurses' discriminatory attitudes towards PLWHA. Farotimi et al. (2015:709) observed that poor knowledge of HIV and AIDS was a predictor of stigmatisation towards PLWHA. A study by Iwoi et al. (2017:5) also noted that the lack of HIV related knowledge was linked to the demonstration of fear, stigmatisation, and unwillingness to care for PLWHA.

Studies investigating the levels of knowledge of HIV transmissions among nurses and other health disciplines have revealed varying knowledge levels and scores with others describing their study participants' knowledge as high (Kashtoori et al. 2016:52; Dhital, Sharma, Poudel & Dhital 2017:48; Wu, Xue, Dimpyshah, Zhao, Hwang & Zhuang 2014:366) and moderate (Shivalli 2014:4). In the Wu et al. (2014:366) study, while the overall HIV related knowledge was shown to be inadequate among participants, their knowledge score on HIV transmission was high. However, a worrying trend became evident among study participants scoring high for the transmission of HIV through mosquito bites. This lack of HIV transmission knowledge, according to Wu et al. (2014:366) may explain health care workers' fear of getting infected while working with HIV-infected patients. Iwoi et al. (2017:5) found a rather moderate level of knowledge among the study population. A breakdown of their knowledge showed the majority (82.4%) scored moderate and 3.1% scored high. Iwoi et al. (2014:366) operationally defined moderate and high knowledge as a score of 5-9, and above 10, respectively.
Marrazano et al. (2013:4) confirmed the evidence that the strongest area of knowledge among nurses seemed to be modes of HIV transmission, while their weakest area was HIV path physiology. Sixty-five percent of nurses in that study had correct knowledge

about HIV modes of transmission. Results of Shahzadi, Kousar, Jabeen, Waqas and Gilani (2017:162) also revealed satisfactory knowledge of HIV transmission among nurses.

In relation to the route or modes of transmission, many HCW believed that HIV is transmitted through unprotected sexual intercourse, and illicit drug use (Ledda et al. 2017:6). Similar to Ledda et al. (2017), Iwoi et al. (2017:5) revealed that 96.6% of study participants were aware of the fact that HIV is transmitted through unprotected sex with an infected person. Two-thirds of the population knew HIV to be transmitted through the placenta of an infected mother. Only a few (3.1%) harboured the erroneous belief that HIV is transmitted through an insect bite. The findings of Iwoi et al. (2017:5) are also identical to the findings of Wu et al. (2014:366).

In a study investigating nurses' knowledge and practices of post-exposure prophylaxis (PEP) towards occupational exposure to HIV, the majority of the nurse could not correctly identify high-risk bodily fluids for HIV transmission. Only a fifth of the study participants had correct knowledge of high-risk bodily fluids (Aminde, Takah, Dzudie, Bonko, Awungafac, Teno, Mbuagbaw & Sliwa 2015:10). Similar to Aminde et al. (2015:10), Faromoti, Fernandes & Chima (2013:6) also reported 54.2% of its participants were not aware of the degree of risk for exposures through blood spillages on an unbroken skin. More than 50% of the participants also had no knowledge of the level of risk imposed on persons exposed to HIV infection through needlestick injuries. However, the overall knowledge of the health workers on HIV/AIDS was satisfactory.

In the Pal et al. (2016:130) study, 85.3% could correctly identify modes of transmission of HIV while 77.8% had correct knowledge about HIV prevention. With a mean score of (38.05 ± 4.91), the overall knowledge of the majority of nursing students (76.8%) was indicated to be good. However, their knowledge of the modes of transmission of HIV was inadequate and had misconceptions about the spread of HIV. This, according to the researchers, was an indication of a huge knowledge gap and suggested the need for training of nursing students in this regard (Dharmalingam et al., 2015:6). In Vienna, Lao PDR, less than 50% of the nurses and medical doctors had received formal training

on HIV and AIDS-related issues (Vorasane et al., 2017:10). In Turkey, a study was conducted to assess the knowledge and attitude of nurses in relation to HIV/AIDS. The study also found nurses had misconceptions or incorrect knowledge regarding the modes of transmission (Koç, Öztaş & Ceylan 2017:87).

2.7 NURSES' ATTITUDES TOWARDS PATIENTS LIVING WITH HIV

Cherry (2018a:1) wrote that attitudes are shown through a spontaneous expression and that our attitudes often lack words and instead shows in our body language, intonation, and gaze. Further, attitudes are also defined as a disposition for certain behaviour, as a way of looking at things surrounding us. An attitude means deflecting from a neutral standpoint. According to Cherry (2018a:2), attitudes based on defective information or foundations are seen as prejudices. Prejudices can be directed toward a group of people, whoare then judged on the basis of inadequate information and knowledge.

Attitudes are gained through experience and contact with the world around us. They may be altered by new experiences and information. Essentially, attitudes are formed through a learning process, which can occur in a number of ways: classical conditioning, operant conditioning, observational learning, and imitation (Cherry 2018a:2). The nursing of HIV-positive and AIDS patients requires special skills. Staff caring for those patients need to acquire new attitudes, knowledge,and skills, as they become involved in the multi-disciplinary problems of AIDS care and prevention (Makhado & Davhana-Maselesele 2016:1).

A number of studies on health care workers' attitudes toward HIV and AIDS have revealed relatively similar results. The negative attitudes and bias of care providers towards people living with HIV are reported across the world, and care providers also admit that there is reluctance among some of them to provide adequate care (Zarei, Joulaei, Darabi, Mohammad & Fararouei 2015:297; Don et al., 2018:6; Ishimaru et al 2017:4).Some studies have described the attitude of some nurses as being

positive(favourable) and need to be encouraged (Ishimaru et al., 2017:4; Ledda et al., 2017:4).

In the subsequent pages, the researcher shall describe the various forms of positive and negative attitudes displayed by nurses in their work environment from previous literature and findings of studies across the globe that serves as evidence of acts and behaviours of nurses depicting either negative or positive attitudes. Where necessary the researcher shall quote figures, rates, and percentages to support the claims of such favourable or unfavourable attitudes.

2.7.1 Negative attitudes

Several studies have suggested health workers including nurses hold negative attitudes towards people living with HIV and AIDS (Manganye, Maluleke & Lebese 2013:36; Ishimaru et al., 2017:4; Wada, Smith & Ishimaru 2016:4). Such negative attitudes come in the form of discrimination and stigma. HIV-related stigma and discrimination refers to negative attitudes, abuse, and prejudice toward persons diagnosed with an HIV infection. Discrimination and other human rights violation of PLWHA may occur in health care settings with the consequence of preventing PLWHA from accessing health services, treatment, and enjoying quality health care (UNAIDS 2017:3).

Throughout the world, stigma, discrimination, exclusion, and inequality continue to make people susceptible to HIV. Research has shown that the major challenge of undermining the national response to HIV is stigma and discrimination (UNAIDS 2017:2). Stigma and discrimination undermine all efforts to reach out to people with HIV information, HIV testing, treatment,and HIV preventive modalities to reduce their risk of infection. Research has also shown that fear of stigma and discrimination discourages PLWHA from disclosing their status, even to family members and sexual partners, and undermines their ability and willingness to access and adhere to treatment (UNAIDS 2014:1).

2.7.1.1 Discriminatory attitudes

Discrimination as operationally defined in this study is the biased or prejudicial treatment of persons diagnosed or perceived to be HIV positive in a less favourable or fairly manner by nurses. HIV-related discrimination also refers to the unjust and unfair treatment of persons living with HIV. HIV-related discrimination is often based on stigmatising, prejudicial attitudes and beliefs about certain groups, population, sex, behaviour, practices, illness, and death (UNAIDS 2014:2). Discrimination can also be a response to prejudice (Wagner,Trevor, Hart, McShane, Margolese & Girard 2014:2405). HIV-related discrimination has been found to be one of greatest obstacles to effectively manage the epidemic and curbing behaviours that lead to increased HIV transmission (Dong, Yang, Peng, Pang, Zhang, Zhang, Rao,Wang & Chen 2018:1). Discrimination and other human rights violations might occur in health-care settings, preventing people from accessing health care.

HIV-related discrimination in health care settings can take many forms, including mandatory HIV testing without the consent of patients or counselling. Health workers may avoid or reduce contact with PLWHA, unnecessarily isolating patients with HIV/AIDS, delaying or denying them treatment, or even creating the demand for payment for services which are otherwise free (UNAIDS 2014:2). Discriminatory attitudes held by health providers may also lead them to make judgments about a person's HIV status, behavior, sexual orientation or gender identity, leading individuals to be treated without respect or dignity (UNAIDS 2017:4). Discrimination at the clinical care setting could also include denial of maternal health services, violation of patients' privacy and confidentiality, including disclosure of a patient's HIV status to family members or hospital employees without authorisation (UNAIDS 2017:3).

In a study in China, 77.7% of health workers exhibited acts of discrimination against PLWHA while administering them care (Don et al., 2018:6).The most common acts of discrimination were forced detection, differential treatment, disclosing information, and refusing treatment. A greater percentage (65.3%) of the healthworkers discriminated

against PLWHA by administering HIV antibody tests to them without their consent. More than 50% of the healthworkers gave differential treatment, and this was based on their HIV status of the patients. Forty-six percent (46.4%) of the health workers disclosed a patient's HIV status to a colleague who was not directly involved in the care of such patient, and 38.6% indicated they had refused to treat PLWHA in the past. Furthermore, it was noted that health workers give differential treatment and disclosed HIV status inorder to protect themselves by applying precautions when dealing with PLWHA (Don et al., 2018:6).

In Vietnam, a study conducted to investigate nurses willingness to care for HIV infected individuals, Ishimaru et al. (2017:4) found that nurses who have discriminatory attitudes and stigmatised attitudes towards HIV were less willing to provide care for individuals diagnosed with the viral infection.In Thailand, Pudong,Prakongsai,Srithanaviboonchai, Chariyalertsak, Smutraprapoot, Sirinirund and Nyblade (2014:1) found that over 80% of healthcare workers had at least one negative attitude to HIV, while 20% said they knew colleagues who were unwilling to provide care or provided substandard services to people living with HIV. A little over 34% of the participants were worried about contracting HIV through touching clothing and bedding belonging to PLWHA, while 18.4% reported seeing healthworkers refusing to render care to PLHWA in the past 12 months in their facility. About 31.8% of participants reported using unnecessary personal protection measures, such as wearing double gloves when interacting with people living with HIV. Twenty-five (25%) of people living with HIV surveyed said that they avoided seeking healthcare for fear of disclosure or poor treatment, while a third had their status disclosed without their consent.

Fear and worry of contracting the virus was a key contributing factor to discriminatory attitudes (Ekstrand, Ramakrishna & Heylen 2013:09; Don et al., 2018:6). According to Wada et al. (2016:3,4), anxiety regarding the potential risk of infection from people infected with HIV and a prejudicial attitude may influence the acceptance and willingness to care for infected patients. In their study, 41% of the nurses felt reluctant to care for patients based on their HIV status.

At a tertiary hospital in KwaZulu-Natal, South Africa, 45.8% of the health worker said they hadwitnessed patients going through a mandatory HIV testing without their consent or the appropriate counselling during their preoperative phase of surgery. Fifty-one (51%) percent wore gloves for non-invasive procedures on HIV positive patients, while 9% had observed senior healthcare practitioners refer HIV infected patients to be seen by junior colleagues who are less experienced (Famoroti et al., 2013:6). A recent UNAIDS report on stigma and discrimination in 19 countriesshows that one in four people living with HIV have suffered discrimination in the hands of health workers and one in three women living with HIV have experienced at least one form of discrimination in their quest for sexual and reproductive health (UNAIDS 2017:1).

2.7.1.2 Stigmatizing attitudes

The Joint United Nations Programme on HIV/AIDS (UNAIDS 2014:2) defines HIV related stigma as the negative feelings, beliefs and attitudes towards people diagnosed with or perceived to be HIV positive.HIV-related stigma among health worker has been attributed to misconceptions about the means through which HIV is transmitted. In Lao PDR, about 50% of both nurses and doctors from 12 selected hospitals in Vietenna show a high level of unacceptable stigmatising attitudes towards the HIV infected patients in their care (Vorasane at al., 2017:10).

In Iran, a cross-sectional study investigating how stigmatised attitudes of health care providers serve as a barrier to delivery of health services, it was found that all health workers had some degree of stigmatised attitude toward patients diagnosed with HIV and AIDS. The level of stigmatisation was low to moderate among the majority of the participants. High levels of irrational fear among nurses in relation to HIV transmission was a key factor contributing to stigmatisation attitudes of participants (Zarei, Joulaei, Darabi, Mohammad & Fararouei 2015:297).

2.7.1.3 Prejudicial attitudes

Prejudicial attitudes refer to racism, sexism and homophobia for a particular group with common defining characteristics (Dinh, Holmberg, Ho & Haynes 2014:57). In this case, persons living with HIV and AIDS. Prejudice also refers to a baseless and usually negative attitude towards members of a group and involves prejudgements that are usually negative. Common features of prejudice include negative feelings, stereotyped beliefs, and a tendency to discriminate such groups (Cherry 2018b:1).

A study of health workers attitudes in urban health facilities in India found not only actions of discriminatory attitudes, but also prejudicial attitudes. While 55-80% of health workers displayed a disposition to prohibit women living with HIV from having children, 94-97% endorsed mandatory testing for female sex workers and 50-83% stated that people who became infected with HIV through sex or drugs "got what they deserved" (Pal et al., 2016:130). Similarly, in Thailand, in an effort to reduce HIV related stigma and discrimination in health care settings, the Ministry of Public Health found that 42.5% of health workers agreed with the statement that “PLWHA should be ashamed of themselves” (Pudong et al., 2014:1).

In a descriptive cross-sectional study in a tertiary health facility in KwaZulu-Natal, South Africa, the perception that PLWHA deserves their illness, as they are seen as promiscuous men and women, became evident. The authors posited that women suffer stigma, predominantly as prostitutes in some cases, as 54.5% of the health workers responded in the affirmative to the statement "women prostitutes are responsible for the spread of HIV in our community" ($p \leq 0.0001$). The health workers blamed the spread of HIV with the community on promiscuous men and women (Famoroti et al., 2013:6). In Iranlikewise, the majority of the health workers were unwilling to provide health services to prostitutes and homosexual patients. A majority also attributed their unwillingness to care for such patients to their involvement in unethical behaviour. The health workers showed more willingness to care for injection drug users more than prostitutes and homosexuals. A univariate regression analysis showeda correlation between health workers’ judgemental stigmatised attitudes and their practice of religious doctrines. Their negative attitudes towards PLWHA was linked to the fact that the acquisition of HIV is often as a result immoral behaviour (Zarei et al., 2015:298).

2.7.2 Positive attitudes

Positive attitudes represent a significant act or skill for rendering quality and unbiased medical care to persons infected with HIV (Ishmairu et al., 2017:2). In the Zarei et al.(2015:297) study, participants who have had previous contacts and have cared for people living with HIV while performing their normal duties showed more positive attitudes (45.5%) to PLWHA.In Vietnam, of the 400 nurses sampled for a study investigating nurses willingness to care for HIV infected patients, 15.8% were more willing and 40.0% were somewhat willing to care for such patients. willingness to care for HIV infected patients was significantly associated with confidence in protecting oneself against infection with HIV. Thus,the availability of resources and compliance with the standard precautions was a positive element contributing to a positive attitude in nurses, such as willingness to care. Adherence to infection control measures not only serves to protect nurses but also help them to render quality care (Ishimaru et al., 2017:5).

Nurses caring for HIV-infected patients are often stigmatisedagainst due to the historical events surrounding the disease, and cultural beliefs. Such nurses may often avoid going near HIV-infected individuals admitted to their wards,for fear of prejudice from family members and colleagues. The avoidance behaviour was negatively associated with nurses willingness to care. Additionally, the fear of contracting the virus through their contact with patients was negatively associated with their willingness to care for HIV-infected patients (Ishimaru et al., 2017:5). Despite the relation of fear to nurses willingness to care for PLWHA by Ishimaru et al. (2017:5), a cross-sectional study conducted at the University Hospital in Southern Italy observed that although nurses undeniably have fears for contracting HIV, their conscience and integrity gave rise to the display of some positive attitudes by accepting PLWHA (Ledda et al., 2017:5).

2.8 NURSES' PRACTICES TOWARD PATIENTS WITH HIV AND AIDS

Human activities can be classified as 'deliberate' or 'non-deliberate' acts. Deliberate acts are sourced from human volition while non-deliberate acts are outputs of circumstances or situation. A practice activity, whether deliberate or not-deliberate can be explained by some underlying working principle (Ayeni & Ayeni 2013:116). According to Ayeni and Ayeni (2013:116), there may not be a practical activity that is not founded on a working principle. The philosophical views of Somekh (2003) as cited in Ayeni and Ayeni (2013:116) state likewise that knowledge (theory) and practice are interrelated.

Interpreting the philosophical views of the above authors, nurses would then require a firm knowledge of infection prevention precaution inorder to exhibit the best precautionary measures taken to haltHIV cross-transmission. In a study in Japan, the authors had no doubt, nurses may be at risk for percutaneous injuries and exposure to HIV-contaminated blood and/or fluids leading to the fears, anxiety and negative attitudes surrounding their work; however, knowledge, adherence to safety precautions and confidence in their own skills will help advance their course to providing quality care and showing positive attitudes (Wada et al. 2016:4).

In Nigeria, Ogoina, Pondei, Adetunji, Chima, Isichei and Gidado (2015:20) found the overall knowledge scores of health workers on standard precautions to be generally high, especially in relation to knowledge of hand hygiene. The study, however, revealed poor knowledge of injection safety. About 50% of the study participants were still ignorant of the World Health Organization's recommendation that sharps/needles ought never to be recapped, bent or broken.A study by Sarani, Balouchi, Masinaeinezhad and Ebrahimitabs (2016:197) showed that most nurses had poor knowledge (43%) of infection prevention precaution about hospital-acquired infection (HAI) control. The highest levels of knowledge were related to hand hygiene, with a mean of 74.5±24, and precautions to avoid needlestick injuries, with a mean of 70±3.

2.8.1 Adherence to universal precautions among nurses\

Universal or standard precautions are an evidence-based clinical practice developed by the centre for disease control (CDC) to protect health workers from exposure to all human blood and other potentially infectious materials (Chatrath 2017:2; Suri and Gopaul 2018:2). Standard precautions include the use of hand washing, appropriate personal protective equipment such as gloves, gowns,and masks whenever touching or exposure to patients' body fluids is anticipated (CDC 2018:3). Mandatory hand hygiene before and after contact with patients is the most significant procedure for preventing cross-contamination and must be seen as a priority (Suri and Gopaul 2018:2; Chatrath 2017:3). The CDC recommends the wearing of gloves and other PPEs for all activities carrying a risk of exposure to body fluids, blood, secretions or excretions, sharps or contaminated instruments (CDC 2018:3). Prevention of percutaneous injuries with sharps is an essential part of standard precautions. To prevent needlestick injuries healthworkers are mandated to discard used needles immediately after use and not recapped, bent, removed from the syringe, or otherwise manipulated (Wisconsin Department of Health Service 2018:2).

Healthworkers all over the world are faced with the occupational hazard of being exposed to blood-borne pathogens during their routine work at triage areas, emergency units, intensive care units, and wards (Chatrath 2017:2), with nurses being the most vulnerable (Aminde et al., 2015:1). Worldwide, almost three million HCWs experience percutaneous exposure to bloodborne pathogens each year (Chatrath 2017:2). It is often not known if the blood of patients seeking medical care contains HIV and/or other infectious pathogens. Due to this, efforts ought to be made to avoid direct contact, mucous membrane exposure, and sharp injuries (Suri & Gopaul 2018:2).The careful adherence to existing infection control precautions, provision and proper use of personal protective equipment (PPE), and can help minimise the risk of exposure while caring for patients with HIV (CDC 2018:3; Chatrath 2017:2). Unfortunately, studies conducted to evaluate the prevalence of occupational exposures have shown that there

is non-adherence or poor adherence to universal precautions by nurses and other paramedics (Marković, Branković, Maksimović, Jovanović, Petrović, Simić & Lešić 2014:792; Nderitu, Mill & Richter 2015:636).

A World Health Organization report cited by Auta et al. (2017:831) estimates that exposure to 2.5% of HIV cases and 40% of Hepatitis B and C cases were recorded in health workers due to percutaneous injuries. An estimated 6600 Hepatitis B virus (HBV) infections, 16000 Hepatitis C virus (HCV) infections and up to 1000 HIV infections occur every year. About 1100 of these cases results in death and disability. According to the WHO report, 90% of these incidences occur in developing countries where resources for and adherence to universal precautions are inadequate (Auta et al., 2017:831).The risk of occupational exposure to HIV infection among health workers was reported to be high in a study conducted in Tanzania. About (48.6%) of health workers suffered needlestick injuries and exposure to HIV infected bodily fluids within a 12 month period. However, only half of them with a history of exposures were using personal protective equipment at the time of the injury (Chalya, Seni, Mushi, Mirambo, Jaka, Rambau, Mabula& Kalluvya 2015:9).

Of the 116 registered nurses surveyed from the Northwell Health in Great Neck, New York to assess their compliance with universal precautions,the authors found that less than 20% (17.4%) of the nurses comply with all the nine listed standard precautions by the authors. The nine standard precautions included: “Provide care considering all patients as potentially contagious,wash hands after removing gloves, avoid placing foreign objects on my hand, wear gloves when exposure of my hands to bodily fluids is anticipated, avoid needle recapping, avoid disassembling a used needle from a syringe, use a face mask when anticipating exposure to air-transmitted pathogens, wash hands after providing care, and discard used sharp materials into sharps containers.” The precaution with the highest compliance rate was wearing gloves (92%), followed by hand washing (82%) and then use of face mask (70%). The authors emphasised the need for finding reasons for noncompliance of universal precautions among nurses (Becker’s Hospital Review 2016:1).

A meta-analysis of occupational exposures to bodily fluids among health workers in 21 African countries found that about twothirds (2/3) have been exposed in their entire carrier while nearly onehalf (1/2) were exposed to bodily fluids annually. Most of these exposures occurred through percutaneous injuries (Auta, Adewuyi,Tor- Anyiin, Ogbole,Ogbonna & Adeloye 2017:839).The practice of recapping needles is still common among health workers in developing countries, even though it is prohibited. Recapping of needles generally remains a significant causeof percutaneous injuries amongst them. In a study by Chalya et al. (2015:10), recapping of needles was rarely practiced by the participant, with only a few cases reported.

In a study conducted in Botswana by Ama et al. (2016:147) to assess the nurses' practice of universal precautions, 71.2% practiced it always, 23.3% practiced it most times, and 3.3% had no idea about universal precautions. In another study conducted in Uganda to explore the experiences of Ugandan nurses in the practices of universal precautions, the authors found that although the nurses had good knowledge of universal precautions, they did not practice it all the time, unless they knew the HIV status of the patient. According to the Ugandan nurses, their inability to practice universal precautions was due to an inadequate supply of human and material resources (Nderitu et al., 2015:636). On the other hand, the nurses in India had correct knowledge of universal precautions and practiced it consistently. The study participants gavea satisfactory response regarding needle disposal. Ninety-eight (98.3%) disposed of used needles by placing them in a cutter. A good proportion of them (65%) practiced hand washing before and after procedures (Pal et al. 2016:130).According to Chalya et al. (2015:11), in-service training of health workers enhances their knowledge and skills. In their study, those participants who had the benefit of receiving training on universal precautions through workshops and seminars had a significantly decreased risk of sustaining needle stick injury and exposures in their workplace compared with those with no training.

2.8.2 Knowledge and Practices of nurses towards Post-exposure prophylaxis (PEP)

Post-exposure prophylaxis provides the single most important opportunity to prevent HIV after accidental exposure to HIV (WHO 2014:1). PEP involves the administration of antiretroviral therapy (ART) over a short duration to reduce the likelihood of HIV infection following exposure to HIV positive source. PEP ought to be initiated as early as possible, ideally within 72hours, for all persons with exposures that have the potential for HIV transmission (Center for Disease Control and Prevention 2018:1). PEP is able to reduce the risk of seroconversion by 80% after accidental exposures. It must be given within 72hrs and for 28 days (WHO 2014:1).

The process of PEP involves first aid, risk assessments, counseling and testing of exposed person and risk assessment for chemoprophylaxis (PEP) initiation and monitoring (Mathewos, Birhan, Kinfe, Boru, Tiruneh, Addis & Alemu 2013:1; Chatrath 2017:3).Studies have reported favourable levels of knowledge on PEP among health workers (Mathewos et al. 2013:4; Ajibola, Akinbami, Elikwu, Odesanya & Uche 2014:4). Despite this, a World Health Organization report shows PEP uptake has been insufficient, where only 57% of people who initiate PEP actually complete the full course (WHO 2014:1).

A study in Nigeria found the overall knowledge of nurses on PEP to be significantly poor, with more than half of the study participants scoring low for knowledge. Hospital ward rounds were the main source of knowledge on PEP for the majority of participants in their study. Four in five of participants identified ward rounds as a source of information (Aminde et al. 2015:10). On the contrary, a study assessing the knowledge, attitude, and practices of health workers towards post-exposure prophylaxis in Ethiopia found that almost all the study participants (95.3%) were aware of PEP as a preventative precaution for occupational exposure to HIV. Out of the population who had heard about PEP, 55.7% knew PEP ought to be taken within an hour HIV exposure. Only 32.1% percent had poor knowledge of PEP and gave incorrect information about

when to start it. In this same study, 78.3% agreed to the statement “PEP can reduce the likelihood of infection with HIV after exposure and 83% knew about the availability of PEP guidelines in their workplace” (Habib, Baye, Awole & Abebe 2018:8).

In the study by Habib et al. (2018:8), of the 33.8% of the study population who had been occupationally exposed to HIV-infected fluids through needle stick injury (16%), cuts from sharps (18.9%), 89.7% took PEPs. The 10% who did not take PEPs did so due to fear of its lack of efficacy and/or its adverse effects. According to Pal et al. (2016:130), 51.7% alluded to taking PEP after exposure to HIV in their work environment. Similarly, in Tanzania, less than one-fifth of health workers exposed to HIV positive sources received PEP, even though PEP services were available in their workplace. A major reason for refusing PEP was due to perceived stigma and adverse effects of anti-retroviral drugs (Chalya et al. 2015:12). Again,in Ethiopia, the majority (63.1%), of the nurses at the Gondi University hospital had adequate knowledge about PEP for HIV. The proportion of nurses who heard about PEP from formal training was 48.7 percent.About 88% of the nurses were aware of the availability of PEP guidelines in their workplace. However, of the 66/195 (33.8%) exposed to HIV sources, 49/66 (74.2%) took PEP, 17/66 (25.7%) of the exposed nurses did not take PEP (Mathewos et al. 2013:4). Also, in a study in Uganda, the authors posited that the majority of the nurses were aware of a written policy on post-exposure prophylaxis in the workplace. However, they had a different understanding of the process they needed to go through after an occupational exposure to HIV or needle stick. Not only this, some of them avoided accessing PEP after a needle stick injury due to side effects of the anti-retroviral drugs and stigma associated with the use of PEP (Mill, Nderitu & Richter 2014:14).

In Nigeria, a lot of the health workers at the Lagos University hospital (83.3%) were aware of PEP. Despite the high level of awareness, the health workers still had inadequate knowledge of PEP, where a little over half (54%) of respondents knew when to start PEP after accidental exposure to HIV. Only about 15.3% knew the correct course for PEP. A majority had a positive attitude towards PEP and were ready to receive PEP after occupational exposure. Despite the display of a good attitude towards

and acceptance of PEP, only 6.3% of respondents who had needle stick injury accepted to use PEP. Of those that accepted PEP, only four completed the prescribed course of PEP(Ajibola et al. 2014 4).

2.9 INTER-CORRELATION OF KNOWLEDGE, ATTITUDE AND PRACTICES

In Lao PDR, the authors showed that there was a correlation between HIV related knowledge and attitudes. Participants with low levels of HIV and AIDS-related knowledge were more likely to have high levels of stigmatisation attitudes to persons living with HIV and vice versa. The study also found doctors with high levels of knowledge on HIV and AIDS were less likely to have internalised shame (Vorasane et al. 2017:10).

Longer years of work experience were found to influence attitudes. It may be explained or hypothesised that health workers gain experience and familiarity with HIV/AIDS while having continuous contacts with PLWHA, and may increase their willingness to provide treatment and services to PLWHA in a more caring, supportive manner (Vorasane et al. 2017:11). In Vorasane et al. (2017:11) they found that nurses and doctors with longer years of work experience were less likely to exhibit feelings of fear, prejudice, and discrimination toward patients diagnosed with HIV and AIDS.

Increased levels of knowledge on HIV/AIDS and its transmission has been associated with increased comfort levels and willingness to care for PLWHA among health workers. Faromoti et al. (2013:5) found that nurses who scored highest for HIV related knowledge also scored higher on questions relating to comfort levels in caring for PLWHA. Faromoti et al. (2013:6) reported on the importance of continuing education to minimise the levels of stigmatisation and discrimination among health workers in sub-Saharan Africa. The study suggested a continuous in-service training and counseling for health workers, as this will lead to a better understanding of HIV/AIDS and better-coping strategies. In-service training ought to include a module on professional ethics andneed

to highlight those laws governing patients right to confidentiality, privacy and right to quality care.

As observed in other studies Ledda et al. (2017:5) similarly found the positive attitudes of healthcare workers (HCWs) to be correlated with high levels of HIV/AIDS-related knowledge and also through on-going in-service training. Predictors for a positive attitude in their study were previous experience in caring for HIV/AIDS patients and HIV/AIDS knowledge.

2.10 COMPARISON OF KNOWLEDGE, ATTITUDE PRACTICES AND SOCIO-DEMOGRAPHIC FACTORS

Male nurses in Lao PDR were found to have a lower level of prejudiced attitudes than female nurses (Vorasane et al. 2017:11). Similarly, Male HCWs in the Faromoti et al. (2013:6) study displayed increased comfort levels while rendering care to PLWHA than their female counterparts. Contrary to the two previous findings, the study Ledda et al. (2017:5) also highlighted the way in which male workers show increased discriminatory and fear attitudes than females.

In the Ishimaru et al. (2017:5) study, age was significantly associated with nurses' willingness to care. Middle-aged nurses between 40 and 49years expressed an increased willingness to care for HIV-infected patients. These nurses may have more positive views about providing care for patients infected with HIV.Contrary to the findings of Ishimaru et al. (2017:5), in Italy, the authors observed that health workers older than 40 had a tendency to display discriminatory attitudes and low tolerance towards HIV-infected patients and drug users (Ledda et al. 2017:5). Wada et al. (2016:4) also showed that younger nurses tend to have less discriminatory attitudes, because, in their time, there have been improvements in HIV/AIDs management with the advent of the antiretroviral therapy, where people are now living much healthier longer lives.Rather, older nurses 50 and aboveshowed more discriminatory attitudes and unwillingness to care for HIV infected patients than their younger counterparts. This

is similar to a study by Ledda et al. (2017:5) showing that employees who are 50 years of age manifest poor acceptance of HIV and AIDS patients.This, according to Wada et al. (2016:4), maybe because the older nurses have been around in the early days of the epidemic, and might have been throughthe trauma of watching people with HIV progress from worsening conditions to death.

In the Faromoti et al. (2013:6) study, there was no significant association between comfort levels and level of education, professional qualification, and years of work experience, however, with a P-value of (P= 0.003), the study showed a significant correlation between gender and comfort levels in rendering care to PLWHA.

2.11IMPLICATIONS OF FINDINGS

A review of the literature on knowledge, attitude and practices on nurses and health workers showedgenerally moderate levels of knowledge, with evidence of misconception about disease transmission and inadequate HIV-related knowledge among health workers. Attitudes were generally favourable, but almost all the studies reviewed reported of one or two forms of negative attitudes towards PLWHA by health workers. Practices of health workers from previous studies generally focused on universal precaution adherence and PEP uptake. Most of these studies hinted at low or poor compliance to universal precaution, and poor uptake of PEP by health workers.

Most of the evidence and reports used in this study were from European or Asian countries, and African countries other than Ghana. There is no published or documented evidence on Ghanaian nurses level of knowledge, attitude,and practices towards PLWHA. Almost all the HIV/AIDS KAP studies in Ghana have focused on medical students, pharmacy students, and other non-health workers populations. This becomes very worrying, knowing that nurses over the years have been at the war front of the HIV epidemic carrying out counseling, testing and management services at their respective health facilities. According to Polit and Beck (2017:4), nursing research has become important in recent times, because findings generated from studies serve as

evidence that guide nurses' practices, and improve the health and quality of life of patients.

With the Ghana AIDS Commission's commitment to end stigma and discrimination in health care settings, and consequently improve PLWHA access to treatment and care, a study investigating nurses knowledge, attitude and practices towards PLWHA is therefore important. Several studies have demonstrated a link between knowledge and attitude. Thus, inadequate knowledge and misconception about HIV transmission are associated with increased fear and negative attitudes among health workers (Wada et al. 2016:4; Ishimaru et al.2017:5; Ledda et al. 2017:5; andFaromoti et al. 2013:5). However, it is proven that education of nurses through in-service training leads to improved knowledge and better attitudes in nurses (Ledda et al. 2017:5; Faromoti et al. 2013:5; Chalya et al. 2015:9).

As discussed previously, it is accordingly essential to investigate the Ghanaian context (that is assessed nurses' knowledge, attitude,and practices towards PLWHA) in order to identify similarities, differences, and exceptions to the existing body of knowledge. When this is done, the Ministry of Health, together with the Nurses and Midwives Council, can devise educational policies aimed at equipping nurses with the right prerequisite HIV/AIDS-related knowledge. This will also go a long way to reducing mentioned fears, as well as to improving nurses attitudes towards PLWHA.

2.12 CONCLUSION

This chapter started by giving a brief introductionto relevant literature. It went on to discuss the search strategy used for the study, appraisal of the literature and the various themes that emerged from the literature search and appraisal. The various themes were then discussed in detail in subsequent pages while elaborating on various findings of related studies. Finally, the identified gaps and the need for this study were discussed under the head ' implications of findings'.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter focuses on the study research design and methodology paying particular attention to design choice, study population, sampling procedures, the research instrument, data collection methods and analysis. The chapter also examines ethical issues covered in the study as well as issues of reliability and validity.

3.2 RESEARCH PARADIGM

A research paradigm is defined as an approach, a model or a guide for developing a research methodology. The word paradigm, which also means a pattern, was designated by Kuhn in 1962 to describe the particular qualities of a conceptual framework. There are two main types of a research paradigm that receive attention, namely the qualitative and quantitative paradigms. In recent years there has also been the emergence of a mixed- method paradigm. Since the time of Kuhn, the debate about which paradigm is best has been ongoing. However, pure scientists believe quantitative research methodology to be the most favoured approach to conducting research (Antwi & Hamza 2015:218). In this study, the quantitative research approach was employed because the researcher sought to study and explain the knowledge, attitudes, and practices of nurses through the generation of numerical data.

3.3 RESEARCH APPROACH: QUANTITATIVE

Quantitative research designs are linked to logical positivism, which is governed by objectivity, measurability, predictability, and controllability. It also has the ability to establish relationships between variables and causal linkages if they exist (Antwi & Hamza 2016:221). The current study primarily applied a quantitative research approach to explain nurses' knowledge, attitudes, and practices through the collection of numerical data that are analysed using mathematically-based statistical methods. This in the view of positivist, allows the researcher to quantify the problem and understand how prevalent it is, by looking for projectable results to a larger population. Quantitative research allows for empirical testing and measurement of attitudes and human behaviour (Polit & Beck 2017:238) through the use of standardised rating scales. This approach was suitable for this study, as the researcher similarly measured knowledge, attitudes, and practices with standardised numeric scales, which were analysed statistically. Matinhure (2015:27) reveals the flexibility and feasibility of quantitative methods for studying various phenomena, such as attitudes, though they do not naturally exist in quantifiable forms.

A quantitative research approach also employs questionnaires and other survey methodologies or instruments for collecting data that can be statistically analysed (Polit & Beck 2017:238). This study likewise utilised a questionnaire in its data collection. Quantitative studies employ sampling techniques that ensure an unbiased selection of participants, who are representative of the larger population and allow for the generalisation of findings (Polit & Beck 2017:222). This study selected participants who are eligible using the simple random sampling approach, thereby ensuring each participant had an equal chance of being selected.

3.4 RESEARCH DESIGN

The research design refers to the overall strategy the researcher chooses to integrate the different components of the study in a coherent, logical way (Labaree 2016:2). Polit and Beck (2017:222) also defined research design as the overall plan for addressing a research question, including specifications for enhancing the study's integrity. The purpose of a research design is to provide a blueprint for the collection, measurement, and analysis of data as well as provide a strategy for answering the research questions (Labaree 2016:6). Research designs can be either quantitative or qualitative.

3.4.1 Descriptive Studies

Descriptive studies involve the measurement of a certain phenomenon (behavior or attitudes) of interest and observed associations in a population of interest in order to estimate certain population parameters (Bowling 2014:215-216; Parahoo 2014:65). These studies do not attempt to manipulate or control the respondents but sought to describe phenomena, explore, and to explain the relationship between variables to generate knowledge (Parahoo 2014:65). .A descriptive study was chosen by the researcher, because this study sought to describe and provide information about the knowledge, attitudes and practices of nurses caring for HIV-infected patients in health care facilities, without attempting to manipulate or control the respondents. Again, this study did not attempt to make any prediction of any occurrence or explain the underlying factors of the variables involved.

3.4.2 Cross-Sectional Study

A cross-sectional study involves the collection of data at a point in time, but with differing study respondents, as opposed to different points in time for the same respondent (Bowling 2014:220; Polit & Beck 2017:239). The cross-sectional study may

be purely descriptive and used to assess the frequency and distribution of a particular phenomenon in a defined population. Data generated from this kind of study can be used to assess the prevalence of conditions in a population. Unlike longitudinal studies, causal statements cannot be made from this type of study since exposure and outcome are measured at the same point in time (Cherry 2018c:1).

A cross-sectional survey design allows the researcher to determine factors that predict the outcomes of interest by examining associations among them. The study design further permitted the extraction of valuable information regarding nurses' knowledge (HIV transmission and prevention), attitudes, and the way in which these eventually translate into practice. In addition, factors that influenced nurses, knowledge, attitude, and practices towards patients living with HIV and AIDS were examined. This was done within the principles of cross-sectional study design, which allows the researcher to make inferences about possible relationships and description of prevailing conditions under study. The above-mentioned factors, together with the relative ease at which the designs can be applied to collect data at low cost, in short period of time with relatively low non-response rates (Polit & Beck 2017:239) informed the researcher's choice of this study design.

3.4.3 Appropriateness of the cross-sectional study design to the current study

Cross-sectional studies provide a snapshot of the frequency of a disease or other health-related characteristics in a population at a given point in time (Cherry 2018c:2). Accordingly, the study was conducted in the present to determine what already existed in terms of knowledge, attitude, and practices among nurses. Data regarding these variables were collected and measured simultaneously at a given point in time. This approach differs from a longitudinal study, where data are collected at different points for each research participant (Cherry 2018c:2).

This type of study uses different groups of people who differ in the variable of interest but who share other similar characteristics (Cherry 2018c:2). Similarly, this current study

used a population who are all registered nurses, work in HIV wards/units/department, and care for people living with HIV. The population used in this study also had differing characteristics, such as age, work experience, gender, level of education, and frequency of in-service training through workshops (Cherry 2018c:2).

As described by Cherry (2018c:2), cross-sectional study design allows researchers to collect data on some different variables to determine how differences in sex, age, educational status etc. might correlate with the critical variable of interest. In this study the influence participants' age, level of education, work experience and workshops attended on nurses' knowledge, attitude and practices were also determined through statistical correlation analysis.

Lastly, these studies are conducted with the aim of assessing the prevalence or burden of an existing health-related problem leading to the formulation of health policies, planning, implementation, monitoring, evaluation and allocation of resources (Setia 2016:263). A cross-sectional study was appropriate, as it identified knowledge gaps, training needs of nurses, and made recommendations to help nurses care and support people living with HIV.

Additionally, the fact that the researcher made no attempt to manipulate the variables but studied and describe the sequence of behaviour change from knowledge, to attitude and then practice as they exist naturally, indicate a valid choice of a non-experimental research design. This characteristic is true for cross-sectional studies (Polit & Beck 2017:240). It can be concluded that the researcher, therefore, chose an appropriate design to address the research problem.

3.4.4 Addressing the issues of a cross-sectional study

3.4.4.1 Choosing a representative sample

A cross-sectional study should be representative of the whole population if generalisations from the findings are to have any validity. The use of the probability

(simple random) sampling technique ensured that all participants within the target population were given an equal chance of being selected. The probability sampling technique, according to Polit and Beck (2017:313), provides an unbiased result, which can be generalised to the target population.

3.4.4.2 Sample size

The sample size ought to be sufficiently large in order to estimate the prevalence of the conditions of interest with adequate precision (PHAST 2017:1). The current study used a sample size of 247 from a population of 304 registered nurses working in HIV units from five different hospitals. The sample size used was sufficiently large, as the researcher used more than three-quarters of the target population. The large sample size used in this study led to increased precision. A determination of the sample size was done using a formula developed by Yamane in 1967.

3.4.4.3 Data collection

As data on exposures and outcomes are collected simultaneously, specific inclusion and exclusion criteria ought to be established at the design stage, so as to ensure that those with the outcome are correctly identified (PHAST 2017:1). Accordingly, this study identified the eligible categories of subjects to participate in the study and excluded those whose characteristics would not permit their inclusion in the study. The data collection tool used was a structured questionnaire. This was self-administered to participants who fit the inclusion criteria and were ready to participate in the study.

3.5 RESEARCH AREA

The study was carried out in the Kumasi Metropolis. The Kumasi Metropolis covers an area of 254km^2 and is located between latitudes 6°35" and 6°4" N and longitudes 1°30" and 1°35" E. The metropolis has a human population of 2,035,064 constituting 43% of the total human population of 4,780,380 in the Ashanti Region. The Kumasi Metropolis is the second largest city in Ghana and serves as the capital of the Ashanti Region (Ghana Statistical Service 2014:1).

Kumasi is the largest cultural center and one of the biggest tourist attractions cities in Ghana. It is also situated in the middle of Ghana and therefore serves as a transit point between all corners of the country resulting in the influx of new people every day. Kumasi has been selected for this study because the cultural attractions and transient nature of the city have made it a prime point for HIV/AIDS prevalence. Kumasi recorded the highest prevalence rate of 3.4% in the year 2015, which was above the national prevalence rate of 1.7%, and is still leading with the highest prevalence rate (Ghana Web 2017:1).

The Metropolis has a number of health institutions both public and private. The Komfo Anokye Teaching Hospital (KATH), Kumasi South Hospital, Suntreso Government Hospital, Tafo Government Hospital, Manhyia District Hospital, Bomso Clinic, Aninwaa Medical Centre, KNUST Hospital, and Kwadaso Seventh Day Adventist Hospital are the health institutions that provide HIV counselling, testing services and antiretroviral treatment in the Kumasi metropolis. Five study sites were chosen to serve the purpose of this study, due to their geographical proximity and similarities with the management of HIV. Thus, they all use the current national guidelines issued by the National AIDS/STI Control Programme for their HIV patient treatment.

3.6 RESEARCH SETTING

This study was conducted in two private health facilities (Clinic and Medical Centre), two public health facilities (University Hospital and District Hospital), and a Teaching Hospital (KATH) in the Kumasi metropolis. The two private health facilities selected

have the longest history of HIV/AIDS management services in the metropolis and have been providing these services since 2006. The two government health facilities were amongst the first health care facilities selected in the metropolis for HIV/AIDS management and have provided services to the public since 2003 and administered Anti-Retroviral treatment to HIV/AIDS patients. The teaching hospital has been at the forefront of HIV/AIDS management since its discovery in Ghana and was the first to introduce ARV treatment in the metropolis.

The teaching hospital has several clinics and directorates, each led by a clinical director, a general manager and a clinical lead, and are supported by heads of service and matrons that lead each of the several service areas within the directorates. Each directorate is subdivided into smaller units or departments, each encompassing a range of specialist services. The HIV clinic is managed under the medical directorate. The clinic has a regular staff capacity of 45, with 20 registered nurses, five nurse assistants, five medical doctors, three pharmacists, three HIV positive personnel employed by the National AIDS Control Programme (NACP) to serve as models, two statisticians who are responsible for data entry, management, report writing and report submission to NACP and two trained adherence counselors, where the nurses doubled as counselors. The clinic has a patient population of over 5000. Though some have been lost to follow up, the majority regularly visit the clinic for treatment. The clinic runs from Mondays to Fridays. On clinic days, work start at 8am and ends at 3pm.

The four other study sites (University Hospital, District Hospital, and the two private health facilities) have one corporate directorate, led by one director or superintendent. These facilities have further subdivisions, such as an out-patient department, a medical/surgical department, obstetrics and gynaecology department, public health units, and paediatric units. They all run HIV clinics, but on separate days, from 8am to 3pm. All four facilities have registered nurses, doctors, pharmacist, adherence counselors, NACP’s models, and data managers working in the HIV clinics. Staff capacity, however, differs in each hospital.

All the HIV clinics at the study sites including the teaching hospital do not admit or detain patients. Services provided are strictly on an outpatient basis. Patients whose conditions require further management with intravenous infusions, blood transfusion, intravenous antibiotics, and further monitoring and observation are admitted into the medical wards. Due to this, registered nurses working in these wards were included in the study.

3.7 POPULATION

Polit and Beck (2017:306) define a population to be all the individuals or objects with common, defining characteristics, in which the researcher is interested. A population is defined as a well-defined collection of individuals or objects known to have similar characteristics. All individuals within a population often have common binding characteristics. Two types of population emerge in research: the target population, and the accessible population, also known as the study population.

3.7.1 The target population

The target population refers to the entire collection of living or non-living subjects to which the researcher is interested in generalising the findings. The target population is also known as the theoretical population usually has varying characteristics (Polit & Beck 2017:306). The target population in this study was all registered nurses working in the five selected health facilities.

3.7.2 The accessible population

The accessible population is a subset of the target population and is also known as the study population. This is the population to which the researcher can apply their conclusions. It is from this population that the sample is drawn (Polit & Beck 2017:306).

This study was limited to the accessible population and was operationally defined as the proportion of the target population who met the eligibility criteria.

In this study, the accessible population was all the registered nurses employed to work in the HIV units/departments/wards in the selected health facilities in the Kumasi metropolis and met the inclusion criteria. The total number of registered nurses employed to work in the HIV units in the five selected health facilities is 304.The HIV wards in the two private health facilities, the clinic (Facility A) and the medical centre (Facility B) have a nurse population of N= 15 and N= 36, respectively. The District (Facility C) and the university hospital (Facility D) have a population of N= 55 and N=52, respectively, in their HIV units. The teaching hospital (Facility E) has a nursing staff population of 146 in the medicine directorate where cases of HIV infection are admitted and managed. The total population therefore accessible to the researcher was three hundred and four.

Inclusion criteria are those characteristics that prospective study subjects must have in order to be included a study while exclusion criteria are those characteristics that disqualify potential study subjects (Polit & Beck 2017:306).

The inclusion criteria included:

- participants who are qualified nurses and have registered with the nurses and midwifery council of Ghana;
- participants who have worked in their current unit/ department/ ward for at least three months; and
- participants who were between the ages of 18 and 65 years.

The exclusion criteria included:

- hesitation to participate in the study;
- refusal to participate in the study;
- participants who were not directly involved in the care of HIV and AIDS patients; and

- nurses who were on leave at the time of the data collection.

3.8 SAMPLING AND SAMPLING METHODS

Under this subsection, the sampling method, sampling technique and the sample size are described in detail. An explanation and description of the procedure that was followed to choose the representative sample for the study are also provided below. The generation of the sample size with a formula is also described.

3.8.1 Sampling

Grove et al. (2013:37) define sampling as the process of selecting subjects, events, behaviours or elements for participation in a study. The proportion of the population selected ought to be representative of the entire group, and have characteristics similar to that of the population under study to allow generalize ability of the results to represent the population; and should not be excessively larger too small (Grove et al. 2013:37).
In this study, probability sampling was employed using a simple random sampling method. Probability sampling involves the selection of study participants from a population in a random manner. Random selection technique according to Polit and Beck (2017:313) gives individual members of a group or a population an equal, independent chance of being selected.

3.8.2 Simple Random Sampling

Simple Random sampling is the most basic probability sampling method and involves the development of a sampling frame. A sampling frame is the list of population elements (Polit & Beck 2017:313). From the sampling frame, the researcher selected in a random fashion the sample of the desired size. This study utilised simple random sampling to select the study participants. The study applied the principles and

techniques of a simple random sampling method as described by Polit and Beck (2017:313) to randomly select the sample used for this study. This is described in detail under the ‘sampling technique’. The researcher adopted this method of sampling because samples selected in this manner are not subject to the researchers’ biases (Polit & Beck 2017:313). This also guarantees that the differences between the study sample and the target population are purely a function of chance. The advantages of a simple random sampling are its ease of use and its accurate representation of the larger population (DePersio 2018:1). It may be argued that there is no guarantee that the sample selected through random selection will be representative of the population, but the probability of selecting a sample which will be unrepresentative of the population through random sampling is low (Polit & Beck 2017:313). The reason representativeness has become a primary concern in statistical sampling is that it allows the researcher to draw conclusions across the entire population.

3.8.3 Simple random sampling technique

Sampling techniques describe the “how” of randomly selecting the study participants. It refers to the strategies applied by researchers during the statistical sampling process. This includes the processes followed to extract the sample of the desired size from the population. The technique used incorporated the principles of simple random sampling, which ensures each participant is selected independently of the other members, and that each member of the population has an equal chance of inclusion into the study (Polit & Beck 2017:313). This researcher applied the manual lottery technique to select the representative sample for the study. According to DePersio (2018:2), the manual lottery method works well for smaller populations. To create the simple random sample, the steps below were followed.

3.8.3.1 Step 1 Defining the population

First, the researcher used the attendance register for each day/shift as the sampling frame. In each of the facilities visited, there was an average number of qualified nurses in the morning, afternoon and night shift. However, the distribution of nurses differed with each facility. Facility A had six male and female medical wards within the medical directorate. Facility B and C had two medical wards. Facility D and E had two relatively small medical wards.

Facility A had a distribution of two, two and one qualified nurses on morning, afternoon and night shifts respectively, with a population size of approximately seven on each ward. The nurses are complemented mostly by health aids/nurse assistants.

Facility B had a distribution of five, four and three qualified nurses on the morning, afternoon and night shifts respectively, with a population size of about 18 in each ward.

Facility C and D had a distribution of eight, six, and four qualified nurses in the morning, afternoon and night shift respectively, with a population size of approximately 25 in each ward.

Facility E had a distribution of eight, six and four qualified nurses in the morning, afternoon and night shift respectively, with a population size of approximately 24 in each ward.

3.8.3.2 Step 2 Choosing the sample size.

The overall sample size for the study was 247. In each facility, the population was further subdivided into strata (wards). In each stratum, equal samples were drawn to form the accessible population in each facility.

- In Facility A, the required sample size was 14. Seven (7) participants were selected from each ward.
- In Facility B the sample size determined was 33, 16 and 17 participants were selected from ward 1 and 2 respectively.
- In Facility C, the sample size was 48. Twenty-four (24) participants were randomly chosen from each ward.

- In Facility D, the sample size was 46. Twenty-three (23) registered nurses were selected from each ward.
- In facility E the required sample size was 106. Seventeen (17) registered nurses were selected from wards 1, 2 and 3, and 18 samples were selected from wards 4, 5 and 6.

3.8.3.3 Step 3 Listing the population and assigning numbers

The number of nurses that were to report to work on a particular day was identified from the duty roster. A list of the nurses that were to report on a particular day was done by the researcher. A consecutive number from 1 to N (N is the population of nurses on a particular day in each ward) was assigned to each of the nurses.

3.8.3.4 Step 4 Random selections of numbers

The numbers were then written on a plain sheet, folded, placed in a container and shaken. An independent person was allowed to pick any of the folded papers at random. To ensure transparency, once the independent person picks the folded paper, she/he opens it and shows to all the nurses present.

3.8.3.5 Step 5 Selecting the sample

The nurses who had their assigned numbers randomly picked by the independent person were selected to partake in the study. On each day, the researcher selected two-thirds of the population on the duty roster. If a selected participant failed to report to work on that day, she/he was excluded from the study. This process was followed on subsequent visits for a number of days until the required sample size was achieved. The number of visits to each facility was determined by the sample size required. The researcher visited the facilities during morning and afternoon shifts. The researcher

reported to the facilities an hour early before the morning nurses reported to work in order to meet the night nurses before they leave for home. Questionnaires were self-delivered to participants who were willing to partake in the study. Any nurse who has had a chance to partake in the study was not listed and assigned a number in the lottery on subsequent visits. This was done to avoid the repetitive selection of the same participants.

3.8.4 Sample size

Sample size represents the number of subjects in a sample (Polit & Beck 2017:316). According to Duntoye (2015:3), there are several approaches to determining the sample size and that include using a census, imitating a sample size of similar studies, using published tables, and applying formulas to calculate a sample size. This study determined its sample size by applying the formula developed by Yamane in 1967, which provides a simplified way of calculating sample sizes when dealing with proportions of a population.

$$n = \frac{N}{1 + N(e)^2}$$

In the above equation, ***n*** is the sample size, ***N*** is the population size and ***e*** is the level of precision.

With a confidence level of 95%, the level of precision, ***e*** is estimated to be five (5) percent or 0.05. Foote and Huebner (2014:2) explained the level of precision also known as sampling error, as the range in which the true value of the population is estimated to be and is often expressed in percentage points. The confidence level is based on the idea that when a population is repeatedly sampled, the average value of the elements obtained by those samples is equal to the value of the true population (Duntoye 2015:3). According to Polit and Beck (2017:316), no simple equation can determine how large a sample is needed, but in quantitative research, it is often good to strive for the largest sample possible. This is because the larger the sample, the more

likely it is to have a sample that is representative of the population and the smaller the sampling error.

The table below represents the various facilities, the population and the desired sample size obtained with the Yamane formula.

Table 3.1: Facilities, the population of nurses and desired sample size based on Yamane formula

NAME OF FACILITY	TOTAL POPULATION OF NURSES (N)	STUDY SAMPLE/SAMPLE SIZE (n)
Facility A	15	14.47 = 14
Facility B	36	33
Facility C	55	48
Facility D	52	46
Facility E	146	106
TOTAL	**304**	**247**

The sample size for this study was 247

3.9 DATA COLLECTION METHODS AND PROCEDURES

Data collection, according to Rouse (2016:1) involves the systematic process of collecting information from a variety of relevant sources in order to answer research questions, evaluate an outcome, and make predictions about future probabilities and trends. Data collection method describes the modes through which information is obtained or gathered. The choice of data collection method depends on the research problem under study, the research design and the information gathered about the variable. Quantitative data collection method used in this study employs systematic standardised approach and uses methods such as survey questionnaire (Doorenbos 2014: 2).

3.9.1 Instrument for data collection

The study used a structured questionnaire to solicit information from participants because relative to interviews, questionnaires are less costly, and require less time to administer; as well as offering the participants relative anonymity. They are also very useful for the large population, where interviews would be impossible or impractical. A questionnaire is a research instrument, usually printable, consisting of a series of questions for the purpose of gathering information that can be analysed for usable information (McLeod 2018: 1). Questionnaires can also be used for administrative decision-making as it provides baseline information on which decision can be based (Doorenbos 2014:2).

The challenge of the questionnaire is that most people would want to present a positive image of themselves, and so may lie or bend the truth due to social desirability (Polit and Beck 2018:349). The possibility of this challenge marring the credibility of the outcome was overcome by constantly assuring participants that this exercise was purely for academic purposes and that their names would not be associated with any response. Again, they were assured that no punitive measures, such as withdrawal of their practicing pin/certificate, would be meted out to any of them for giving an honest response, but rather their responses will help authorities to identify their training needs.
Questionnaires can be an effective means of measuring the behaviour, attitudes, preferences, knowledge, opinions, and intentions of relatively large numbers of subjects more cheaply and quickly than other methods (McLeod 2018:1).

3.9.2 Questionnaire design and development

Questionnaire design was guided by the mode of administration and the type of sample selected, to meet the objective of the research, and obtain accurate and complete information within the specified period of time. The 48-item self-administered HIV/AIDS

KAP questionnaire used in this study was adapted from that of Delobelle et al. (2009:1072-73), which was an open-access study based on existing instruments developed for use in nursing by Eckstein (1987) and Froman and Owen (1997). The questionnaire contained close-ended questions with a fixed number of responses the participants had to choose from. Closed questions structure the answer by only allowing responses, which fit into pre-decided categories. The use of closed-ended questions allowed the researcher to standardise the questionnaire for all respondents, as well as simplified the statistical analysis of the data as information was converted to quantitative data (McLeod 2018:3).

3.9.2.1 Layout of the questionnaire

The questions on the said questionnaire were written in English, a language understood and spoken by all participants. English is Ghana's official and standard language used for educational instructions (Ghana Embassy 2018:1). The questionnaire covered the various aspects under study, including the demographic characteristics, training received on aspects of HIV, knowledge, attitudes, and practices related to the care of patients with HIV and AIDS.

The questionnaire was sub-divided into four major sections. The first section consisted mainly of demographic content and variables relating to HIV/AIDS training and care, the second section contained a 28-item HIV/AIDS knowledge scale. The knowledge scale was based on an instrument developed by Eckstein (1987) containing statements about disease presentation, transmission, precaution, and prevention, and scored as 'True', 'False' or 'Don't Know.' Correct responses were summed on a 28-point rating scale with higher scores of (1.4-1.8) indicating higher/good knowledge levels and lower scores of (0.6-1.3) indicating lower/ poor knowledge.

The third section contained a 10-item attitude scale. The attitude scale was based on an instrument developed by Froman and Owen (1997), for measuring attitudes towards patients with HIV and AIDS among nurses, and comprised of items probing empathic

and avoidance behaviour. The scale was scored on a five-point Likert scale, ranging from ‘Strongly disagree’, ‘Neither disagree nor agree’, to ‘Strongly agree’, with higher scores of (2.3 - 3.4) indicating more agreement. The fourth section consisted of a 10-item practices scale. This consisted of questions relating to universal precautions adherence, the requirement for and availability of post-exposure prophylaxis (PEP) and behaviour with regard to HIV testing and referral. Items were scored as ‘yes’, ‘no’ or ‘not applicable’, with higher scores of (1.8-2.0) indicating good practices.

3.9.3 Pre- test

A pretest is a small-scale preliminary study conducted before the main study to test for feasibility. It allows the researcher to try out the study with a few participants so that adjustments can be made to improve on the study design or data collection method before the main study. It may be cost and time saving (McLeod 2018:4). A pre-test of the questionnaire was conducted on 15 participants with similar characteristics at the medical wards of Kumasi South Government hospital. The pretest allowed for rewording and clarification of questions misunderstood by respondents. The pretest tested the language of the questionnaire, asking if it was appropriate to the vocabulary of the group of people being studied. Statements that created ambiguity were reworded to ensure it was interpreted in the same way by members of different subpopulations of the population of interest. For example, statement two under the HIV/AIDS knowledge scale was changed from ‘HIV has been transmitted to people receiving blood transfusion’ to ‘HIV can be transmitted to people receiving blood transfusion’. The pretest also helped the researcher to test the face validity of the instrument. Face validity refers to the degree to which a test appears to measure the variable it is designed to measure (McLeod 2013:1).

3.9.4 Conducting data collection

All questionnaires were hand-delivered by the researcher herself and the answered questionnaires were collected by the researcher. Fieldworkers were not used in this study. Before the commencement of the study, participants received an explanation on the purpose, benefits, and risk of the study. The need for their honest responses was also stressed, as this would help to provide an unbiased picture of their knowledge, attitude, and practices, thereby aiding the researcher in identifying their training needs. Those who satisfied the inclusion criteria, and gave informed consent, were given questionnaires to fill. The researcher waited for the participants to complete the questionnaires while giving them privacy. Their responses were not in any way influenced by the presence of the researcher as she moved some distance away from where participants were answering their questionnaire. Those participants that did not have the time to complete the questionnaires were allowed to keep them; these were collected at the participants' given time by the researcher. Participants' fatigue was avoided, as the time taken to complete the questionnaire was brief, and ranged from 15 to 20 minutes. Data collection lasted for a period of two months.

3.10 DATA MANAGEMENT AND ANALYSIS

This section gives details of the steps in data management, such as data entry, data cleaning, and ensuring data security. It also describes the data analysis process including the software used for data entry and processing.

3.10.1 Data management

Data management consisted of office coding and editing, data entry using the Statistical Package for the Social Sciences (SPSS) version 23.0 and editing computer-identified errors. All the collected questionnaires were sequentially numbered before data collection, making it easier to go back to each questionnaire during the data cleaning

process. Data entry followed this sequential numbering. Hard copies of the answered questionnaire were stored by the researcher in a locked cupboard in the researcher's home. Electronic information was stored on a password protected computer belonging to the researcher. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. The researcher intends to destroy data when necessary by shredding the hard copies.

3.10.2 Data Analysis

Data analysis is the process of organising, interpreting and communicating numeric data through a statistical or logical technique with the goal of discovering useful information that can inform conclusions and support decision-making (Polit & Beck 2017:392). The main purpose of data analysis is to make meaning from data collected in a study. In this study, the different items and responses in the questionnaire were assigned codes and then analysed with Graph Pad Prism 6 and SPSS Version 23. The study findings were presented in both descriptive and inferential statistics.

Descriptive statistics are used to synthesise and describe large sets of quantitative information (Polit & Beck 2017:392). The descriptive statistics allowed the researcher to use frequency, percentage, mean and standard deviations to describe the data. The results were presented in frequency tables and bar graphs.

Inferential statistics are used to make inferences or draw conclusions using data drawn from the population. A chi-square analysis was used to test associations among subgroups and analysis of variance (ANOVA) was used to compare subgroup scores. The chi-squared (X^2) test is used to test hypotheses about the proportion of cases in different categories while ANOVA is used to test mean group differences between three or more groups (Polit & Beck 2017:415-416).

Spearman's rank order correlation coefficients were calculated among KAP scores and selected variables. Spearman's rank order correlation coefficient is used to test for the

strength of association between two variables. The closer the rank value R is to +1 or -1, the stronger the likely correlation. A perfect positive correlation is +1 and a perfect negative correlation is -1 (Zhang, Wei, Wang & Han 2016 443).

3.11 ETHICAL CONSIDERATION

Ethics in research refers to the principles a researcher must adhere to in order to protect the dignity, rights, and welfare of prospective human participants, animals, organisations, communities and the environment (UNISA 2017:1). This study complied with ethical requirements encompassing research with human subjects according to the University Of South Africa (UNISA)'s policy on research ethics. In this regard, research that involves humans should be conducted in an ethical manner to protect the rights of individuals involved in the study.

3.11.1 Permission to conduct the study

Ethical clearance to conduct the study was obtained from the Higher Degrees Committee of the Department of Health Studies, University of South Africa Research and Ethics. Ethical clearance was also obtained from the Kwame Nkrumah University of Science and Technology (KNUST) Research and Ethics Committee. Permission was sought from the management and authorities of the five health care facilities that were used in the study (Annexure B). In addition, the nurses in charge of the various wards in each facility were informed prior to the administration of the questionnaires.

3.11.2 Ethical principles for protecting study participants

The ethical principles of the Declaration of Helsinki were considered and followed. These were beneficence, and respect for human dignity and justice (Declaration of Helsinki 2013).

3.11.3 Beneficence

The principle of beneficence refers to actions taken to prevent or remove harm (Polit & Beck 2017:121). This research kept to the ethical principle of beneficence by not posing any physical, emotional or economic harm to the participants. Participants were told the significance of this study which is using study outcomes to identify training needs for nurses to alleviate nurses' anxiety about caring for patients with HIV and AIDS. Participants' fatigue was avoided, as the time taken to complete the questionnaire will be brief, and range from 15 to 20 minutes.

There were no willful or probing questions to the participants and questions were modified to eliminate any form of judgment. The foreseeable risk that was likely to be associated with this research was the possibility of a feeling of fear of being punished for an honest response, which otherwise would depict a negative attitude, inadequate knowledge/misconception and bad practice which may not be in agreement with the Ministry of Health policy on AIDS care. The researcher overcame this by assuring that the exercise was purely for academic purposes, and their names were not going to be associated with any response. Again, they were assured that no punitive measures, such as withdrawal of their practicing pin/certificate, would be meted out, but rather that their responses would help authorities to identify training needs of nurses.

An additional risk that the researcher anticipated was the possibility of participants suffering a psychological pain or stress, especially for those who may themselves be victims of HIV-related discrimination or stigma, or who may have lost relatives, partners and/or friends to HIV and AIDS. The researcher sought the services of a psychologist who was to see and manage participants that might experience psychological pain or stress during the course of study as a result of the above-mentioned reasons. Though

seven participants refused to complete their questionnaire, none was ready to disclose their reason for discontinuation, nor, importantly, did they show any obvious sign of psychological pain or stress. A few participants presented a verbal complaint regarding questions at the 'knowledge scale' being difficult. The researcher stressed the fact that there was no punishment for getting a question wrong. The researcher ensured the participants did not incur any financial cost by participating in the study. Data were collected from participants who were at the post at the hospital premises.

3.11.4 Respecting and protecting the rights of the participants (respect for human dignity)

The principle of respect for human dignity requires that the researcher accord due respect to study participants by granting them informed consent before the commencement of the study (Polit & Beck 2017:122). The researcher, therefore, took the responsibility to protect the rights of the individual in relation to self-determination, privacy, autonomy. This was done through seeking ethical clearance from the ethics committees in KNUST and UNISA as well as from the participants. The researcher maintained the right to full disclosure by explaining the nature, purpose, and significance of the study to allay any fears they had in relation to the study procedure and outcome. An information leaflet (Annexure C) was hand delivered to them before the commencement of the study. The participants were freely allowed to ask questions pertaining to the research study for clarification. The researcher maintained the participants' right to self-determination. They were assured that their participation in the study was voluntary and they had the right to make choice to freely participate, refuse participation or withdraw from the study at any time with no negative consequence. Participants who harbored any hesitation to partake in the study were not coerced into the study but were excluded. According to Polit and Beck (2017:123), respect for human dignity also includes freedom from coercion and involves explicit or implicit threats of penalty from failing to participate in the study or excessive rewards from agreeing to

participate. Their completing of the questionnaire constituted informed consent as per the University of South Africa Ethics committee (Annexure D). The researcher also left her contact number with each participant to reach her where the need might arise.

3.11.5. Justice

The principle of justice stresses that the source of data must be protected by keeping informants nameless (Polit & Beck 2017:124). This study adhered to the principles of justice by ensuring privacy, anonymity, and confidentiality of participants' information. The study ensured anonymity by not writing the names or addresses of the participants on the questionnaire. A unique identifying coding system was used on the questionnaire, making it impossible to link the participants' names to the questionnaire with their information. The participants were assured that the information they provide would be used for the purpose of this research only. Their identity would not be associated with any information that might be published in journals or websites for the benefit of national and international audiences to improve nursing practice. Data was stored in a safe place, providing only the researcher's access.

3.12. VALIDITY AND RELIABILITY

Validity refers to the extent to which a research instrument actually reflects or is able to measure the construct being examined (Polit & Beck 2017:106). Reliability examines the amount of measurement error in the instrument being used and is concerned with the degree of consistency, stability, precision, and repeatability of the informant's accounts and researcher's ability to document events. It also refers to the degree to which the instrument will yield the same results if administered repeatedly to the same participants (Grove et al 2013:389). Establishing the validity and reliability of this measurement instrument was deemed important if conclusions and inferences drawn from this study were to be considered accurate, acceptable, and reliable by the scientific community.

3.12.1 Internal and external validity

Internal validity refers to the degree to which a cause and effect relationship based on the study is justified. In the other words, internal validity is a measure of the degree to which the observed effects in the dependent variable is attributable to independent variables (Surbhi 2017:2). The researcher took measures to control for internal validity by using questionnaire items already used in other studies and then piloting the questionnaire with 15 participants from a different setting with similar participants' characteristics. This procedure gave the researcher assurance that the findings obtained using this instrument reflected reality. Additionally, the researcher ensured internal validity through the random selection of participants using a simple random sampling.

External validity checks for the correctness of the research findings by examining its applicability from one setting to another. Threats to external validity take place when the specific set of research conditions does not practically consider the interactions of other variables of the real world (Surbhi 2017:2). Examples of such threats that could undermine the validity of this study included selection bias and interaction effects of the pre-test. The researcher took necessary steps to ensure the threats were controlled as much as possible. Selection of the participants was transparent and unbiased, as it ensured random selection of participants who were representative of the overall population. The quantitative study design used was appropriate for this study. Lastly, the statistical analytical methods used produced quantitative results, which reflected the true picture of the variables being studied in participants.

3.12.2 Validity of the research instrument

Validity refers to the extent to which an instrument actually reflects or is able to measure the construct being examined (Polit & Beck 2017:377; Grove et al 2013:393). Validation

involves the process of collecting and analysing data to assess the accuracy of the instrument. Validity was censured by performing a literature review, involving experts to comment on the questionnaire, and doing a pre-test. Information used for this research was meanwhile collected from relevant and reliable databases and sources. All articles that were used for this research focused entirely on the research aims. Data collection instrument (questionnaire) was narrowed down to the research topic and aims. A pre-test of the questionnaire was conducted on 15 participants with similar characteristics at the Kumasi South Government Hospital. All these exercises helped the researcher to measure the face, content and construct validity of the questionnaire.

Construct validity refers to whether the operational definition of a variable actually reflects the true theoretical meaning of a concept. Face validity refers to the subjective, superficial assessment of whether the instrument appears to measure the variable that it claims to measure rather than what it actually measures. Content validity refers to the extent to which the question items in the instruments adequately reflect the real meaning of the concepts under consideration (Polit & Beck 2017:377-379). With the adaptation of the KAP questionnaire from Delobelle et al. (2009:1072-73), albeit the minor modifications, the researcher had no doubts the instrument was valid.

3.12.3 Reliability of the research instrument

Reliability examines the amount of measurement error in an instrument being used and is concerned with the degree of consistency, stability, precision, and repeatability of the informant's accounts and researcher's ability to document events (Grove et al. 2013:389). Internal consistency reliability is the most widely used reliability approach among nurse researchers, as it is the best means of assessing measurement error in psychosocial instruments. Internal consistency is usually evaluated by calculating coefficient alpha or Cronbach's alpha (Polit & Beck 2017:375).

Reliability was measured using the Cronbach's alpha co-efficient. The Cronbach's alpha co-efficient, developed by Lee in 1951, is a measure used to assess the reliability or internal consistency of psychometric instrument (Goforth 2015:1) like a questionnaire. Internal consistency exists in degrees and is usually expressed as a form of the correlation coefficient, with 1.00 indicating perfect reliability and 00 indicating no reliability. Values of 1.00 are not obtained in study results because all instruments have some measurement error. A reliability coefficient of 0.80 is considered the lowest acceptable value for a well-developed measurement instrument while for a newly developed instrument, where a reliability of 0.70 is considered acceptable (Polit & Beck 2017:375). The researcher, in consultation with a statistician, used the Cronbach's alpha co-efficient to test reliability for this study. A reliability coefficient for the knowledge and attitude were 0.78 and 0.66 respectively, proving the reliability and acceptability of the instrument. The reliability coefficient obtained for the instrument in this study was similar to that (0.77 and 0.63) obtained in the Delobelle et al. (2009:1072-73) study, though slight modifications were made in the questions. In addition, the researcher ensured that care was taken over the accurate phrasing of each question in order to avoid ambiguity and pre-tested the questionnaire before the final study.

3.13 CONCLUSION

This chapter indicated how cross-sectional analytical design guided the selection of study respondents and data collection methods. Data analysis procedures used in the study to explain relationships among variables at various levels were also presented. The study also demonstrated the various measures to ensure both the validity and reliability of the research instruments, as well as ethical issues related to the study.

CHAPTER 4

PRESENTATION OF RESULTS

4.1 INTRODUCTION

This chapter covers the results of the analyses done on the response of the 240 participants. Of the 247 participants that were recruited for the study, 240 responded to the questionnaires. Some of the 240 participants failed to attend to all the questions. The analyses were done with Graph Pad Prism 6, and the Statistical Package for the Social Sciences (SPSS) version 23. The results presented below generally include the socio-demographic characteristics of the participants, including the age, gender, years of work experience, professional rank, and level of education.

This chapter continues with the presentation of specific areas of training participants have received HIV/AIDS and how often they attended workshops on HIV and AIDS. Next, there is the presentation of the mean scores of knowledge, attitude and practice of the participants followed by a presentation of percentage distribution of participants who scored high or low for knowledge, attitude, and practices.

In the later parts of this chapter, the focus is on the individual questions that constitute the various scales used in measuring the knowledge, attitude, and practice of the participants. More specifically, the frequencies and p-values, indicating the significant difference between the responses to the various questions are shown. Further to this, Spearman's' RHO correlation coefficient is used to test the link between knowledge, attitude, practice, and some selected socio-demographic factors. A chi-square analysis testing the association between mean knowledge, attitude, practices, and the socio-demographic characteristics is also presented.

4.2 RESEARCH FINDINGS

The findings presented in this study are based on the research objectives of this study. The results are presented in pie charts, bar graphs and tables for easy interpretation.

4.2.1 Socio-demographic characteristics of Study Participants

Under this section, their age, gender, years of working experience, professional rank, and level of education are presented in pie charts.

4.2.1.1 Age of Participants

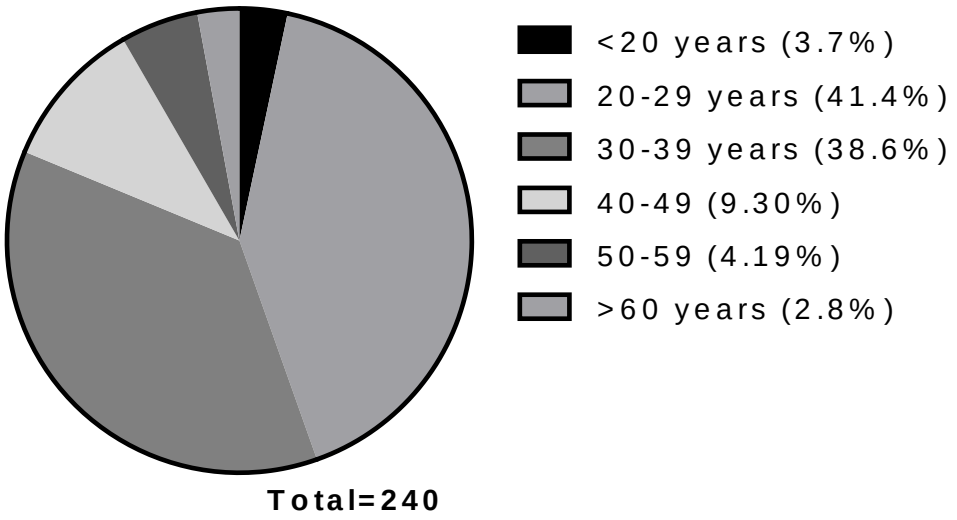

Figure 4.1 Age distribution of participants.

Figure 4.1 shows the distribution of the ages of the participants. The majority (41.4%) of the participants were between the ages of 20 to 29 years. The least represented age group (2.8%) was those who were above 60 years of age.

4.2.1.2 Gender of participants

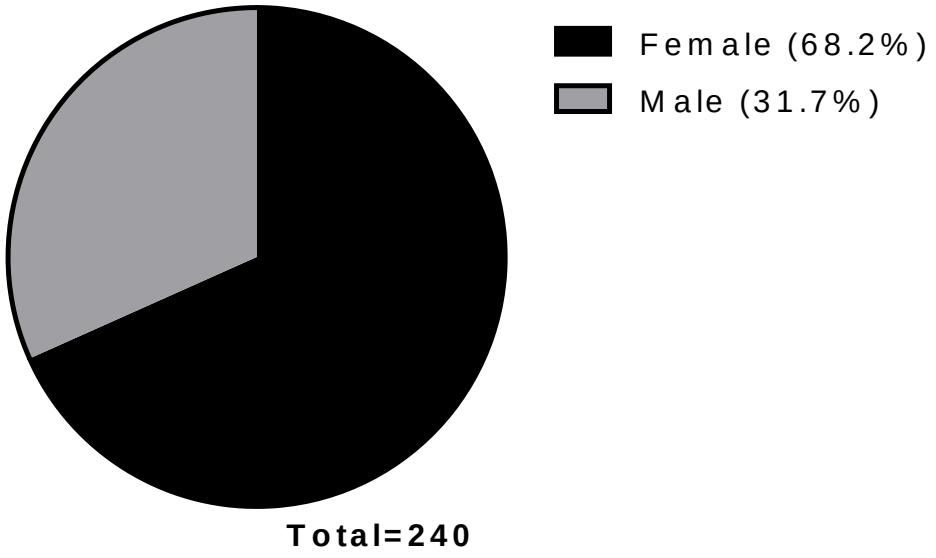

Figure 4.2 Gender distributions of participants

Figure 4.2 shows the gender distribution of participants. The majority (68.2%) of the participants was females and 31.7% were males.

4.2.1.3 Professional rank of participants

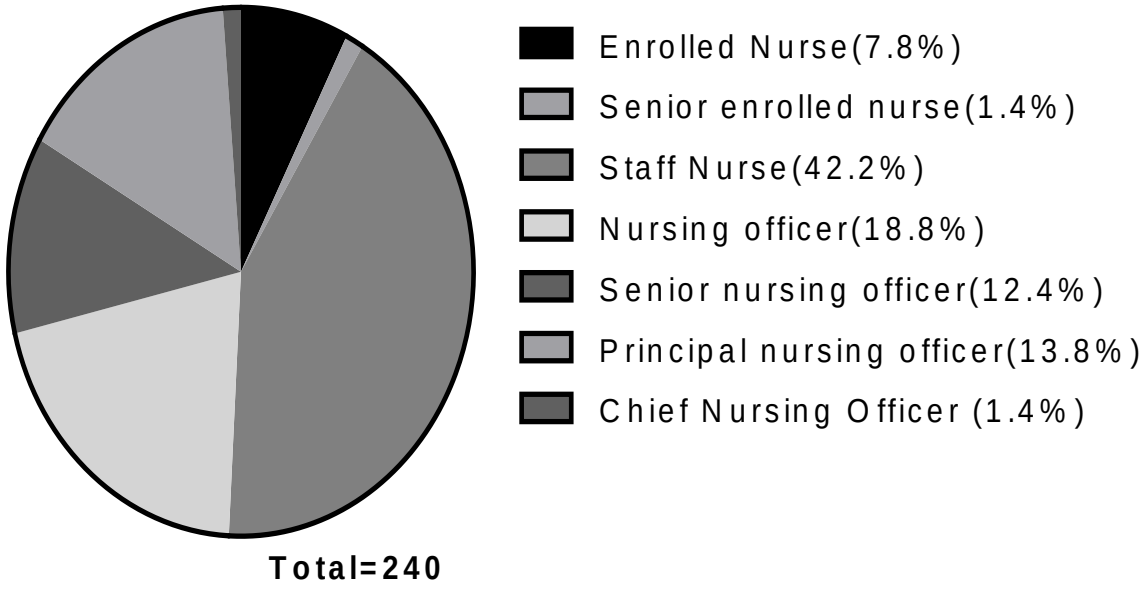

Figure 4.3: Percentage distribution of professional rank of participants

Figure4.3 indicates the professional rank of the participants. The majority were staff nurses (42.2%). Nursing officers constituted about 18.8% of the participants, while senior nursing officers were about 12.4 percent. Only a small number of participants were senior enrolled nurses (1.4%) or chief nursing officers (1.4%).

4.2.1.4 Level of Education of participants

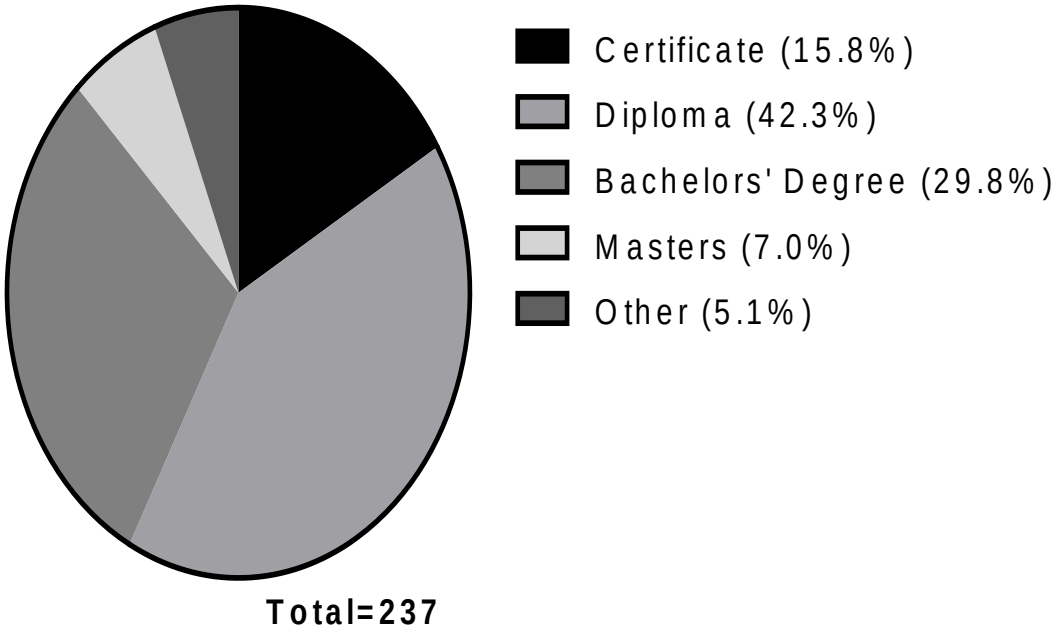

Figure 4.4 Percentage distributions of educational levels of participants

Figure 4.4 represents participants' education levels. A large number of them (42.3%) had attained a diploma (42.3%) or bachelors' degree (29.8%). Only a few (7.0%) have a masters' degree.

4.2.1.5 Work experience of participants

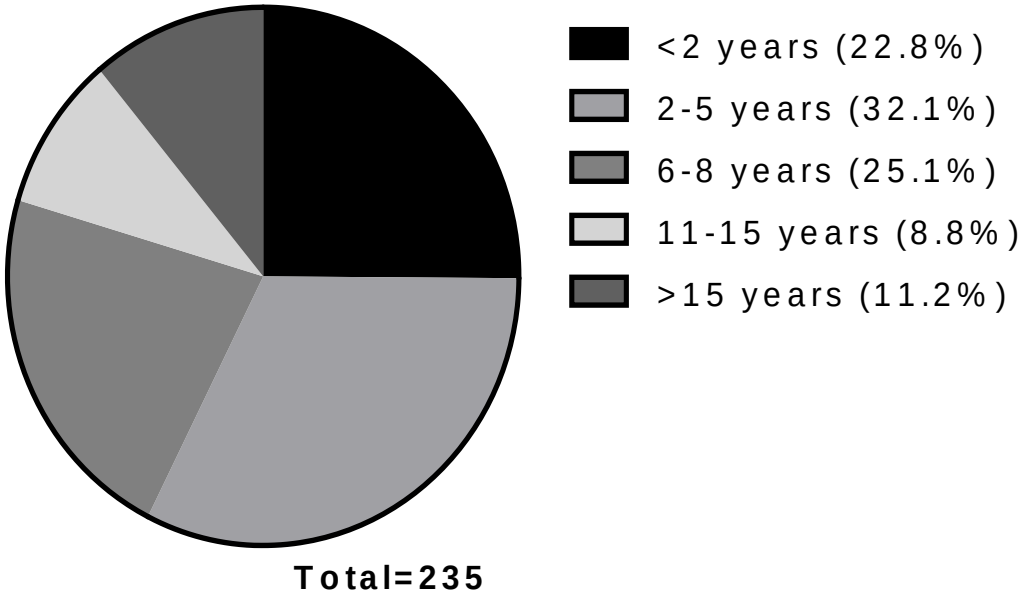

Figure 4.5 Percentage distributions of work experiences of participants

Figure 4.5 shows the work experience of the participants. While about a quarter of them (25.1%) have had about 6 to 8 years of professional experience, the majority have been working for 2 to 5 years. Those who have more than 15 years of professional working experience were 11.2 percent.

4.2 CARE OF HIV/AIDS PATIENTS

4.2.1 Frequency of care of HIV/AIDS patients

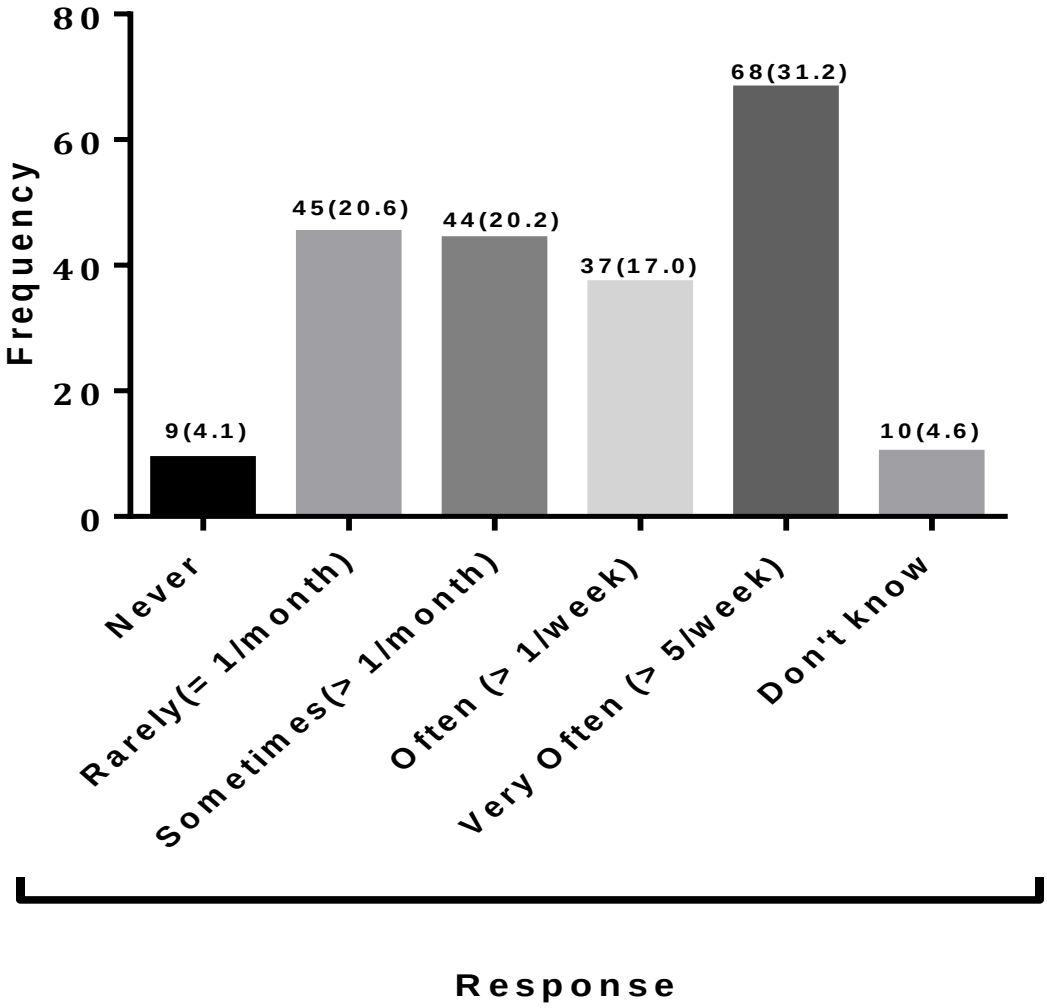

Figure 4.6 Frequency and percentage distribution of how often participants cared for HIV and AIDS patients

Figure 4.6 above shows the participants' response to the frequencies that participants cared for HIV/AIDS patients. The majority (31.1%) responded that they cared for HIV/AIDS patients very often, while 20.6% rarely care for HIV/AIDS patients. About 4% of the participants have never cared for HIV/AIDS patients.

4.3 TRAINING ON HIV/AIDS

4.3.1 Experience of any training on HIV/AIDS

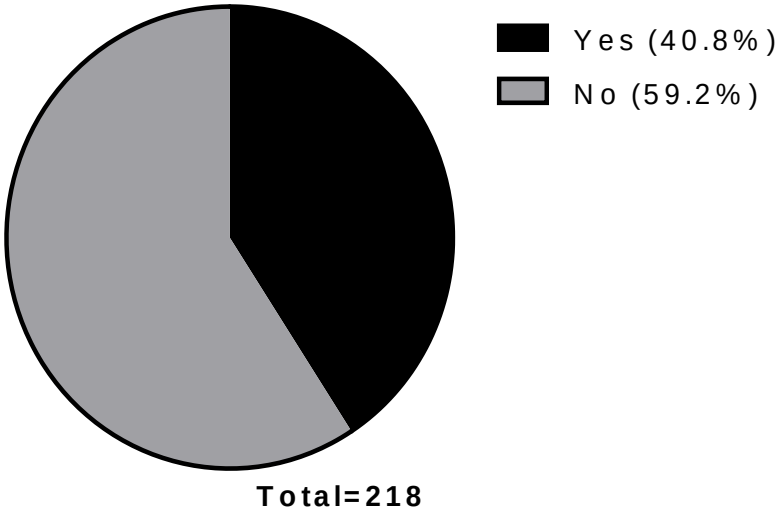

Figure 4.7 Responses on whether participants have received any HIV/AIDS-related training.

Figure 4.7 above shows whether participants have received any training in HIV and AIDS. Those who have received training in HIV and AIDS (40.8%) were lesser than those who have not received any form of training in HIV and AIDS (59.2%).

4.3.2 Specific areas of training

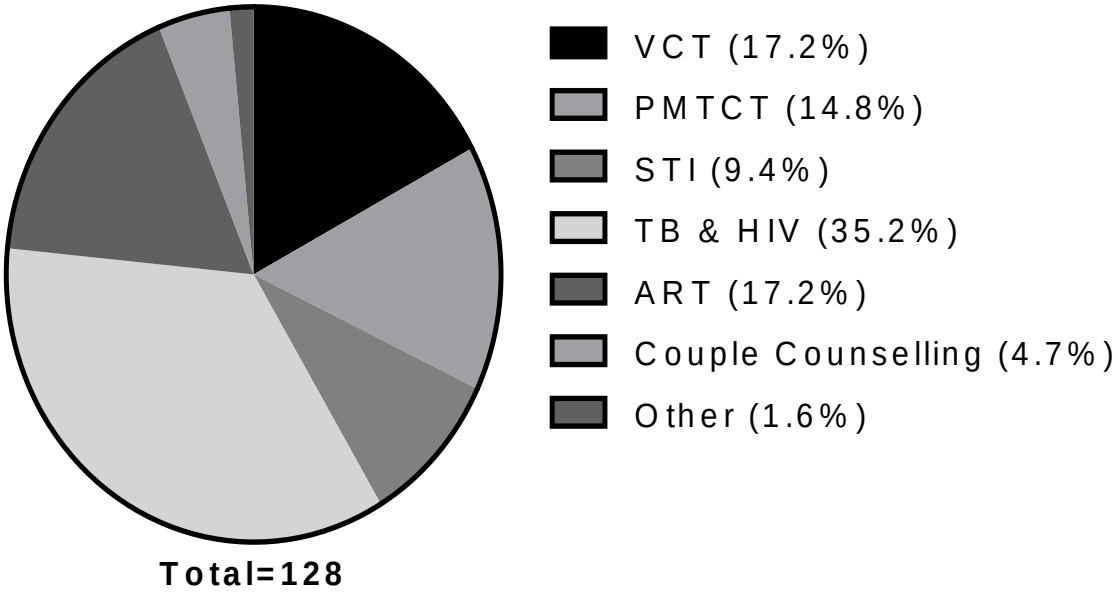

Figure 4.8 Specific areas of HIV and AIDS participants have received training on

Figure 4.8 indicates the specific areas that participants have received training. The majority (35.2%) had received training in TB and HIV, 17.2% had received their training in VCT or ART, and 14.8% had received training on PMTC. A few of the participants (0.9%) responded that they have been trained in other areas other than VCT, PMTCT, STI, TB and HIV, ART.

4.3.3 Frequency of attendance to workshops on HIV/AIDS

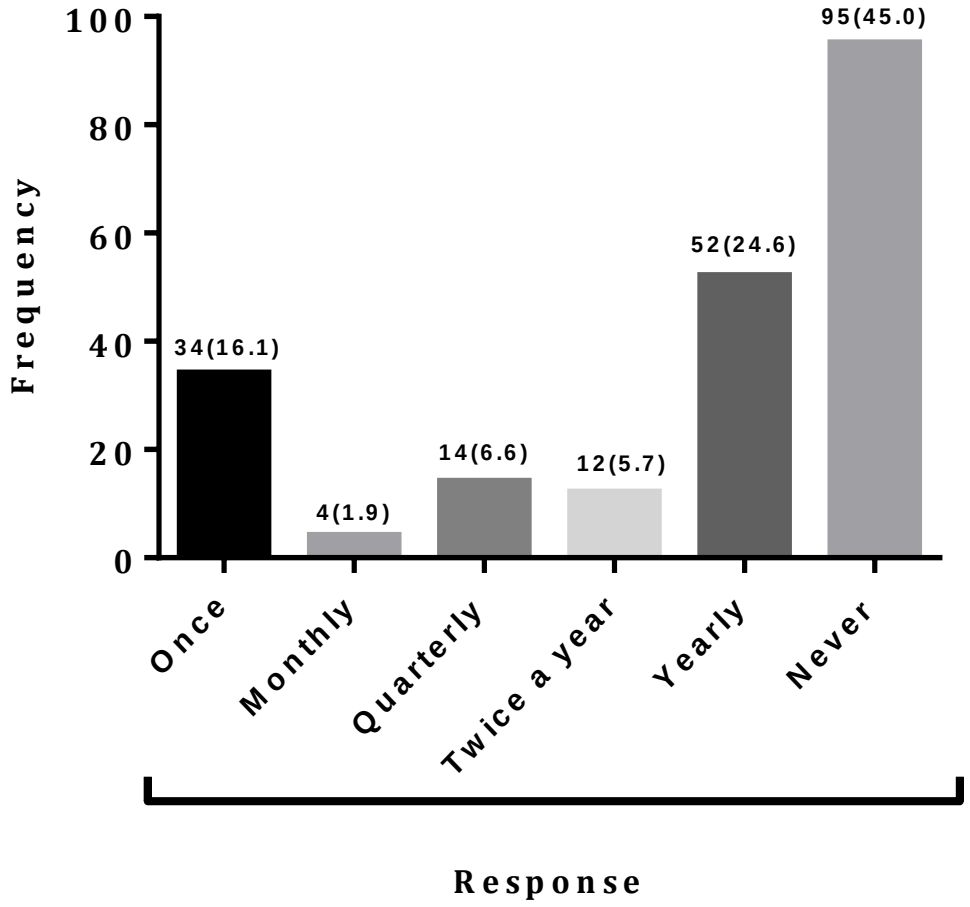

Figure 4.9 Response of participants on how often they attend workshops on HIV/AIDS

Figure 4.9 show the majority of the participants (45.02%) have never attended any workshop on HIV and AIDS, 16.11% have attended a workshop on HIV and AIDS once in their professional career. Close to 25% of the participants have attended HIV and AIDS workshops yearly and only 1.9% attended workshops on HIV and AIDS monthly.

4.4 KNOWLEDGE, ATTITUDE AND PRACTICES OF PARTICIPANTS

4.4.1 Mean scores of knowledge, attitude and practice

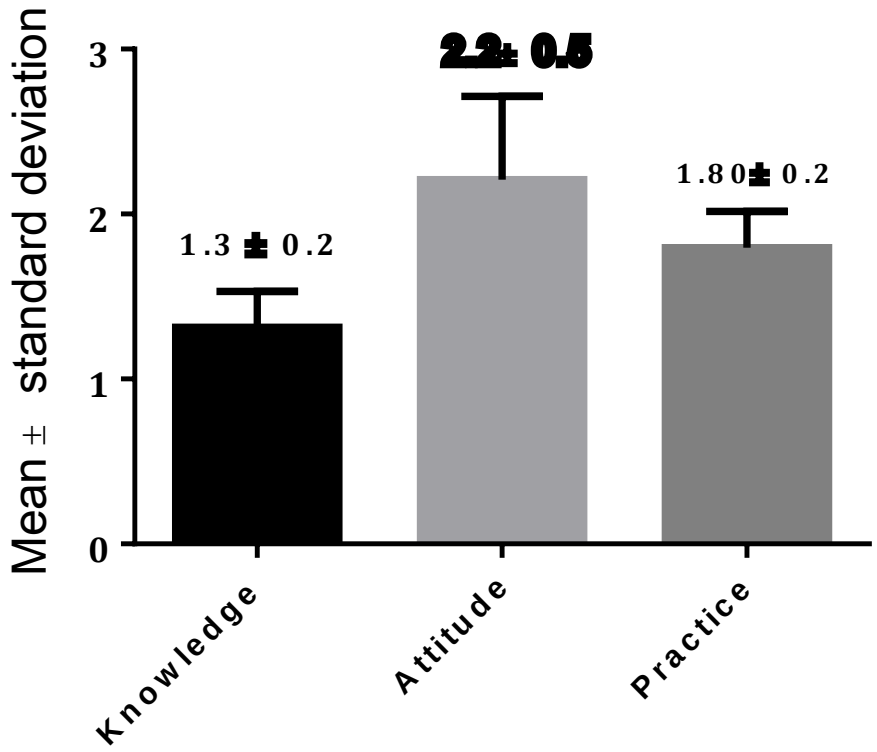

Figure 4.10 Mean scores of knowledge attitude and practice of participants

Figure 4.10 indicates the mean ± SD scores of knowledge, attitude, and practice. Participants scored higher on attitude (2.2±0.5) followed by practice (1.80±0.2), and then knowledge (1.3±0.2)

4.4.2 Participants score on knowledge, attitude and practices

Variable	Low	High
Knowledge	112(48.1%)	121(51.9%)
Attitude	105(45.3%)	127(54.7%)
Practice	100(44%)	128(56%)

Table 4.1 Frequencies and Percentage Distribution of participants score on knowledge, attitude and practice

From Table 4.1 above, a majority of the participants scored high for knowledge 121(51.9%), attitude 127(54.7%) and practices 128 (56%). There was not such a great gap between those who scored high and low knowledge, attitude, and practices.

4.4.3 HIV/AIDS-related knowledge of participants

HIV/AIDS Knowledge Scale	TRUE	FALSE	Don't know	P-value
1. HIV can be transmitted by casual contact.	20(8.4)	199(83.3)	20(8.4)	<0.0001
2. HIV can be transmitted to people receiving a blood transfusion.	188(81.4)	31(13.4)	12(5.2)	<0.0001
3. HIV can easily be killed with disinfectant in the environment.	10(5.2)	161(83.9)	21(10.9)	<0.0001
4. HIV is highly contagious.	70(31.1)	128(56.9)	27(12.0)	<0.0001
5. HIV/AIDS is characterised by a decrease in T-4 lymphocytes, causing an impaired cellular immunity.	147(64.4)	21(9.2)	60(26.3)	<0.0001
6. A person with an antibody to the virus is protected against HIV/AIDS.	35(15.4)	153(67.4)	39(17.2)	<0.0001
7. All pregnant women infected with HIV will have babies born with AIDS.	12(5.2)	210(91.3)	8(3.5)	<0.0001
8. Gloves are not necessary when handling body fluids.	25(10.6)	204(86.8)	6(2.6)	<0.0001
9. Following an accidental needle stick, there is a greater likelihood of infection with hepatitis B than with HIV/AIDS.	82(35.8)	110(48.0)	37(16.2)	<0.0001
10. People infected with HIV can be asymptomatic, but still infectious.	173(83.2)	26(12.5)	9(4.3)	<0.0001

11. It is possible to transmit the virus to family members of a nurse providing care for persons with HIV/AIDS, even though the nurse is not infected.	52(22.3)	158(67.8)	23(9.9)	<0.0001
12. The risk of infection with HIV after an accidental needle stick injury at the workplace is high.	163(69.4)	53(22.6)	19(8.1)	<0.0001
13. An individual may be infected with HIV even if he/she tests negative for HIV/AIDS antibodies.	122(52.1)	68(29.1)	44(18.8)	<0.0001
14. A person can be infected with HIV for five years or more without getting AIDS.	172(73.5)	34(14.5)	28(12.0)	<0.0001
15. The risk of occupational HIV infection and transmission among health workers is high.	180(73.1)	38(15.4)	28(11.4)	<0.0001
16. Gloves and gowns are required for any contact with patients with HIV/AIDS.	153(65.7)	69(29.6)	11(4.7)	<0.0001
17. One should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi's sarcoma.	143(62.7)	29(12.7)	56(24.6)	<0.0001
18. The risk of transmission of HIV during mouth to mouth resuscitation is extremely low.	119(50.9)	85(36.3)	30(12.8)	<0.0001
19. To prevent accidental injury, contaminated needles ought to be recapped immediately after	142(59.2)	85(35.4)	13(5.4)	<0.0001

use on patients with HIV/AIDS.				
20. Pregnant health care workers are at greater risk of contracting HIV infection at the workplace.	39(16.7)	173(73.9)	22(9.4)	<0.0001
21. HIV can be easily transmitted through saliva, sweat and tears.	43(18.4)	173(73.9)	18(7.7)	<0.0001
22. TB can be prevented in people living with HIV/AIDS using TB preventive therapy.	104(44.6)	88(37.8)	41(17.6)	<0.0001
23. TB treatment is the same whether a patient is infected with HIV or not.	142(60.9)	57(24.5)	34(14.6)	<0.0001
24. Most HIV-positive TB patients have no symptoms or signs of HIV disease.	37(16.1)	147(64.2)	45(19.7)	<0.0001
25. Pulmonary TB is classified as a WHO clinical Stage 2 condition.	67(29.1)	49(21.3)	114(49.6)	<0.0001
26. Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease.	34(14.8)	125(54.3)	71(30.9)	<0.0001
27. HIV-positive patients with a CD4-count <200 should be assessed for antiretroviral treatment.	135(58.7)	30(13.0)	65(28.3)	<0.0001
28. Adherence to antiretroviral treatment is essential to avoid the development of drug resistance.	162(71.1)	35(15.4)	31(13.6)	<0.0001

Table 4.2 Frequency and percentage of participants' response to various questions on the HIV/AIDS knowledge scale.

Table 4.2 above shows participants' response to various questions on the HIV/AIDS knowledge scale. A large number of the participants (162, 71.1%) p=<0.0001) knew that adherence to antiretroviral treatment is essential to avoid the development of drug resistance. Additionally, the majority of the respondents (173, 83.2% p=<0.0001) indicated that people infected with HIV can be asymptomatic, but still infectious. Most of them (199, 83.3% p=<0.0001) answered that HIV cannot be transmitted by casual contact, nor did most of them think that gloves were not necessary when handling body fluids (204, 86.8% p=<0.0001). A majority of them also responded that pregnant health care workers are not at greater risk of contracting HIV infection in the workplace (173, 73.9% p=<0.0001). More than a quarter of the respondents did not know (60, 26.3% p=<0.0001) whether HIV/AIDS is characterised by a decrease in T-4 lymphocytes, causing an impaired cellular immunity. Almost half of the participants (114, 49.6% p=<0.0001) did not know if pulmonary TB is classified as a WHO Clinical Stage 2 condition.

4.4.4 Attitude of participants towards HIV/AIDS

HIV/AIDS Attitude Scale	Strongly disagree	Disagree	Neither	Agree	Strongly agree	p-value
1. Most people with HIV/AIDS only have themselves to blame.	135(58.4)	59(25.5)	25(10.8)	7(3.0)	5(2.2)	<0.001
2. When admitted to the hospital, patients who are HIV-positive should not be put in rooms with other patients.	79(34.1)	109(47.0)	11(4.7)	17(7.3)	16(6.9)	<0.001
3. When caring for a person with HIV/AIDS, you need to worry about putting your family and friends at risk of contracting the disease.	71(30.7)	100(43.3)	18(7.8)	24(10.4)	18(7.8)	<0.001
4. Patients with HIV/AIDS have the right to the same quality of care as any other patient.	4(1.7)	11(4.8)	7(3.0)	59(25.7)	149(64.8)	<0.001
5. It is especially important to work with patients with HIV/AIDS in a caring manner.	10(4.4)	8(3.5)	13(5.7)	109(47.8)	88(38.6)	<0.001
6. Patients with HIV/AIDS should be	6(2.5)	11(4.5)	9(3.7)	72(29.8)	144(59.5)	<0.001

treated with the same respect as any other patient.						
7. Healthcare workers are worried about contracting HIV/AIDS from caring for a person with HIV/AIDS in their work environment.	22(9.5)	39(16.8)	31(13.4)	88(37.9)	52(22.4)	<0.001
8. Health care workers are sympathetic towards the misery that people with HIV/AIDS experience.	13(5.6)	33(14.2)	47(20.3)	105(45.3)	34(14.7)	<0.001
9. Nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity.	79(34.2)	56(24.2)	37(16.0)	34(14.7)	25(10.8)	<0.001
10. All patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease.	28(12.1)	30(13.0)	8(3.5)	49(21.2)	116(50.2)	<0.001

Table 4.3 Frequency and percentage of participants' response to various questions on the HIV/AIDS Attitude scale.

Table 4.3 above shows the responses of participants on questions relating to HIV/AIDS-related attitudes. The majority (135, 58.4% p=<0.0001) strongly disagreed that people with HIV/AIDS only have themselves to blame. When respondents were asked whether they needed to worry about putting their family and friends at risk of contracting the disease when caring for a person with HIV/AIDS, most of them either strongly disagreed (71, 30.7% p=<0.0001) or just disagreed (100, 43.3% p=<0.0001). Many of the respondents strongly agreed (149, 64.8% p=<0.0001) or agreed (59, 25.7% p=<0.0001) that patients with HIV/AIDS have the right to the same quality of care as any other patient. Half of them responded that they strongly agree (116, 50.2% p=<0.0001) that all patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease. A number of the respondents either did not agree (30, 13.0% p=<0.0001) or strongly disagreed (28, 12.1% p=<0.0001) with this statement.

4.4.5 HIV/AIDS-related practices of participants'

HIV/AIDS Practice Scale	Yes	No	N/A	P-value
1. Do you encourage people to get tested and counseled for HIV/AIDS?	208(91.2)	10(4.4)	10(4.4)	< 0.0001
2. Do you refer people for voluntary counseling and testing, even if these services are not available at your workplace?	180(78.9)	31(13.6)	17(7.5)	< 0.0001
3. Do you know HIV/AIDS service providers or recognisedorganisation in your area where you can refer your patients to?	158(69.3)	56(24.6)	14(6.1)	< 0.0001
4. Do you practice universal blood and body fluid precautions at your workplace?	194(86.2)	13(5.8)	18(8.0)	< 0.0001
5. The last time you took a blood sample, did you wear gloves?	212(92.6)	11(4.8)	6(2.6)	< 0.0001
6. Do you wash your hands before examining a patient?	174(76.7)	45(19.8)	8(3.5)	< 0.0001
7. Do you recap needles immediately after using them?	56(24.6)	166(72.8)	6(2.6)	< 0.0001
8. Do you treat blood spills on floors or other surfaces with a disinfectant before cleaning up?	207(90.8)	14(6.1)	7(3.1)	< 0.0001
9. Do you have post-exposure prophylaxis (PEP) at your workplace?	177(78.7)	21(9.3)	27(12.0)	< 0.0001
10. Did you ever consider starting PEP after an occupationally acquired needle stick injury?	169(74.4)	25(11.0)	33(14.5)	< 0.0001

Table 4.4 Frequency and percentage of response to various questions on the HIV/AIDS practice scale.

Table 4.4 above shows the responses of participants to HIV/AIDS-related practices. Majority of the participants (194, 86.2% p=<0.0001) practiced universal blood and body fluid precautions in the workplace. Most participants (212, 92.6% p=<0.0001) report having worn gloves the last time they took a blood sample. A majority of participants knew about the availability of PEP services at their workplace, but (25, 11.0% P= < 0.0001) would not consider starting PEP after needle pricks. A low response rate in the affirmative was also recorded when participants were asked if they recapped needles immediately after using them (56, 24.6% p=<0.0001).

4.4.6 SPEARMAN rho CORRELATION OF HIV/AIDS KAP WITH SELECTED DEMOGRAPHICS

Characteristics	Knowledge	p-values	Attitude	p-values	Practice	p-values
Knowledge			0.005	0.940	0.176	0.011
Attitude	0.005	0.940			-0.044	0.525
Practice	0.176	0.011	-0.044	0.525		
Professional Rank	0.216	0.002	0.032	0.646	-0.045	0.517
Education level	0.077	0.259	0.081	0.239	0.077	0.269
Work experience	0.278	0.0001	0.083	0.227	0.101	0.150
HIV/AIDS Training	0.174	0.010	-0.015	0.832	0.006	0.931
Age	0.173	0.011	0.103	0.135	0.151	0.030

Table 4.5 Spearman RHO correlation of Knowledge, attitude and practice with selected demographic characteristics of study participants

Table 4.5 above shows the Spearman RHO correlation of knowledge, attitude and practice with selected demographic characteristics of study participants. There was a significant positive correlation between knowledge and professional rank (r=0.216; p=0.002), year of work experience (r=0.278; p=0.0001), training of HIV management (r=0.174; p=0.010), age (r=0.173; r=0.011), and practice (r=0.176; p=0.011). There was a significant positive correlation between practice and age (r=0.151; p=0.030).

The attitude was positively associated with knowledge, professional rank, educational level, work experience, and age, but negatively associated with practice and training, although the association was not statistically significant. Again there was no significant correlation between knowledge and educational level; and between practice and attitude, professional rank, educational level, work experience, and training.

4.4.7 Association of socio-demographic data and the mean scores of knowledge, attitude and practices

Characteristics	Total	Knowledge	P-value	Attitude	p-value	Practice	p-value
Age (years)			0.058(2.176)		0.2871(1.25)		0.2584(1.317)
<20	8	1.31 ± 0.18		2.05 ± 0.17		1.77 ± 0.39	
20-29	89	1.23 ± 0.26		2.22 ± 0.58		1.75 ± 0.26	
30-39	83	1.35 ± 0.19		2.15 ± 0.45		1.83 ± 0.16	
40-49	20	1.36 ± 0.16		2.40 ± 0.42		1.83 ± 0.21	
50-59	9	1.41 ± 0.09		2.30 ± 0.48		1.82 ± 0.15	
60>	6	1.35 ± 0.08		2.43 ± 0.58		1.90 ± 0.17	
Gender			0.633(t=0.479)		0.3763(0.8868)		**0.0325**(2.154)
Female	137	1.324 ±0.20		2.20 ± 0.53		1.82 ± 0.19*	
Male	63	1.340 ±0.23		2.27 ± o.46		1.75 ± 0.27*	
Professional Rank			**0.0089**(2.942)		0.1781(1.505)		0.5407(0.8396)
EN	17	1.37 ± 0.14		2.12 ± 0.46		1.7 ± 0.26	
SEN	3	1.47 ± 0.06		2.47 ± 0.32		1.73 ± 0.58	
SN	92	1.26 ± 0.24*		2.20 ± 0.56		1.79 ± 0.23	
NO	41	1.35 ± 0.22		2.07 ± 0.45		1.81 ± 0.25	
SNO	27	1.26 ± 0.20		2.32 ± 0.50		1.79 ± 0.20	

PNO	30	1.40 ± 0.11*		2.33 ± 0.48		1.84 ± 0.18	
CNO	3	1.43 ± 0.06		1.87 ± 0.23		1.77 ± 0.16	
Education level			0.1040(1.946)		0.7506(0.4798)		0.6173(0.6646)
Certificate	34	1.34 ± 0.14		2.17 ± 0.47		1.74 ± 0.30	
Diploma	91	1.28 ± 0.24		2.19 ± 0.57		1.83 ± 0.20	
Degree	64	1.32 ± 0.22		2.21 ± 0.44		1.81 ± 0.23	
Masters	15	1.43 ± 0.11		2.24 ± 0.48		1.80 ± 0.14	
Other	11	1.35 ± 0.14		2.4 ± 0.51		1.85 ± 0.15	
Work Environment			0.3421(1.078)		0.4252(0.8587)		0.1213(2.132)
Public	148	1.33 ± 0.21		2.19 ± 0.52		1.82 ± 0.18	
Private	60	1.29 ± 0.23		2.25 ± 0.48		1.75 ± 0.28	
Other	3	1.23 ± 0.11		1.90 ± 0.17		1.9 ± 0.17	
Professional experience			**0.0083**(3.521)		0.3093(1.206)		0.1514(1.700)
<2	49	1.19 ± 0.24*		2.16 ± 0.42		1.73 ± 0.30	
2—5	69	1.34 ± 0.23		2.25 ± 0.59		1.83 ± 0.19	
6—10	54	1.33 ± 0.19		2.13 ± 0.46		1.78 ± 0.22	
11—15	19	1.43 ± 0.12		2.33 ± 0.52		1.84 ± 0.18	
15>	24	1.38 ± 0.12*		2.34 ± 0.47		1.83 ± 0.16	

Table 4.6 Association of Mean scores of Knowledge, Attitude, Practice and Socio-demographic characteristics of participants

Table 4.6 above shows the mean scores of knowledge, attitude and practices and their association with socio-demographic characteristics. The professional rank of participants was significantly associated (0.0089, 2.942) with their knowledgeof HIV/AIDS-related issues. Specifically, the significant difference was between those ranked as SN (1.26 ± 0.24) and PNO (1.40 ± 0.11). Also, work experience was significantly associated with knowledge of HIV/AIDS (0.0083, 3.521). Participants with 11-15 years' work experience scored high for knowledge and practice. The mean knowledge of participants increased as participants increased in age from 20-29 years (1.23 ± 0.26) to about 50-59 years (1.41 ± 0.09). However, participants who are more than 60 years (1.35 ± 0.08) did not have a corresponding increase in their knowledge. Those in the public hospitals had mean knowledge values of (1.33 ± 0.21) and those in private hospitals had a mean of (1.29 ± 0.23).

The mean attitude scores of the participants between the ages of 20-29 years (2.22 ± 0.58) and 30-39 years (2.15 ± 0.45) were higher than those who were less than 20 years (2.05 ± 0.17), but was lesser than those who were between the ages of 40-49 years (2.40 ± 0.42), 50-59 years (2.30 ± 0.48) and 60 years (2.43 ± 0.58). The mean attitude values of the participants increased from those who hold a certificate (2.17 ± 0.47), diploma (2.19 ± 0.57), bachelor's degree (2.21 ± 0.44) and master's (2.24 ± 0.48).

Gender was significantly associated with HIV/AIDS-related practices (0.0325, 2.154). Females (1.82 ± 0.19) scored high for HIV/AIDS-related practices than males (1.75 ± 0.27). As participants' age from 20-29 years (1.75 ± 0.26) to 40-49 years (1.83 ± 0.21), their mean for HIV/AIDS-related practices increased. Participants who are more than 60 years of age recorded the highest average (1.90 ± 0.17) of HIV/AIDS-related practices.

4.5 SUMMARY OF RESEARCH FINDINGS

A majority of the participants were females. The participants' age ranged from 20 to 60years, with the most represented age group being 20-29years. A majority of the nurses were staff nurses, and most of them were trained at a level below the first degree. Their work experience ranged from 2 to 15 years, 2-5 years is the range with the highest frequency. The majority were working in public hospitals. A majority reported caring for HIV and AIDS patients very often. The numbers who had not receive any training in aspects of HIV and AIDS were in the majority. Of those who had received training, the majority received their training in TB and HIV. Surprisingly, the majority of the nurses had never attended any in-service training on HIV and AIDS. Of those who have had the privilege of attending in-service training, the majority had attended once in their entire professional practice.

The overall knowledge of the nurses was moderate (1.3±0.2) with a majority scoring high for knowledge. However, some of the nurses sampled still hold wrong views or misconceptions about HIV and its transmission. The majority answered the questions correctly. However, it was surprising to note that, the majority did not know that pulmonary TB was a WHO clinical stage 2 condition. More than 70% did not know the risk of occupational HIV transmission is low after needle stick injury. A substantial number of them had incorrect knowledge about HIV and AIDS management, HIV transmission, and prevention/precautions.

The level of agreement and disagreement with the attitude questions displayed both innate positive and negative attitudes in participants, with the majority showing favourable attitudes towards PLWHA. However, some of the nurses demonstrated different forms of negative attitude, ranging from prejudicial to discriminatory and stigmatisation attitudes. A considerable number, 25(10.8%), strongly agreed and 28(12.1%) strongly disagreed with the statements 'nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity' and 'all patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease', respectively. More than half were of the view that PLWHA deserved the right to the

same quality of care as any patient (64.8), and that they should be treated with respect (59.5).

The overall practice of the nurses towards HIV/AIDS was satisfactory. However, their responses revealed some of them did not adhere to universal precautions. Some 25.6% and 19.4% of them recapped needles after use and did not wear gloves before examining patients. It was worrying to note that a proportion of them was not aware of the availability of PEP services in their facility. A few too would not consider starting PEP after exposure to HIV. Their reason for refusing to go on PEP after accidental exposure to HIV was not known since the study did not make inquiries about their reasons for refusal.

The SpearmanRHO correlation tested the association between HIV-related knowledge, attitude, and practice. The results showed that there is a significant correlation between knowledge and practice. Thus increased knowledge of HIV and AIDS was associated with increased compliance with universal precaution and HIV preventive practices. The attitude was positively correlated with knowledge but negatively correlated with practice, though not statistically significant. Thus, a more favourable attitude was associated with decreased compliance with universal precautions and HIV preventive practices.

Again, SpearmanRHO correlation was done for knowledge, attitude, practice and professional rank, level of education, work experience, training on HIV and age. The results showed that level of education was positively correlated with HIV related knowledge and attitude with nurses who have attained a master's degree, scoring high for knowledge (1.43 ± 0.11) and attitude (2.24 ± 0.48). However, their level of knowledge did not reflect on their practice (1.80 ± 0.14). Nurses with 'Diploma' rather scored high on practice (1.83 ± 0.20). Work experience was positively correlated with knowledge, attitude and practice, with 11-15 years of work experience scoring high for knowledge (1.43 ± 0.12), attitude (2.33 ± 0.52), and practice (1.84 ± 0.18). Nurses with work experience over 15 years, however, performed better with attitude (2.34 ± 0.47). Training on HIV was significantly correlated with knowledge and practice.

CHAPTER 5

DISCUSSION OF FINDINGS, CONCLUSION, LIMITATION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter describes the research findings in relation to nurses' knowledge, attitude and practices towards HIV and AIDS, providing a conclusion, limitation and recommendations based on the findings of the study.

The questionnaire used in this survey was adapted from Delobelle et al. (2009:1072-73) and modified for the purpose of this study. The response rate was 97% and thus it represents the sample analysed. As observed by Delobelle et al. (2009:1072-73), the questionnaire was reliable and valid for assessing the nurses' knowledge, attitude and practices towards patients diagnosed with HIV and AIDS.

5.2 DISCUSSION OF FINDINGS

Under this section, the researcher evaluates the research findings and those of other researchers who have published works on nurses' knowledge, attitude, and practices towards people living with HIV/AIDS. Under the discussion of findings, the author expresses her opinion on the whole study and discusses the findings based on the specific objectives of this study, which is to:

- assess nurses' HIV/AIDS-related knowledge;
- ascertain nurses' attitudes towards patients living with HIV and AIDS; and
- investigate the practices of nurses towards patients living with HIV and AIDS.

5.2.1 Demographic data

Just as a nursing profession is said to be dominated by females, the majority of the participants in this study were also females (68.2%). The participants' age ranged from 20 to 60 years, with the most represented age group being 20-29 years (41.4%). A majority of the nurses were staff nurses and most of them were trained at a level below the first degree. Their work experience ranged from <2 to 15 years, with <2-5 years as the range with the highest frequency. The majority worked in public hospitals.

5.2.2 Nurses' knowledge of HIV and AIDS

The overall knowledge of the nurses in this study was satisfactory, as similar to the findings of Faromoti et al. (2013:6) and Shahzadi et al. (2017:162). It must be noted that the study participants for Faromoti et al. (2013:6) were student nurses, but remains worth comparing. About 81% could correctly identify blood transfusion as a mode of HIV transmission. This is consistent with the findings of Marrazano et al. (2013:4) and Shahzadi et al. (2017:162) that nurses have correct knowledge of HIV transmission. Nonetheless, some of the nurses sampled still hold erroneous views or misconceptions about HIV and its transmission. A significant proportion (22.3%) said it is possible to transmit the virus to family members of a nurse providing care for persons with HIV/AIDS, even though the nurse is not infected. This should be a cause for worry since such wrong knowledge could inform nurses' discriminatory or unethical attitudes towards patients living with the virus. A similar observation is made by Wu et al. (2014:366) and Iwoi et al. (2017:5).

A majority 114(49.6) did not know pulmonary TB was a WHO clinical stage 2 condition. This is an indication of a huge knowledge gap. This study similarly suggests the need for the training of nurses in this regard (Dharmalingam et al. 2015:26). Similar to Famoroti et al. (2013:6), more than 70% were not aware of the risk of occupational HIV

transmission after needlestick injuries. However, the percentage of student nurses with incorrect knowledge about the risk of needlestick injury in the Famoroti et al. (2013:6) study was comparatively low (50%).

A substantial number of them had incorrect knowledge about HIV and AIDS management, HIV transmission and prevention/precautions. The inadequacy of knowledge displayed by participants in this study may be attributable to the lack of training on HIV through workshops and seminars. A majority (59.2%) of the nurses in this study admitted to not receiving any training on HIV and AIDS, even though the nature of their job requires them to care for HIV infected patients. It was also pitiful to note that majority (45%) of the nurses had never attended any in-service training on HIV and AIDS. Of those who have had the privilege of attending in-service training, the majority had attended once in their entire professional practice. This study agrees with the suggestions of Pal et al. (2016:130) and Okpala et al. (2017) regarding the need for continuous professional training for nurses involved in the management and care of PLWHA to boost their HIV-related knowledge and competence. In-service training on HIV and AIDS has been associated with an excellent display and retention of HIV-related knowledge among nurses. In India, 17% of the nurses had an 'excellent' knowledge, thus a knowledge score of 90%, while about 77% had a moderate level of knowledge (score of 70-90%). This was after they had received in-service training a year before the survey (Pal et al .2016:130).

A significant proportion of the nurses 30(13.0%) incorrectly answered the question 'HIV positive patients with a CD4-count <200 should be assessed for antiretroviral treatment' and 65(28.3%) did not know this at all. According to Boehler et al. (2016:210), nurses ought to be knowledgeable about antiretroviral treatment, including methods of administration, possible drug interactions, as well as their side effects, while also having the competence to address treatment adherence issues.

5.2.3 Attitude of Nurses towards PLWHA

The Joint United Nations Programme on HIV/AIDS cites fear of stigma and discrimination as the main reason people are reluctant to get tested, disclose their HIV status, and take antiretroviral drugs (UNAIDS 2014:2). Several studies have reported that nurses generally have favourable attitudes towards persons living with HIV and AIDS (Ishimaru 2017:5; Ledda et al. 2017:5; Zarei et al. 2015:297). Similarly, the results of this study showed that the nurses have positive attitudes, with the majority showing greater agreement with positive statements, and more disagreement with negative statements about PLWHA. Majority of the nurses 149(64.8%) and 144(59.5%) strongly agreed with the statements 'patients with HIV/AIDS have the right to the same quality of care as any other patient' and 'patients with HIV/AIDS should be treated with the same respect as any other patient'. This was quite encouraging and needs to be commended, considering their demonstration of fear of contracting the virus and transmitting to their families. The findings of this study are in congruence with a study by Ledda et al. (2017:5) study that although nurses have fears for contracting HIV, their consciences and integrity allowed them to display some positive attitudes by accepting PLWHA. This fear and anxiety is revealed in their responses to the statements 'healthcare workers are worried about getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment' (60.3% showing agreement) and 'when caring for a person with HIV/AIDS, you need to worry about putting your family and friends at risk of contracting the disease' (18.2% showing agreement). This not withstanding, it ought to be a cause for concern since these erroneous beliefs have the tendency to create a feeling of 'not being safe', and therefore lead to stigmatisation and discriminatory attitudes towards PLWHA.

According to Ekstrand et al. (2013:09), Don et al. (2018:6) and Zarei et al. (2015:297), fear and worry of contracting the virus was a key contributing factor to nurses' discriminatory and stigmatising attitudes. Maybe the use of pre-exposure prophylaxis ought to be considered among nurses in AIDS care and piloted with few nurses. Pre-exposure prophylaxis is the use of antiretroviral drugs (emtricitabine and tenofovir disoproxil fumarate) as a preventive strategy for people at risk for HIV (McCormack &

Dunn 2015:1). This may go a long way to dispel nurses' fears and improve their attitudes towards PLWHA, knowing 'they are protected'. Subsequent to any consideration, the drugs must, however, be subject to review by the Ghana Pharmacy Council, Food and Drugs Agents, as well as the Ghana Medical Council to determine their safety and whether their benefits outweigh their long-term side effects.

While nurses are mandated by the ethics of their profession to respect the patients' right to confidentiality and keep information obtained in contacts with clients to themselves (Dapaah & Senah 2016:8), 25.1% of the nurses in this study showed disagreement with the statement 'all patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease' ($p \leq 0.0001$), indicating their tendency to disclose PLWHA HIV status to others. Over three percent (3.5%) were neutral. In China, 46.4% of health workers disclosed a patient's HIV status to a colleague who was not directly involved in the care of such patient (Don et al., 2018:6). In Thailand, Pudong et al (2014:6) showed a third (1/3) of the samples had their HIV status disclosed to other people without their consent by health workers. In a study in Ghana, Dapaah and Sena (2016:8) acknowledge that nurses were conscious of their core duty to protect patients' information, however, knowing the possibility of an unintended risk of infecting others and themselves places them in dilemma as to whether to maintain confidentiality or not. This is however in contrast to a study in Nigeria by Farotimi et al. (2015:710), which found that although their participants were nursing students, the majority (87%) were in agreement with the statement PLWHA, have a right to decide who should know their status.

Acts of discriminatory attitudes emanating from fear of contagion were also shown in their quest to put on gowns and gloves with any contact with PLWHA (65.7%). Similar to the findings of this study, a study in KwaZulu-Natal, South Africa found 51% percent of the health workers wore gloves for non-invasive procedures on HIV-positive patients (Famoroti et al., 2013:6). Also, a study in Thailand found 31.8% of health workers using unnecessary personal protection measures, such as wearing double gloves when interacting with people living with HIV (Pudong et al. 2014:1).

Similar to other studies (Famoroti et al. 2013:6; Zarei et al. 2015:298), this study found that a fraction of the nurses had prejudicial attitudes towards PLWHA. A quarter of the population (25.5%) responded in the affirmative 'nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity' ($p \leq 0.0001$). The percentage of nurses displaying prejudicial attitudes in this study was, however, lower than that recorded in the Famoroti et al. (2013:6) (54.5%), Pudong et al. (2014:6) (42.5%) and Pal et al. (2016: 130:130) (50-83%) study.

As part of the Ghanaian Government's effort to help UNAIDS and WHO's "Agenda for Zero Discrimination", the Ghana AIDS commission launched the "Patients' Charter" to protect people living with HIV from discrimination within the healthcare system in 2013. A web-based reporting mechanism was additionally launched to help PLWHA report directly to the commission of incidents of discrimination, stigmatisation or prejudice through SMS (AVERT 2017:3). What the Ghana AIDS commission failed to recognise is that issues relating to the healthcare setting discrimination and stigma was multifactorial, and will equally require a multidimensional approach to curbing such negative attitudes. According to Ishimaru et al. (2017:5), increased HIV related knowledge, availability of resources and compliance with the standard precautions was a positive element contributing to a positive attitude in nurses. Vorasane et al. (2017:11) and Faromoti et al. (2013:5) have shown results consistent with those of Ishimaru et al. (2017:5). The Ghana Government, Ministry of Health and the Ghana AIDS commission ought to consider the approach of engaging its health workers in repeated in-service training to equip them with the right knowledge and competency in the area of HIV/AIDS management, testing, adherence counseling for antiretroviral therapy, and HIV/AIDS precaution/prevention.

5.2.4 Practices of nurses towards HIV and AIDS

Studies conducted to evaluate the prevalence of occupational exposures have shown that despite the increased risk of exposure to percutaneous injuries and body fluid splashes, there is non-adherence or poor adherence to universal precautions by nurses

and other paramedics (Marković et al. 2014: 792; Nderitu et al. 2015: 636). A World Health Organization report also has it that 90% of such cases occur in developing countries, where resources for and compliance with universal precaution is poor. Unfortunately, this study did not examine the prevalence of occupational HIV exposure among its study participants.

The practice of universal precautions by nurses was not adequate, but it can be said to be satisfactory, as the majority responded to adhering to the right practices. This is consistent with the findings of Som et al. (2015:18). The majority (92.6%) wore gloves before examining patients. The increased compliance with this precaution is consistent with the report by Becker's Hospital Review (2016:1). In their report, it was stated that the precaution with the highest compliance rate was wearing gloves (92%).

Contrary to the CDC guidelines which note that to prevent needle stick injuries health workers are mandated to discard used needles immediately after use and not recap them (Wisconsin Department of Health Service 2018:2), some 25.6 % of nurses in this study recapped needles after use. The findings of this study contradict those of Chalya et al. (2015:10) and Pal et al. (2016:130). Chalya et al (2015:10) investigating needlestick injuries and splash exposures among health workers found the recapping of needles was rarely practiced by participants. In Pal et al. (2016:130), the study participants gave a satisfactory response regarding needle disposal. Ninety-eight (98.3%)of their participants disposed of used needles by placing them in a cutter.

The majority (76.7%) washed hands before examining patients. The percentage of nurses practicing hand washing is relatively lower than the 82% recorded in Becker's Hospital Review (2016:1) but higher than the 65% recorded in the study by Pal et al. (2016:130). The 19% who did not wash their hands before examining patients indicate that some nurses poorly practiced universal precaution and will, therefore, need further training on the importance of hand washing. According to Suri and Gopaul (2018:2) as well as Chatrath (2017:3), a mandatory hand hygiene before and after contact with patients is the most significant procedure for preventing cross-contamination.

It was worrying to note that a proportion of them (21.3%) were not aware of the availability of PEP services in their facility. Seventy-eight percent (78.7%) were, however, aware of the availability of PEP in their workplace. This is consistent with the findings of Mathewos et al. (2013:4) (88%) and Habib et al. (2018:8) (95.3%). The differences in the percentages may be attributed to the differences in the samples and the formal training their participants received on PEP. A few (25.5%) too would not consider starting PEP after exposure to HIV. Their reason for refusing to go on PEP after an accidental exposure to HIV was not known since the study did not make enquiries about their reasons for refusal. However, previous studies have cited side effects of anti-retroviral drugs as a reason for poor uptake of PEP by nurses (Mill et al. 2014:14; Chalya et al. 2015:12).

5.3 CONCLUSION

The overall knowledge of the nurses was satisfactory; however, some had inadequate knowledge and misconceptions about HIV transmission. The study also found that nurses generally harboured a passion to care or serve PLWHA. Despite their increased fear of contagion, the majority displayed a positive attitude towards PLWHA. Fear of contagion was associated with erroneous beliefs about HIV transmission, leading to negative attitudes. Their compliance with universal precautions was satisfactory nonetheless, some of the participants still refused to adhere to basic universal precautions such as hand washing. Their reason for non-adherence to universal precautions was not known. The need for continuous in-service training of nurses on HIV and AIDS is a key contributing factor to promoting knowledge, correcting a misconception, favourable attitude and improve compliance to universal precautions and other preventive practices such as uptake of PEP.

5.4 LIMITATIONS

The study was carried out at five selected hospitals in the Kumasi metropolis and the results may therefore only apply to similar settings. This means that the results and conclusions from this study cannot be generalised to other areas, particularly in different settings. Interviewer bias was minimised through the use of self-administered questionnaires.

This study, however, had some strength, where it seems to be the first of its kind to be conducted in Ghana. Findings from this study will help the Government and the Ghana AIDS Commission to devise policies and educational strategies meant to equip nurses with the right prerequisite knowledge needed to dispense their duties to PLWHA in a way that conforms to the ethics of their profession.

5.5 RECOMMENDATIONS

The Ministry of Health in Ghana ought to create opportunities for ongoing training and development of nurses. This can be facilitated by nurse managers through in-service training that specifically addresses nurses' knowledge gaps in HIV transmission, management, and preventive measures. Training should be based on policies and research evidence on HIV and AIDS.

Hospitals in Ghana ought to collaborate to create nurses' platforms through the establishment of journal clubs or focus groups. This will allow nurses from different hospitals to discuss issues relating to HIV/AIDS as well as report on new evidence and updates on HIV/AIDS. To ensure that this becomes effective, nurses ought to have free access to the internet,especially at the workplace.

Nurses and Midwives Council of Ghana ought to integrate the education of basic aspects of HIV/AIDS into the curricula of undergraduate nurses in order to help them develop the competencies required to care for HIV and AIDS patients.

The integration of Watson's theory in the health care system in Ghana would help conscientise nurses towards their duty of care to PLWHA, and reduce their

discriminatory attitude thereby improving the health seeking behaviour of PLWHA. People living with HIV/AIDS may seek health and treatment or refused to seek health and remained vulnerable to HIV depending on nurses' level of stigma and discrimination towards them.

5.5.1 Recommendation for further research

Further research should be conducted to investigate:

- other factors leading to negative attitudes in nurses caring for HIV and AIDS patients;
- prevalence of occupational risk exposure to HIV among Nurses in Ghana;
- knowledge and uptake of post-exposure prophylaxis among Ghanaian nurses;
- other factors contributing to poor compliance of universal precautions among nurses in Ghana; and
- More studies should be conducted across the country to understand fully nurses' knowledge, attitude, and practices towards PLWHA.

5.6 CONCLUDING REMARKS

The performance of the nurses in the area of knowledge, attitude and practice were quite commendable, given that they had received limited or no training in relation to HIV and AIDS. This shows that when nurses are engaged in continuous in-service training, they will perform tremendously well. In other countries, education through in-service training has shown positive results. Ghana can adapt the strategies and in-service educational policies of other governments in their attempt at addressing and curbing the issues of stigma and discrimination in the health care system.

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Annexure A 1 Ethical clearance certificate UNISA-South Africa.

UNISA university of south africa

RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

4 April 2018

Dear Dorothy Serwaa Boakye

Decision: Ethics Approval

HSHDC/843 /2018
Dorothy Serwaa Boakye
Student no:5854-554-9
Supervisor: Prof AH Mahavandu-Mudzusi
Qualification: D Litt et Phil
Joint Supervisor: -

Name Dorothy Serwaa Boakye

Proposal: Nurses knowledge, attitudes and practices towards patients living with HIV in Ghana

Qualification: MPCHS94

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted from 4 April 2018 to 4 April 2020.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on7 February 2018.

The proposed research may now commence with the proviso that:

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*

2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

RECEIVED
2018 -04- 16
Executive Dean
College of Human Sciences

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PO Box 392 UNISA 0003 South Africa
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3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

4) *You are required to submit an annual report by 30 January of each year that the study is active. Reports should be submitted to the administrator, HSREC@unisa.ac.za. Should the reports not be forthcoming the ethical permission might be revoked until such time as the reports are presented.*

Note:
The reference numbers [top middle and right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.

Kind regards,

pp Maritz
Prof JE Maritz
CHAIRPERSON
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Annexure A 2: Ethical clearance certificate KNUST-Ghana

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Ref: CHRPE/AP/450/18

30th July, 2018.

Prof. AH Mavhandu-Mudzusi
Department of Health Studies
University of South Africa
SOUTH AFRICA.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: ***"Knowledge, Attitude and Practices of Nurses Towards HIV/AIDS Patients in Ghana."***

Proposed Site: ***KATH, KNUST Hospital, Manhyia Government Hospital, Aniniwaa Medical Center and Bomso Clinic.***

Sponsor: ***Principal Investigator.***

Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.

The Committee reviewed the following documents:

- Notification letters from the Selected Hospitals (study sites) indicating approval for the conduct of the study at the Hospitals.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning 30th July, 2018 to 29th July, 2019 renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Yours faithfully,

Osomfo Prof. Sir J. W. Acheampong MD, FWACP
Chairman

Room 7 Block J, School of Medical Sciences, KNUST, University Post Office, Kumasi, Ghana
Phone: +233 3220 63248 Mobile: +233 20 5453785 Email: chrpe.knust.kath@gmail.com / chrpe@knust.edu.gh

Annexure B 1: Approval letter from facility A

BOMSO CLINIC

(Specialist Hospital)

P. O. Box 8782
Kumasi - Ash. Ghana

Tel: (03220) 26834

Our Ref:: .....

Your Ref.:.....

16/08/2017

Dorothy Serwaa Boakye
University Of South Africa
Department Of Health Studies
City Of Tshwane – South Africa
Email: dorothyboakye@yahoo.co.uk
Mobile: 024-9924121

Dear Dorothy,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT BOMSO SPECIALIST HOSPITAL, KUMASI-GHANA

With reference to your letter dated 29th May 2016, we write to inform you that approval has been granted to conduct your research study:

NURSES' KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS PATIENTS WITH HIV/AIDS.

We look forward for a feedback of your results.

Yours faithfully,

.....K.A.D.....

K. AGYEMAN-DUAH
ADMINISTRATOR

Annexure B 2: Approval letter from facility B

ANINIWAH MEDICAL CENTRE

BANKERS:
Agric Development Bank, Kumasi
Ghana Commercial Bank, Kumasi
UT Bank, Kumasi

P. O. Box 5203
Kumasi-Ghana
West Africa

Fax: 03220-61391

Tel: 03220-60107 / 03223-95676

10/08/2017

Miss Dorothy Serwaa Boakye
University of South Africa
Department of Health Studies
City of Tshwane – South Africa
Kumasi

Dear Madam,

RE: PERMISSION TO USE YOUR FACILITY FOR RESEARCH STUDY

Reference to your request dated 29th May 2017 to use the hospital as a study site to undertake a research on the topic "Nurses Knowledge, Attitudes and Practices towards Patients with HIV and AIDS in Ghana.

We wish to grant the approval for the research to be conducted within the facility subject to fulfillment of under listed condition;

1. A copy of evidence of ethical approval from the ethics committee to be submitted to the Medical Director

Hoping the above condition will be addressed before commencement of the project.

Thank you.

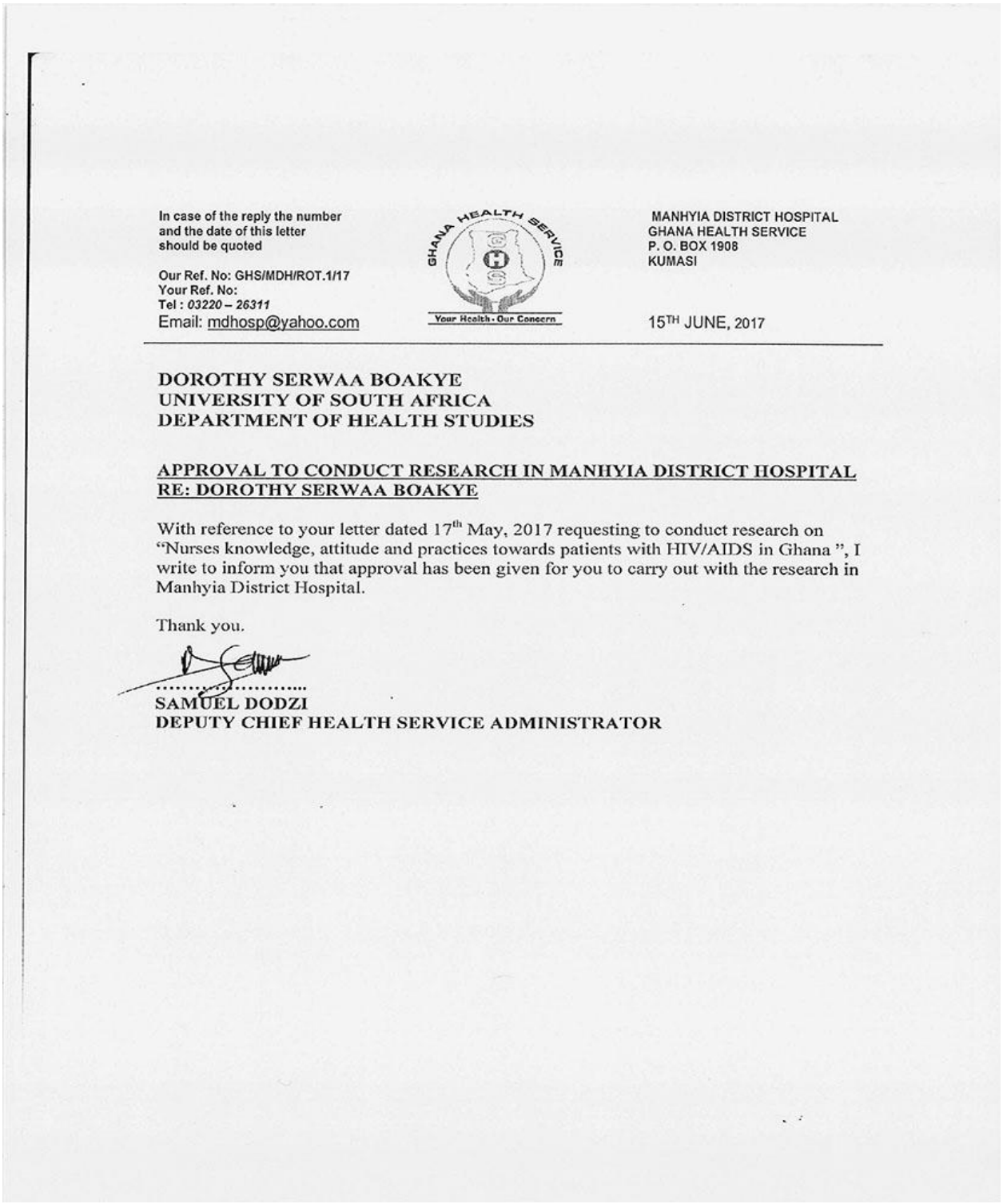
Yours faithfully,

Dr. Kofi Akohene Mensah
(CHIEF EXECUTIVE OFFICER)

CC: Committee on Human Research, Publications and Ethics
University of South Africa
City of Tshwane – South Africa

Keeping your health & living longer is our business

Annexure B 3: Approval letter from facility C



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

Our Ref. No: GHS/MDH/ROT.1/17
Your Ref. No:
Tel : 03220 – 26311
Email: mdhosp@yahoo.com

GHANA HEALTH SERVICE
Your Health · Our Concern

MANHYIA DISTRICT HOSPITAL
GHANA HEALTH SERVICE
P. O. BOX 1908
KUMASI

15TH JUNE, 2017

DOROTHY SERWAA BOAKYE
UNIVERSITY OF SOUTH AFRICA
DEPARTMENT OF HEALTH STUDIES

APPROVAL TO CONDUCT RESEARCH IN MANHYIA DISTRICT HOSPITAL
RE: DOROTHY SERWAA BOAKYE

With reference to your letter dated 17th May, 2017 requesting to conduct research on "Nurses knowledge, attitude and practices towards patients with HIV/AIDS in Ghana ", I write to inform you that approval has been given for you to carry out with the research in Manhyia District Hospital.

Thank you.

.....
SAMUEL DODZI
DEPUTY CHIEF HEALTH SERVICE ADMINISTRATOR

Annexure B 4: Approval letter from facility D

Kwame Nkrumah
University of Science
and Technology
University Health Services

KNUST HOSPITAL

Private Mail Bag
University Post Office
Kumasi-Ghana

Phone: +233 (0) 3220-60320
Fax: +233 (0) 3220-60300
Email: hospital@knust.edu.gh

UH/51/Vol.1

18th July, 2017

Dorothy Serwaa Boakye
University Of South Africa
Preller Street, Muckleneuk Ridge
City Of Tshwane
P.O.Box 392
UNISA 0003
South Africa

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT KNUST HOSPITAL

Your letter dated 29th May, 2017 on the above subject refers.

Your request for permission to conduct a research project on **"Nurses' Knowledge, Attitudes and Practices towards Patient with HIV/AIDS in Ghana"** at the KNUST Hospital has been approved.

We will appreciate receiving the results of your research findings.

Thank you.

Dr. Osei Kwaku Wusu-Ansah
DIRECTOR

Annexure B 5 (a): Approval letter from facility E

KOMFO ANOKYE
TEACHING HOSPITAL

P. O. Box 1934
KUMASI - GHANA
Tel: +233 - 3220-22301 - 4
Fax: +233 - 3220 - 24654/24621
Website: www.kathsp.org

Our Ref. No:.....

Your Ref. No:.....

11TH JULY, 2017

Dorothy Serwaa Boakye
University of South Africa
Preller Street, Muckleneuk Ridge
City of Tshwane
P. O Box 392
UNISA 0003
South Africa

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT KOMFO ANOKYE TEACHING HOSPITAL

Your letter dated 6th June, 2017 on the above subject refers.

Your request for permission to conduct a research project on **"Nurses' Knowledge, Attitudes and Practices towards Patients with HIV/AIDS in Ghana"** at the Komfo Anokye Teaching Hospital has been approved.

We will appreciate receiving the results of your research findings.

Thank you.

Mrs. Dorothy Yeboah
DEPUTY DIRECTOR NURSING SERVICES

A Centre of Excellence

Annexure B 5 (b): Approval letter from facility E ethics committee

KOMFO ANOKYE TEACHING HOSPITAL

RESEARCH AND DEVELOPMENT UNIT (R & D)

CERTIFICATE OF REGISTRATION

REG. NO: RD/CR17/220

This is to certify that

Prof/Dr/Mrs/Mr/Ms *Boakye Dorothy Serwaa*

has registered his/her proposed study titled *Nurses' Knowledge, attitude and practices towards HIV/AIDS patients in Kumasi*

.....with the Research and Development Unit.

Date *11th July, 2017*

Name of issuing officer

Juliet Ampomah Frimpong

Signature

K/16/0273195

***This certificate does not constitute ethical clearance for the conduct of the study but proof of registration of study with KATH. Ethical clearance from the Committee of Human Research Publications and Ethics (CHRPE) is required to conduct the study*

ANNEXURE C

Dorothy Serwaa Boakye
Student Number: 58545549
Module Code: MPCHS94

PARTICIPANT INFORMATION SHEET

University of South Africa
Department of Health Studies

Research Title: Nurses' Knowledge, Attitudes and Practices Towards Patients With HIV and AIDS In Ghana

Dear Prospective Participant

My name is Miss Dorothy Serwaa Boakye and I am doing research with Prof. AH Mavhandu-Mudzusi, a professor in the Department of Health Studies towards a degree MA Nursing at the University of South Africa. We are inviting you to participate in a study entitled Nurses' Knowledge, Attitudes and Practices Towards Patients with HIV and AIDS in Ghana.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to investigate knowledge, attitudes and behaviours towards patients living with HIV and AIDS among nurses in Ghana in order make recommendations for enhancing the care and support of patients living with HIV.

WHY AM I BEING INVITED TO PARTICIPATE?

You are being asked to participate because your health care facility is amongst those that have been recognized by the Ghana Health Services as providing health care to

people living with HIV/AIDS. Your details were obtained from the administrator of this health care facility with approval from the Director of this institution. You have been chosen because nurses have been identified as health professionals at the forefront of the HIV/AIDS epidemic. It is therefore essential to identify nurses KAP to occupational HIV transmission, disease presentation and HIV/AIDS risk prevention and recommendations for future training of nurses. This study intends to interview all nurses working on HIV/AIDS management ward in this facility.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves questionnaire which you will be expected to complete. The questionnaire will elicit demographic information as well as information relating to HIV/AIDS training and care, and variables relating to HIV/AIDS knowledge, attitude and practices. The time taken to complete the questionnaire will range from 15 to 20 minutes.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason. You can however not withdraw after submitting your completed questionnaire.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

Please note that you will **not** receive any financial compensation or incentive for participating in the study. No participant will be paid to participate in the study.

ARE THEIR ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

The foreseeable risk which is likely to be associated with this research is the possibility of a feeling of fear of being punished for an honest response which otherwise would depict a negative attitude, inadequate knowledge/misconception and bad practice which may not be in agreement with the Ministry of Health policy on AIDS care.
To address this, participants will be assured that this exercise is purely for academic purpose and their names will not be associated with any response. Again, they will be assured that, no punitive measures such as withdrawal of their practicing pin/certificate will be meted out to any of them but rather their responses will help authorities to identify training needs of nurses.

An additional risk which the researcher anticipates is the possibility of participants suffering a psychological pain or stress especially for those who may themselves be victims of HIV related discrimination or stigma or may have lost relatives, partners and/or friends to HIV and AIDS. Such participants will immediately be identified and referred to a psychologist or counselor. Participants who will experience difficulty in completing questionnaires due to psychological pain or stress will be allowed to discontinue with the study and will equally be referred to a psychologist. Such uncompleted questionnaires will be rendered invalid and will not be included in the data analysis.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

You have the right to insist that your name will not be recorder anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research *[this measure refers to confidentiality]* OR your name will not be recorded anywhere and no one will be able to connect you to the answers you give *[this measure refers to anonymity]*. Your answers will be given a code

number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings *[this measure refers to confidentiality].*

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet in the Department of Health Studies at the University of South Africa in Pretoria for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Indicate how information will be destroyed if necessary by shredding the hard copies.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

No participant in this study will be offered any financial rewards. Research will be presenting and collecting the questionnaire herself. No cost is anticipated to be incurred by the participants.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the University of South Africa, Department of Health Science Research Ethics Committee.

A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Miss Dorothy Serwaa Boakye on +233249924121 or dorothyboakye@yahoo.co.uk. The findings are accessible for 12 months. Should you require any further information or

want to contact the researcher about any aspect of this study, please contact Dorothy Serwaa Boakye at dorothyboakye@yahoo.co.uk.
Or

Should you have concerns about the way in which the research has been conducted, you may contact my supervisor Prof AH Mavhandu-Mudzusi on +27124292055 or mmudza@unisa.ac.za.

Or

The chairperson of University of South Africa, Department of Health Studies, Research Ethics Committee. Prof J. Maritz at maritje@unisa.ac.za

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.
(signature)
Dorothy Serwaa Boakye

ANNEXURE D

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname……

Participant Signature……..Date……

Researcher's Name & Surname……

Researcher's signature……..Date……

ANNEXURE E

QUESTIONNAIRE ON NURSES KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS PATIENTS LIVING WITH HIV AND AIDS IN GHANA.

Dear respondent,

This survey is being conducted to assess knowledge, attitude and practices of nurses towards HIV/AIDS patients receiving care and management at your respective health facility. The researcher is hopeful that the outcome of this study may provide you and other nurses the prerequisite knowledge, understanding and the right attitude to care for and manage HIV clients successfully as well as help to minimize the fears and anxieties nurses experience in caring for HIV and AIDs patients. To achieve this, your maximum cooperation and sincere responses are therefore needed. Please note that participation in this survey is voluntary and that every participant has the right to withdraw at any time. Participation is also anonymous and confidentiality will be guaranteed at all times.

Please begin by completing the following questions:

Biographic data

1. How old are you?	<20	20–29	30–39	40–49	50–59	60> (years)

2. What is your gender?	M	F

3. What is your rank?	EN	SEN	SN	SSN	NO	SNO	PNO	CNO

4. What is your highest educational qualification?	certificate	Diploma	Degree	Masters	Other

5. What is your work environment?	Public Hospital	Private Hospital	Other

6. How many years of professional experience do you have?	<2	2-5	5-10	10-15	15> (years)

7. How often do you care for HIV/AIDS patients?	Never	Rarely (≤ 1/ month)	Sometimes (>1/month)
	Often (>1/week)	Very often (>5/week)	Don't know

8. Have you received any training in aspects of HIV/AIDS management until now?	Yes	No

If response to question 8 is yes, please specify:

VCT	PMTCT	STI	TB & HIV	ART	Couple counselling	other

If other, please specify: ……

9. How often do you go for seminars/workshops on HIV/AIDS management?	Monthly	Quarterly	Twice yearly
	Yearly	Never	Other

If other, please specify……..

10. Are you interested in the following HIV/AIDS interventions in your workplace:				
a. Counselling & testing of staff members	Yes	No	Don't know	Already in place
b. Committee groups on HIV/AIDS care				
c. Attending in-service training programs				

11. Have you been tested for HIV?	Yes	No

Instructions for scoring the following sections:
Please answer items in section A by circling 'True' (T), 'False' (F) or 'Don't know' (DK). If you do not know the answer, please do not guess but circle 'DK' in the last column.

HIV/AIDS Knowledge Scale	**T**	**F**	**DK**
1. HIV can be transmitted by casual contact			
2. HIV can been transmitted to people receiving blood transfusion			
3. The HI virus can easily be killed with disinfectant in the environment			
4. HIV is highly contagious			
5. HIV/AIDS is characterized by a decrease in T-4 lymphocytes, causing an impaired cellular immunity			
6. A person with antibody to the virus is protected against HIV/AIDS			
7. All pregnant women infected with HIV will have babies born with AIDS			
8. Gloves are not necessary when handling body fluids			
9. Following an accidental needle stick, there is a greater likelihood of infection with hepatitis B than with HIV/AIDS			
10. People infected with HIV can be asymptomatic, but still infectious			
11. It is possible to transmit the virus to family members of a nurse providing care for persons with HIV/AIDS, even though the nurse is not infected			
12. The risk of infection with HIV after an accidental needle stick injury at			

the work place is high			
13. An individual may be infected with HIV even if he/she tests negative for HIV/AIDS antibodies			
14. A person can be infected with HIV for 5 years or more without getting AIDS			
15. The risk of occupational HIV infection and transmission among health workers is high			
16. Gloves and gowns are required for any contact with patients with HIV/AIDS			
17. One should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi's sarcoma			
18. The risk of transmission of HIV during mouth to mouth resuscitation is extremely low			
19. To prevent accidental injury, contaminated needles should be recapped immediately after use on patients with HIV/AIDS			
20. Pregnant health care workers are at greater risk of contracting HIV infection at the workplace			
21. HIV can be easily transmitted through saliva, sweat and tears			
22. TB can be prevented in people living with HIV/AIDS using TB preventive therapy			
23. TB treatment is the same whether a patient is infected with HIV or not			
24. Most HIV-positive TB patients have no symptoms or signs of HIV disease			

25. Pulmonary TB is classified as a WHO clinical stage 2 condition			
26. Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease			
27. HIV-positive patients with a CD4-count <200 should be assessed for antiretroviral treatment			
28. Adherence to antiretroviral treatment is essential to avoid the development of drug resistance			

For section B indicate if you agree or disagree with the statement by circling 'Strongly disagree' (SD), 'Disagree' (D), 'Neither disagree nor agree' (N), 'Agree' (A) or 'Strongly agree' (SA).

HIV/AIDS Attitude Scale	**SD**	**D**	**N**	**A**	**SA**
1. Most people with HIV/AIDS only have themselves to blame					
2. When admitted to hospital, patients who are HIV-positive should not be put in rooms with other patients					
3. When caring for a person with HIV/AIDS, you need to worry about putting your family and friends at risk of contracting the disease					
4. Patients with HIV/AIDS have the right to the same quality of care as any other patient					
5. It is especially important to work with patients with HIV/AIDS in a caring manner					
6. Patients with HIV/AIDS should be treated with the same respect as any other patient					

7. Healthcare workers are worried about getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment					
8. Health care workers are sympathetic towards the misery that people with HIV/AIDS experience					
9. Nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity					
10. All patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease					

Section C should be answered by circling 'Yes' (Y), 'No' (N) or when the question does not apply to you, by circling 'Not applicable' (N/A).

HIV/AIDS Practice Scale	**Y**	**N**	**N/A**
1. Do you encourage people to get tested and counselled for HIV/AIDS?			
2. Do you refer people for voluntary counselling and testing, even if these services are not available at your workplace?			
3. Do you know HIV/AIDS service providers or recognized organization in your area where you can refer your patients to?			
4. Do you practice universal blood and body fluid precautions at your workplace?			
5. The last time you took a blood sample, did you wear gloves?			
6. Do you wash your hands before examining a patient?			
7. Do you recap needles immediately after using them?			
8. Do you treat blood spills on floors or other surfaces with a disinfectant			

before cleaning up?			
9. Do you have post-exposure prophylaxis (PEP) at your workplace?			
10. Did you ever consider starting PEP after an occupationally acquired needle stick injury?			

Thank you for your cooperation!