

**ASSESSING HIV/AIDS KNOWLEDGE, ATTITUDE AND PERCEIVED RISKS
OF PROFESSIONAL NURSES IN A PSYCHIATRIC HOSPITAL,
WESTERN CAPE, SOUTH AFRICA**

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ABSTRACT

As South Africa continues to experience the highest prevalence of HIV/AIDS globally, co-occurring mental illness poses challenges for public health. Mental illness has increased among people living with HIV/AIDS (PLWHA), as infected individuals succumb to the psychological stress and trauma of the disease. Key research issues, not yet well established, relate to whether professional nurses, working in psychiatric hospitals in South Africa, are equipped with the necessary knowledge and skills to be able to provide effective mental healthcare services, given the increase in mental illness of PLWHA. An increase in mental illness translates into an increase in demand for psychiatric services by PLWHA. There is a paucity of research on HIV/AIDS knowledge of professional nurses working in psychiatric hospitals in South Africa, despite the established acknowledgement of the increase of mental illness amongst PLWHA. The aim of this study was to assess the HIV/AIDS knowledge, attitude and perceived risks of professional nurses working in a psychiatric hospital in the Western Cape, South Africa.

A quantitative, descriptive survey design, using an all-inclusive sampling method, was used to select 121 professional nurses employed at a psychiatric hospital in Western Cape to participate in the study. The objectives of the study were to: describe professional nurses' knowledge of HIV/AIDS; describe the attitudes of professional nurses towards PLWHA and mental illness; and determine professional nurses' perceived HIV risks in a psychiatric hospital.

After ethics clearance was obtained, data was collected by means of an adapted, existing structured HIV/AIDS KAP questionnaire developed by Delobelle et al (2009). The questionnaire was a Likert type questionnaire containing 47 items. The response rate was 71 % (n=86). The data was analysed using the Statistical Package for Social Science (SPSS), version 24. The results revealed that respondents had moderate knowledge on HIV/AIDS. However, insufficient knowledge in areas related to HIV infection control was noted. Respondents had a positive attitude towards PLWHA, although, fear of contagion was noted, as 44.1% agreed that healthcare workers are worried of getting HIV in their work environment, 29.1% disagreed, and 24.4% were neutral. Respondents did not adhere to universal and standard precaution practices which indicated a low risk perception of HIV. The study sample was based on one psychiatric hospital in the Western Cape, therefore, the result cannot be generalised. Further qualitative research that seeks to understand HIV knowledge of healthcare workers working in psychiatric hospitals in South Africa is needed.

KEYWORDS

Attitude

Co-occurring

HIV Infection

Knowledge

People living with HIV/AIDS

Professional nurses

Psychiatric hospital

Perceived risks



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ABBREVIATIONS

ART: Antiretroviral Treatment

HIV/AIDS: Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

IDS: Intellectual Disability Service

PLWHA: People living with HIV/AIDS

StatSA: Department of Statistics South Africa

WHO: World Health Organization



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DECLARATION

I declare that the study, *Assessing HIV/AIDS Knowledge, attitude and perceived risks of professional nurses in a Psychiatric Hospital, Western Cape, South Africa*, is my original work, that it has not been submitted for any degree or examination at any University and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full Name: Tsitsi Regina Makaudze

Date: December 2018

Signed:





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Firstly, thanks be to God for the grace, health and strength he giveth me, through it all you have seen me through.

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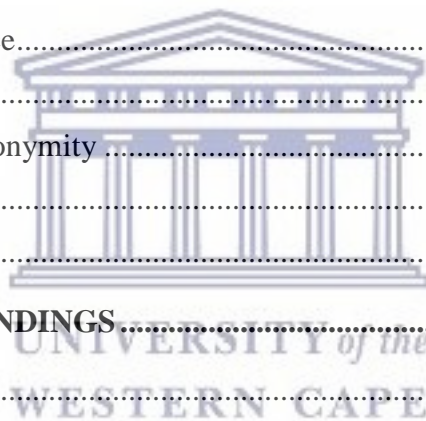
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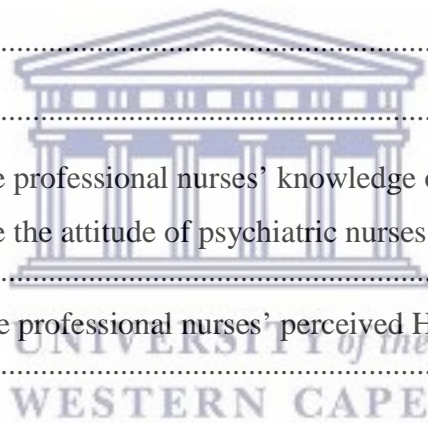
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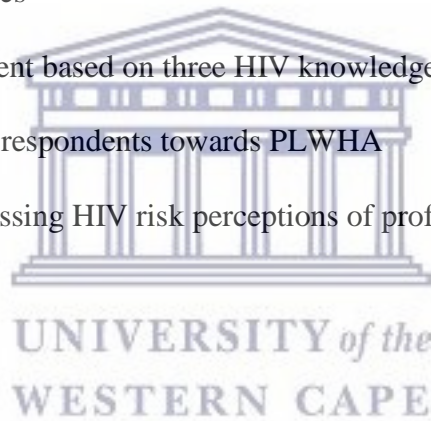
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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION

South Africa is one of the countries in the Southern African Community (SADC) region with the highest prevalence of HIV/AIDS in the world, with about 7.2 million people estimated to be living with HIV/AIDS (UNAIDS, 2018). Figure 1.1 shows the estimated number of PLWHA within the SADC region for the period 2000 to 2015. As observed, South Africa has the highest number of PLWHA compared to all other countries in the region. The number of PLWHA for most countries within the region decreased between 2010 and 2015, and it should be noted that, due to the concerted effort to fight HIV, there has been a decline in HIV-related deaths, a decrease in new HIV infections, and an increase in the uptake of ART (UNAIDS, 2018).

The observed increase of PLWHA in South Africa, however, may be attributed to certain socio-economic (Shisana et al, 2014), and behavioural (Cluver, Boyes, Orkin, Pantelic, Molwena & Sherr, 2013) factors. Socio-economic factors include, but are not limited to, transactional sex, associated ills such as a rise in chronic poverty, marital status, drugs, stigma and denial, and gender-based violence (Sishana et al, 2014). Behavioural factors include: early sexual debut, multiple partners, condom use inconsistencies, intergenerational sexual relationships, concurrent multiple-sex partners, and untreated viral sexually transmitted infections (Sishana et al, 2014; Cluver et al 2013). These factors have worsened the HIV/AIDS epidemic in South Africa.

Mental illness, on the other hand, increases one's vulnerability to some of the behavioural and social factors discussed above, thus increasing the likelihood of HIV infection. Furthermore, studies have shown an increase in mental illness in general, notably so amongst PLWHA. This increase translates into an increase in psychiatry admissions. Nurses then have to contend with patients who have a co-occurring mental illness, which may be the primary reason for the admission to hospital. What is

unknown, is what nurses' HIV knowledge, attitude and risk practices are in environments such as psychiatric hospitals, which focus on mental healthcare.

Professional nurses' knowledge of HIV/AIDS and attitudes towards people living with HIV/AIDS (PLWHA) is of paramount importance in mental healthcare, given the increasingly observed high correlation and/or comorbidity between HIV/AIDS and mental illness. In addition, professional nurses are exposed to practice risks, for example, accidental needle injury or patient-related injuries, as they work day-to-day offering direct patient care services to mentally ill patients, including those living with HIV/AIDS. It is therefore important to understand the perceived risk of HIV/AIDS.

1.2 BACKGROUND OF THE STUDY

This section provides an overview of HIV, mental illness and the correlation between the two. It aims to shed light on the importance of understanding nurses' HIV knowledge, attitude and perceived risks.

HIV/AIDS overview

HIV/AIDS remains a worrisome issue to the entire world, as the global population of PLWHA increased from 27.4 million in 2000, to 36.9 million in 2017 (UNAIDS, 2018). Even though the global number of PLWHA has increased, new HIV infection has shown a decline. 2.8 million new infections were recorded in 2000, and 1.8 million new infections were reported in 2017 (UNAIDS, 2018). Significantly, global HIV/AIDS related deaths decreased from 1.9 million in 2004, to 1.4 in 2010, and 940 000 in 2017 (UNAIDS, 2018). This is all due to the financial and scientific support in managing the epidemic.

Sub-Saharan Africa is heavily burdened by HIV, consisting of 53% of the global population of PLWHA (UNAIDS, 2018). In 2013, HIV/AIDS accounted for 74% of the 1.5 million deaths in this

region (Kharsany & Karim, 2016). Despite sub-Saharan Africa only accounting for 12% of the global population, it carries the most burden of HIV/AIDS globally (Kharsany & Karim, 2016). In 2017, regionally, sub-Saharan Africa had the highest number of PLWHA, with 19.6 million PLWHA out of the 36.9 million PLWHA globally (UNAIDS, 2018).

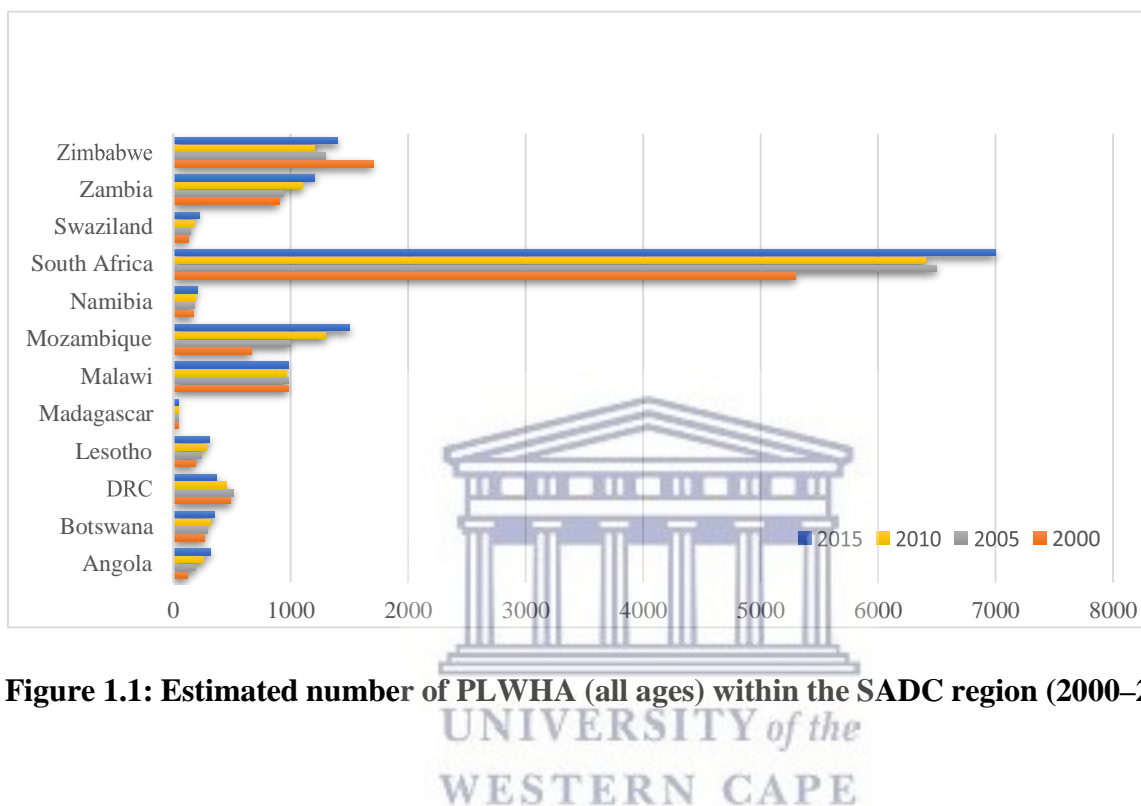


Figure 1.1: Estimated number of PLWHA (all ages) within the SADC region (2000–2015)

A similar trend is observed in South Africa. Although considerable progress has been achieved to date in managing HIV, the number of PLWHA continues to rise. The prevalence of HIV/AIDS increased from 10.6% to 12.2% between 2008 and 2012 respectively, equivalent to an estimated 470,000 new infections (Sishana et al, 2014). Figure 1.1 shows the estimated number of PLWHA within the Southern African Development Community (SADC) region for the period 2000 to 2015. South Africa has the highest number of PLWHA with 7.2 million (UNAIDS, 2018), compared to all other countries in the SADC region. While some countries within the region had a decrease in PLWHA between 2010 to 2015, this is not the case with South Africa, as the number of PLWHA continues to increase.

Globally, initiatives to combat the aforementioned HIV/AIDS pandemic were adopted by many countries, including South Africa. Between 2000 and 2015, more than 15 million people had access to ART worldwide – more than a five-fold increase compared to 2000 (WHO, 2016). Intervention strategies included: HIV education; free male circumcision; and the implementation of the ART, the largest ART programme in the world. These initiatives have yielded positive results as evidenced by: a decrease in AIDS-related deaths; a significant increase in male circumcision; increased access to ART for more than 2 million people (Sishana et al, 2014).

In all these interventions, nurses are at the realm of caring for PLWHA in different settings, they are at the forefront of providing care (Singh, Din Ahmad, Muneer, Sabah & Baig, 2015), including psychiatric hospitals.



HIV and mental illness

As the world battles HIV, a 19% increase in comorbidity of HIV and mental illness has been observed (Breuer et al, 2011). Similarly, HIV amongst mentally ill persons has been on the rise globally. In South Africa, a study indicated that an estimated almost half (43.7%) of PLWHA may have some form of mental illness (Skeen & Saxena, S., 2012)

Mental illness was found to develop at any stage of HIV/AIDS infection in PLWHA (Reid et al, 2012). There are three stages of HIV, first is the acute initial stage, followed by an asymptomatic period, which is then followed by significant increase in viral load and a decrease in CD4+T cell count, which results in a collapse of the immune system (Hernandez-Vargas & Middleton, 2013). The HIV virus' invasion of the central nervous system influences the neurocognitive dysfunction that results in the development of mental illness in PLWHA (Breuer, Myer, Struthers and Joska, 2011).

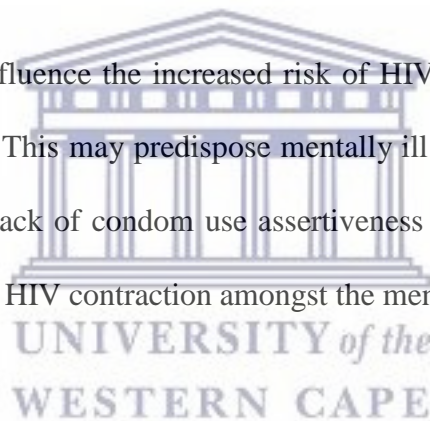
Furthermore, HIV compromises the blood-brain barrier, making PLWHA more susceptible to medication side effects (Reid et al, 2012), thus, predisposing them to medical complications.

Psychological stress and trauma, social factors, and medical complications may also contribute to the development of mental illness in PLWHA.

FACTORS INFLUENCING HIV RISK IN MENTALLY ILL PATIENTS

The risk of contracting and transmitting HIV, particularly among people with severe mental illness is high (Reid et al, 2012; Blank et al, 2011; Collins et al, 2006). HIV among people living with mental illness has been found to be higher than the general population. It is estimated to range between 4% to 23% as compared to 4% to 6% in the general population (Blank et al, 2011).

There are factors which may influence the increased risk of HIV infection in mentally ill patients including cognitive impairment. This may predispose mentally ill patients to be easily coerced into having unprotected sex, due to lack of condom use assertiveness (Seeman, 2015; Hughes & Gray, 2008), thus increasing the risk of HIV contraction amongst the mentally ill.



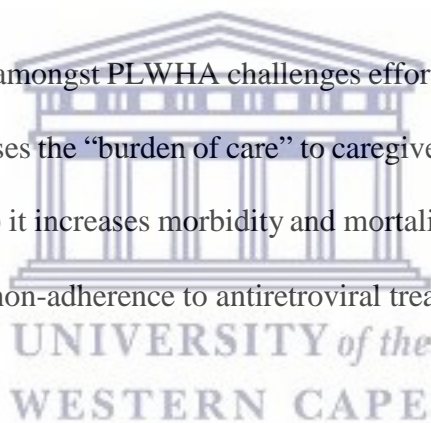
In addition, there are some neuropsychiatric disorders such as bipolar mood disorders, which may compound the risk of HIV contraction. During the manic phase of bipolar mood disorder, sexual disinhibition can present. This predisposes the mentally ill to engage in risky sexual behaviour, and at times drug use (Hughes & Gray, 2008; Blank et al, 2011).

Furthermore, the risk of transmitting and contracting HIV/AIDS is high amongst the mentally ill, especially where substance or alcohol use is involved (Blank et al, 2011). Impaired judgment, or a need for a sense of belonging, can lead some mentally ill persons to drug use, thus exposing or putting them at risk for HIV infection (Blank et al, 2011).

In an effort to combat HIV, there has been an increase in the availability of antiretroviral treatment (ART). The increased availability of ART has improved the lives of PLWHA as they are able to live longer, more productive lives (Phakathi et al, 2011). Unfortunately, side effects of some ART, such as Efavirenz, can cause mental illness (Reid et al, 2012).

Therefore, PLWHA taking psychotropic drugs need close monitoring, especially for possible side effects, and drug interactions with ART. As noted, generally, there is an increased sensitivity to the side effects of medication in PLWHA, with compromised functioning of the blood-brain barrier, especially in those with depleted lean body masses (Reid et al, 2012).

The prevalence of mental illness amongst PLWHA challenges efforts to conquer the HIV/AIDS battle in a number of ways: (a) it increases the “burden of care” to caregivers (for example: family members; healthcare workers; etcetera.); (b) it increases morbidity and mortality and the cost of healthcare; and (c) it increases the likelihood of non-adherence to antiretroviral treatment (Patel et al, 2013).



Added together, these challenges call for a holistic approach that incorporates mental healthcare into the general care of PLWHA. Therefore, the correlation between HIV/AIDS and mental illness has stimulated research questioning whether healthcare workers, particularly nurses, possess the necessary knowledge to manage or identify mental illness in the increasing cases of patients suffering from co-occurring conditions, predominantly HIV/AIDS and mental-illness. Studies (McDaniel, 1998; Mall et al, 2012; Chorwe-Sungani, 2013; Mall, 2013) have aimed to establish the knowledge of mental health problems held by healthcare workers, including nurses, providing care to PLWHA (Mall et al, 2012). The studies focused on community and/or general hospital-based settings, as these nurses are deemed to be at the forefront of providing HIV/AIDS care in community healthcare or

primary healthcare centers. Chorwe-Sungani's (2013) study was conducted in Malawi with 109 respondents. Findings alluded to a significant lack of knowledge regarding mental illness amongst nurses providing care to PLWHA in a central general hospital. Mall et al (2012) study on the other hand, focused on HIV service providers in primary, secondary and tertiary care. Results were similar to Chorwe-Sungani (2013) in that there was a lack of mental illness knowledge amongst HIV service providers. The findings revealed that services such as counselling, were withheld for PLWHA and mental illness due to fear of aggression. Both studies highlighted the need for mental health training for nurses and HIV service providers. These studies alluded that the provision of training will improve service provider's willingness to care and develop skills that will assist in the identification of mental illness in PLWHA, and the management thereof.

On the other hand, HIV knowledge, attitude and the understanding of risk perception of nurses in psychiatric hospitals is equally important, as research findings continue to highlight the increasing mental health disease burden amongst PLWHA, translating into an increased demand for psychiatric specialist services by PLWHA (Adams, Zacharia, Masters, Coffey, & Catalan, 2016). There is a paucity of research that explores this area, despite the identification of increased comorbidity. As discussed earlier, one side of this comorbidity has been unpacked, as most research focused on assessing mental health problems knowledge for HIV care providers' and nurses. However, little research was found to have assessed HIV knowledge, attitude or risk perception of nurses in psychiatry in South Africa, or Africa at large, notwithstanding the known burden of HIV/AIDS.

A study conducted in the United Kingdom (UK), focused on investigating the attitudes, knowledge, and practices of mental healthcare workers regarding HIV and other sexually transmitted diseases in people with serious mental illness (Hughes & Gray, 2008). The study surveyed 650 mental healthcare workers in London, including nurses. The findings showed that mental healthcare workers were not aware of the prevalence of HIV in people with schizophrenia (Hughes & Gray, 2008). However,

respondents were found to have a positive attitude towards sexual health promotion and were aware of the risk factors for HIV and risky behaviours. Those who were exposed to drug and alcohol training were more aware of HIV risks and risky behaviours.

Whilst no empirical studies were found to have been done in Africa, South Africa or in the Western Cape, assessing HIV knowledge, attitude and HIV risk perception of nurses in psychiatry, anecdotal information suggests that health-care professionals may lack the knowledge to provide holistic care to PLWHA and mental illness. This compromises the delivery of quality healthcare services and militate against the attainment of healthcare goals and outcomes, as mandated under the United Nations Sustainable Development Goals (SDGs). Moreover, their attitude and HIV risk perception is unknown.

Understanding service providers' attitudes to HIV/AIDS, enables proper training to be developed, as attitudes can be changed through new information and experiences (Okpala Uwak, Nwaneri, Onyapat, Emesowum, Osuala & Adeyemo, 2017). Awareness of one's attitude, either positive or negative, can effect change in behaviours by avoiding healthcare provider stigma if negative, and by building one's self-esteem in caring for PLWHA and mental illness if positive (Okpala et al, 2017). Similarly, understanding HIV risk perception of nurses will ensure suitable training is provided. This will aid in addressing the fear of contagion and ensure the implementation of safe practices which will minimise the risk of new HIV infection amongst staff and patients.

As outlined by Seeman (2015), mental healthcare workers in psychiatry can contribute significantly to the management of PLWHA and mental illness. This could be done through engaging patients in discussions around condom use, contraception, HIV risk behaviours, promoting adherence and explaining the effects of substance abuse on ART, adherence and monitoring medication side-effects,

and drug interactions (Seeman, 2015). It can be done if nurses in psychiatry have the necessary HIV knowledge. Therefore, this study seeks to assess HIV knowledge, attitude and describe the risk perception of professional nurses working in psychiatry.

1.3 PROBLEM STATEMENT

Associated with HIV/AIDS is a possible risk of developing mental disorders, as mental health problems have been identified as the most common comorbidity in PLWHA (Adams et al, 2016). The resulting comorbidity presents a heavy burden of care not only to family members, but more importantly, to healthcare professionals in hospitals, including psychiatric hospitals (Mulaudzi, Pengpid, & Peltzer, 2011).

The increase in PLWHA and mental illness needing psychiatric care has been noted by researchers (Freeman et al, 2007; Skeen & Saxena, 2012; Nebhinani & Matteo, 2013). The observed increase may have been influenced by clinicians' raised awareness of mental health problems in PLWHA (Adams et al, 2016). There might be an increase in known mental healthcare users contracting HIV because the risk of contracting and transmitting HIV has been established as high among people with severe mental illness due to cognitive impairment (Collins et al, 2006; Blank et al, 2011; Reid et al, 2012). In order to offer optimal patient care, professional nurses working in psychiatric hospitals need to know how to monitor and recognise side effects or drug interactions experienced by PLWHA on ART and psychotropic drugs. There is a paucity of literature conducted in Africa, specifically South Africa, to address or assess HIV knowledge of professional nurses working in psychiatric hospitals. In addition, there is a need to understand professional nurses' perceived HIV risks. A study done by Valdes et al (2011) in Chile revealed that there is a significant relationship between HIV knowledge and the perception of risk. Therefore, this research seeks to understand HIV/AIDS knowledge, attitude and risk perception of professional nurses working in a psychiatric hospital.

1.4 AIM OF THE STUDY

The aim of this study is to describe the HIV/AIDS knowledge, attitude and perceived HIV risks of professional nurses working in a psychiatric hospital in the Western Cape.

1.5 RESEARCH OBJECTIVES

- Determine professional nurses' knowledge of HIV/AIDS.
- Determine the attitude of psychiatric nurses towards PLWHA and mental illness.
- Investigate professional nurses' perceived HIV risks in a psychiatric hospital.

1.6 OPERATIONAL DEFINITIONS OF KEY CONCEPTS

For the purpose of this study, the following terms are used and defined below:

- **Attitude:** is the propensity to negatively or positively respond to ideas, situations, objects, or events (McLeod, 2014). In this research, attitude refers to professional nurses' negative or positive responses towards patients living with HIV and mental illness, as measured by the attitude scale in the adapted 48-item HIV/AIDS KAP questionnaire.
- **Knowledge:** Facts, information and skill acquired through education and skills or theoretical or practical understanding of a subject.

(<https://en.oxforddictionaries.com/definition/knowledge>).

In this study, knowledge refers to the theoretical and practical understanding of HIV/AIDS as measured by the knowledge scale in the adapted 48-item HIV/AIDS KAP questionnaire.

- **Perceived risk:** is the probable chance that a situation which involves being exposed to danger can occur (Turner & Gellman, F2013). In this study, perceived risk refers to professional nurse's views on the probable HIV risks, or chances of contracting HIV in a

hospital as a workplace acquired disease, as indicated by one's view and practices in a clinical setting.

- **PLWHA:** refers to people living with HIV/AIDS: 'Infants, children, adolescents, and adults infected with HIV' (AIDSinfo, 2015). In this study, PLWHA refers to adolescents and adults living with HIV/AIDS.
- **Professional nurse:** The South African Nursing Act, 2005, defines a professional nurse as 'a person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice' (South Africa, 2005). In this study, a professional nurse is a person registered with the South African Nursing Council to offer direct nursing care to patients diagnosed with mental illness, including PLWHA in the selected psychiatric hospital.

1.7 SIGNIFICANCE OF THE STUDY

The findings of this study may assist in identifying the knowledge needs of psychiatric nurses regarding HIV/AIDS. The organization may also utilise the results to update training for nurses regarding HIV/AIDS, and fill the gaps of knowledge identified, if any.

Other psychiatric hospitals can use the results of this study to address similar challenges or use the study to do comparative studies. The findings can be forwarded to training institutions responsible for short course and curriculum development of mental health nurses.

Psychiatric nurses' attitude regarding the care of PLWHA and mental illness can be a significant indicator, as it raises awareness about attitudes towards PLWHA. Furthermore, known perceived risks can allow measures to be put in place to ameliorate the identified risks.

1.8 RESEARCH DESIGN AND METHODOLOGY

The quantitative, descriptive survey design will be used to achieve the aim of the study. An in-depth description of the methodology will be described in chapter 3.

1.9 STUDY OUTLINE

In this chapter an overview of HIV knowledge, attitude and perceived risks of professional nurses in a psychiatric hospital was given. The problem statement, the aim of the study, research objectives, definition of key concepts, and the significance of the study were also discussed.

The subsequent chapters will be structured as follows:

Chapter 2: The focus of the literature reviewed was on the HIV/AIDS knowledge of nurses, the attitude of nurses towards caring for PLWHA and mental illness as the key concepts. In addition, literature on the perception of risk was also reviewed.

Chapter 3: The research approach and methodology used in the study, study setting, population sample size, and inclusion criteria applied, data collection instruments, reliability and validity, data collection and analysis.

Chapter 4: This chapter outlines the research results and discusses the findings.

Chapter 5: This chapter discusses the conclusion and recommendations.

1.10 SUMMARY

An overview of the study, background, problem statement, aims and objectives of the study, and the significance of the study were discussed. The research design and methodology were alluded to briefly and cross referenced to chapter 3.

Chapter two gives an overview of the literature on knowledge, attitudes and perceived risks of nurses towards PLWHA with mental illness.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

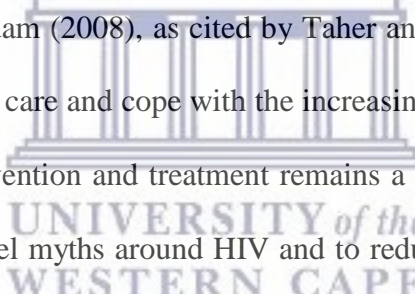
Nurses working in psychiatric hospitals can play a key role in the management of HIV/AIDS in PLWHA and mental illness (Seeman, 2015). Therefore, assessing HIV/AIDS knowledge, attitude, and understanding the perception of HIV risk amongst professional nurses working in psychiatry can apprise on HIV/AIDS training needs, and raise awareness on attitude. This chapter discusses the literature reviewed globally on knowledge, attitudes, and perceived risks of nurses towards PLWHA with mental illness.

A literature review is a written, organised appraisal of material found through reviewing both theoretical and empirical sources that document the current knowledge of the problem (Burns et al, 2013). Tappen (2011) asserts that a thorough review of the literature is a platform to link known knowledge to a base that has been created, and allows one to build on it. The following databases such as PubMed, EBSCOhost, CINAHL and Science Direct were used to search for available literature. The World Health Organization (WHO) and United Nations Programme on HIV/AIDS (UNAIDS) websites were also utilised, mainly for statistical information, and Google scholar was utilised as a search engine. The following keywords and phrases were used to conduct the search: HIV/AIDS knowledge of nurses; HIV/AIDS and attitude; attitude of nurses; HIV risk; risk perception; mental health; mental health and HIV/AIDS; psychiatric nursing and HIV; HIV and mental illness; healthcare worker's HIV knowledge; HIV occupational risk; and practice risk in HIV care.

The literature reviewed will be discussed under the following headings: Knowledge of HIV/AIDS; attitude towards PLWHA; and risk perceptions of nurses.

2.2 HEALTHCARE WORKERS' KNOWLEDGE OF HIV/AIDS

Knowledge of HIV/AIDS amongst healthcare workers in general has been intensively researched since the beginning of the HIV epidemic (Taher & Abdelhai, 2011; Delobelle et al, 2009; Walusimbi & Okonsky, 2004). In the early stages of the epidemic, heightened fear of contagion and over-rigorous infection prevention measures were applied (Mulaudzi, Pengpid & Peltzer, 2011). As new scientific information on the modes of HIV transmission and infection control became available, policies and guidelines were developed to assist with the management of HIV and improve HIV infection risk for patients and staff (Mulaudzi et al, 2011). Therefore, assessing HIV knowledge of nurses offers an opportunity to see if new HIV information has filtered down to nurses. HIV knowledge of nurses in relation to infection remains an important factor as it can influence their willingness to care and quality of care rendered to PLWHA (Yadav et al, 2014).

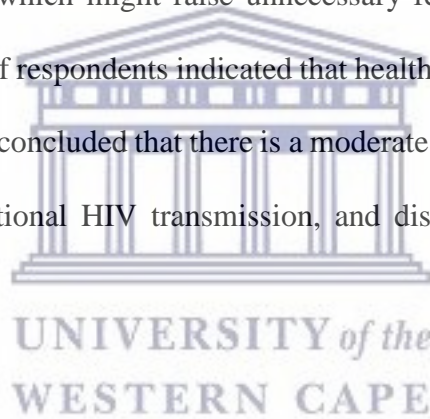
The logo of the University of the Western Cape, featuring a classical building facade with columns and a pediment, with the text 'UNIVERSITY of the WESTERN CAPE' below it.

Mazloomy and Baghianimoghadam (2008), as cited by Taher and Abdelhai (2011), implied that in order to maintain good quality of care and cope with the increasing universal workload, nurses' HIV knowledge on transmission, prevention and treatment remains a vital element. Knowledge on HIV transmission is important to dispel myths around HIV and to reduce the risk of infection, including occupational acquired HIV infection (Hassan, & Wahsheh, 2011; Taher & Abdelhai, 2011).

Hassan & Wahsheh (2011) conducted a survey of 922 Jordanian nurses which explored HIV knowledge and attitudes of Jordanian nurses toward PLWHA, their sources of information and education. The study revealed that 84% of Jordanian nurses in this study refused to give care to patients who tested HIV positive. The findings of the study showed that over 60% of the respondents regarded HIV as highly contagious, and more than half considered casual contact to be a route of HIV transmission. They agreed that PLWHA should use different bathrooms/toilets and different waiting areas. Furthermore, the increased risk of Hepatitis after a needle stick injury was equally unknown to

this study group. This emanated from nurses' lack of HIV knowledge on transmission, agent immunology, and HIV precaution and prevention. The study concluded that anxiety, and an unwillingness to care for PLWHA is brought about by a fear of contagion. Therefore, improving nurses' knowledge will enhance patient care.

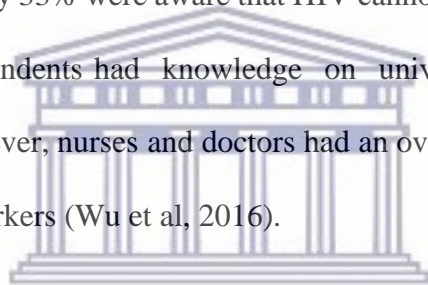
Similar findings of inadequate knowledge were reported in South Africa by Delobelle, Rawlinson, Ntuli, Malatsi, Decock and Depoorter (2009). This study explored HIV knowledge, attitude, and practice of rural nurses in Limpopo, South Africa. The respondents were drawn from public healthcare facilities in a rural municipality, and 71 primary healthcare nurses and 69 hospital-based nursing staff participated in the study. Their findings indicated that more than 72% of respondents agreed that HIV is contagious, which might raise unnecessary fear of contagion (Delobelle et al, 2009). More than 90% (n=126) of respondents indicated that healthcare workers' risk of occupational HIV exposure is high. The study concluded that there is a moderate level of HIV knowledge, but gaps in HIV risk prevention, occupational HIV transmission, and disease presentation were identified (Delobelle et al, 2009).



Mulaudzi et al (2011) study findings alluded to the same sentiments that nurses were unsure about HIV transmission. The study was also conducted in South Africa, with 222 respondents sought to determine nurses' knowledge, attitude, and coping, related to HIV/AIDS in a rural hospital. The findings of Yadav, Yadav and Mishra (2014), on the other hand, reported that most (95.7%) healthcare workers were aware of the HIV routes of transmission. Yadav et al, (2014) conducted a cross sectional descriptive survey in India on HIV knowledge and risk perception, using a sample of 450 healthcare workers. Findings suggested an overall adequate knowledge, particularly around transmission, but a small percentage of respondents (13.2%) incorrectly indicated coughing and sneezing as the route of spreading HIV/AIDS.

Similarly, almost all staff nurses (90%) in a hospital-based cross sectional study done by Shukla & Gupta (2016) in India, were aware of sexual HIV transmission, but not vertical transmission. The study was done in India on HIV knowledge, and risk perception with 74 healthcare workers.

In rural China, Wu, Xue, Shah, Zhao, Hwang and Zhuang (2016) did a cross-sectional survey which aimed at assessing knowledge, attitude, and practices regarding occupational HIV exposure. 1783 healthcare workers participated in the study. This included nurses, doctors, technicians and administrative staff. Findings of the study indicated inadequate HIV knowledge in general, with deficiencies in transmission, occupational exposure and prevention. Respondents in this study knew most transmission routes, but only 33% were aware that HIV cannot be transmitted through mosquito bites. Less than 40% of respondents had knowledge on universal precautions to occupational exposure (Wu et al, 2016). However, nurses and doctors had an overall higher level of knowledge as compared to other healthcare workers (Wu et al, 2016).



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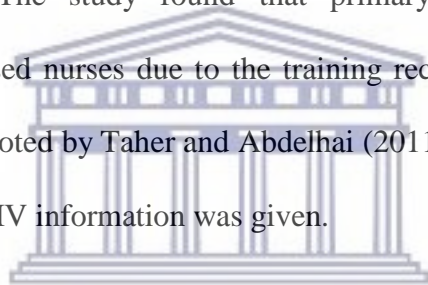
Knowledge on HIV transmission and associated risks has been shown to improve one's willingness to care for PLWHA among nurses and healthcare workers in general (Taher & Abdelhai, 2011). Fear of contagion has been highlighted as a major contributor to anxiety and fear, especially where the routes of HIV transmission risks are unknown (Delobelle et al, 2009; Hassan & Wahsheh, 2011). Thus, researchers continue to highlight that it is important to recognise areas where misconceptions still exist, so that policy makers and educators can be informed, and corrective measures put in place.

2.2.1 Increasing HIV knowledge through training

A literature review on how mental health services can best prevent and treat HIV infection among women with serious mental illness was done by Seeman (2015). Even though the study's focus

population was women, the results were found to be applicable to this study as it alludes to the significant role the mental healthcare workers, such as nurses, can play in HIV management in psychiatry. 82 papers out of the 500 retrieved were used. The results of the study showed that mental healthcare workers can participate actively in HIV management through many different activities which include: obtaining information about the patient risks; patient education on transmission; management of HIV infection; drug management of HIV infection; and counselling and testing of consenting patients to name a few. This research outlines the importance of HIV training for healthcare workers in psychiatry to enable them to manage PLWHA in psychiatric hospitals.

Delobelle et al (2009) reflected that knowledge differences amongst the study's respondents were influenced by HIV training. The study found that primary healthcare nurses were more knowledgeable than hospital-based nurses due to the training received. The impact of training on improving knowledge was also noted by Taher and Abdelhai (2011), where an improvement on HIV misconception was noted after HIV information was given.



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The importance of training was emphasised in most studies as the key driver to increase nurses' HIV knowledge. In Hassan & Wahsheh's (2011) study on Jordanian nurses, more than half (53%) of the respondents' sources of HIV knowledge was from the internet and family and friends (38%). None of the respondents obtained knowledge from professional journals, with only 6% from formal in-service conferences. Respondents indicated an interest in attending HIV related in-service training and discussion groups.

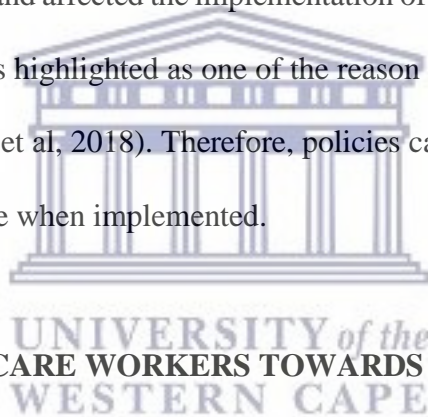
Similar findings were reported by Delobelle et al (2009) in a study in South Africa on rural nurses. In this study, respondents were asked to indicate their preferred HIV related services. A significant

number indicated a high interest in HIV related in-service training, and having committee meetings, which was even higher than HIV testing in the workplace.

The majority of Wu et al (2016)' study participants indicated an interest in HIV training. The respondents indicated that the structured HIV education can be used to clear misconceptions and improve HIV knowledge (Taher & Abdelhai, 2011).

HIV knowledge is important as lack thereof can affect implementation of policies and guidelines. This was highlighted by Phetlhu, Bimerew, Marie-Modeste, Naidoo & Igumbor (2018), in their study that aimed to understand knowledge of HIV and TB policies that rural nurses in the Western Cape have. The research concluded that there was a lack of HIV/ TB integration policy and guidelines which affected management of patients and affected the implementation of such policies (Phetlhu et al, 2018).

Lack of HIV and TB training was highlighted as one of the reason amongst others that contributed to their lack of knowledge (Phetlhu et al, 2018). Therefore, policies can be designed but they need to be supported by adequate knowledge when implemented.



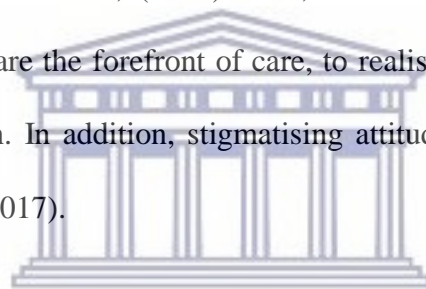
2.3 ATTITUDE OF HEALTHCARE WORKERS TOWARDS PLWHA

Attitude is gained through contact and experience with the world around us (Okpala et al, 2017). It can be altered through new information, education, or experience. Many studies have investigated the attitudes of nurses or healthcare workers in general towards caring for PLWHA. Findings revealed that both negative and positive attitudes of nurses impact the quality of care rendered to PLWHA (Wu et al, 2016; Delobelle et al, 2009).

An earlier attitude study, with 557 respondents, on knowledge attitude of nurses caring for PLWHA done in Uganda (Walusimbi and Okonsky, 2004), found a correlation between knowledge and attitude, when they observed a positive attitude of nurses in their study. Their attitude towards HIV

was influenced mainly by the way the disease was perceived, as a sexually transmitted infection, which then seemingly reflected on one's morality (Okpala et al 2017). This perception resulted in stigmatisation of the disease (HIV) and a stigmatising attitude.

Stigma is a social construct that outcasts a person by virtue of social or physical traits, resulting in discrimination and avoidance (Hassan & Wahsheh, 2011). HIV/AIDS stigma has been quoted and defined as “prejudice, discounting, discrediting and discrimination directed at people perceived to have HIV’ by Vorasane, Jimba, Kikuchi, Yasuoka, Nanishi, Durham, and Sychareun, (2017). The same definition can be extended to include mental illness, considering that mental illness and HIV are the most stigmatised conditions, as highlighted by the studies of Vorsane et al (2017) and Henderson, Evans-Lacked, & Thornicroft, (2013). It is, therefore, important for those caring for patients, particularly nurses who are the forefront of care, to realise the double stigma that PLWHA and mental illness are faced with. In addition, stigmatising attitudes prevent care and treatment of HIV and testing (Vorasane et al, 2017).



The stigmatisation of HIV and mental illness was discussed by Seeman (2015) review of other studies. The author noted that fear and discrimination were common stigmatising responses made by the public towards persons diagnosed with mental illness, in particular schizophrenia and HIV, regardless of the availability of treatment to control the symptoms. The stigmatising attitude is then internalised by mental healthcare users, resulting in withdrawal from society and a loss of self-confidence (Seeman, 2015). Withdrawal from social interactions may predispose mental healthcare users to HIV risky behaviours, as learning opportunities at given healthcare services on HIV risk reduction, HIV modes of transmission, condom use, and other HIV related issues might be missed. Therefore, non-stigmatising attitudes of mental healthcare workers, particularly nurses, is an important tool, as it offers an opportunity to earn trust and educate patients on HIV.

Negative attitudes of nurses in general has a profound effect on the service provided to patients, as highlighted by Mall et al (2012) study on the perspectives of HIV/AIDS service providers in South Africa, providing mental healthcare for PLWHA. The researchers conducted in depth interviews with 22 HIV/AIDS healthcare providers. The findings alluded to the referral of patients for HIV counselling to psychiatric nurses if they were diagnosed with a mental illness. Therefore, psychiatric nurses should be well versed with HIV knowledge to better serve mental healthcare users holistically. This stigmatising attitude emanating from fear or misconception of mental illness may result in omission of HIV education and counselling for mentally ill patients.

In an effort to decrease the stigmatising attitude of both the public and health professionals in developed countries, large scale social campaigns were held. These included campaign programmes such as ‘Time to Change’ campaigns’ in England; ‘Open Minds’ in Canada, and ‘Like Minds like Mine’ in New Zealand. The results reflected a reduction in unfair treatment by public and healthcare professionals towards stigmatisation of mental health individuals as observed after the Time to Change campaign (Henderson et al, 2013).

A cross-sectional study by Vorasane et al (2017), investigated stigmatising attitudes of nurses and doctors towards PLWHA in Vientiane, Lao People’s Democratic Republic (PDR). The study had 558 respondents, mainly doctors (49.7%) and nurses (50.3%), from 12 hospitals in Vientiane. Almost 50% of doctors and nurses in this study had high levels of stigmatising attitudes. These attitudes were viewed as a drawback to Lao’s PDR efforts in HIV management, because it could contribute to missed opportunities for HIV training, education, and prevention.

A survey of mental health workers' attitudes, knowledge and practice of HIV prevention for people living with serious mental illness by Hughes & Gray (2008) in England was the only study found that looked at mental healthcare workers. It noted that mental healthcare workers had a positive attitude to sexual health. Conversely, they found that discussions around sexual health issues were not routinely held, and mental health workers were not aware of the increased HIV and STI risk amongst patients with serious mental illness (Hughes & Gray, 2008). Therefore, understanding professional nurses' attitudes towards PLWHA will be valuable, as health promotion of HIV and sexual health is of significance considering the high prevalence HIV in South Africa.

Negative attitudes of nurses can reflect the imbedded stigmatising attitude which affects the reception of care by patients. Similarly, in psychiatry, stigmatisation attitudes create barriers to help seeking behaviour, resulting in treatment avoidance. This creates a treatment gap, as those needing help will not seek help due to patients' predetermined stigma (Henderson et al, 2013).

2.3 PERCEPTION OF HIV RISK

Risk perception is defined as the subjective assessment of the probable chances that a specific accident will occur (Sjoberg & Bjorg, 2004; Yadav, 2014). The individual's level of concern that it will happen to them reveals how the worker perceives a particular risk, such as HIV, in this regard. Variables such as culture, values and beliefs can also influence risk perception (Sjoberg & Bjorg, 2004). Thus, it is important to note that health workers' perception of their own risk influences their willingness to care for PLWHA (Yadav et al, 2014).

In Spain, a total of 313 healthcare workers evaluated relevant hazards in their workplaces related to biological, ergonomic and organisational factors. A questionnaire elicited workers' ratings of three occupational hazards on nine risk attributes along with perceived risk. Factor and regression analyses

reveal regularities in how different risks are perceived, while, at the same time, the procedure helps to summarise specificities in the perception of each hazard. The results showed that workers' 'level of dread' was high on risks they perceived to cause more harm (Sjoberg & Bjorg, 2004).

Exposure to HIV in healthcare settings is a major challenge, especially when healthcare workers deal with a large cohort of patients living with HIV (Shukla & Gupta, 2016; Mathewos, Birhan, Kinfe, Boru, Tiruneh, Addis et al, 2013). Nurses and healthcare workers in general are deemed to be at a greater risk of infection from blood-borne pathogens, particularly in developing countries where the prevalence of blood-borne pathogens such as HIV, HEP B or C is high (Mathewos et al, 2013)

In Ethiopia, a study conducted by Mathewos et al (2013) on 195 nurses to assess their knowledge, attitudes and practice regarding post-exposure prophylaxis (PEP) found that 66 of the 195 respondents (33.8%) had been exposed to blood, bodily fluids needle/sharps injury. Forty-nine (49) of the 66 exposed respondents (74.2%) took PEP, whilst the remaining 25.7% did not. The respondents who took PEP were exposed to known HIV-positive blood whilst the latter were exposed to blood of unknown status. The low perception of risk is highlighted in these results as those who did not take PEP seem to have perceived their chance of HIV seroconversion to be low. 20.4% of those who took PEP failed to complete the course due to adverse reaction and fear of inefficacy of PEP (Mathewos et al, 2013). 91% of nurses in a tertiary hospital in India perceived their HIV risk to be high (Mathewos et al, 2013) and fear of contagion was equally high in study done by Hassan and Wahsheh (2011). Nurses in this study further stated that they would discourage others from joining the nursing profession due to this high perception of HIV risk. Although the nurses had gone through an educational system that highlighted the presence of such blood-borne pathogens and universal precautions, they still perceived the risk of HIV to be high. Similarly, Delobelle (2011) study, discussed earlier, found that 90% of respondents reported occupational HIV risk to be high.

A high needle-prick injury rate was noted by Wu et al (2016) in a study conducted in China with 1 783 healthcare workers. The study was a cross-sectional census survey focusing on rural healthcare workers' knowledge, attitudes and practices regarding occupational HIV exposure. The findings indicated that 85% of healthcare workers reported being injured by sharps. 92% of nurses in this study reported that they took measures after sharps injuries.

Another study done in China by He, Lu, Huang, Zhou, Huang, Bi and Li (2016) aimed to assess the effectiveness of integrated interventions on nurses' knowledge improvement about reducing the risk of occupationally acquired HIV infection. It was a multi-faced study which included data collection using a structured questionnaire and training interventions, with 300 participants responding to the questionnaire and 234 completing the training programme. The results indicated 94.3% (n=283) reported a sharps injury, whilst, 95.3% participants failed to follow universal precautions but considered their risk to be high or very high, only 24% donned gloves regularly. Whilst protocols regarding universal precautions existed in China, exposure risks were accepted and deemed inherent to the occupation. An improvement in knowledge and patient care was observed. The researchers concluded that integrated training interventions will improve adherence to universal precautions and change attitudes towards HIV/AIDS (He et al, 2016).

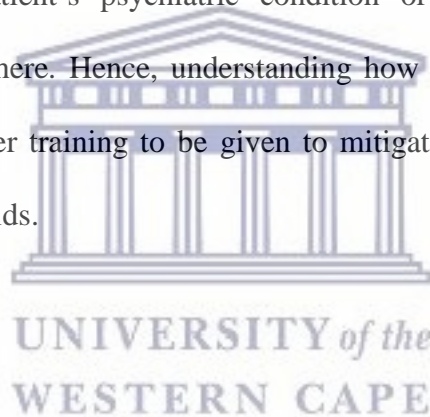
In Turkey, 58% of nurses also reported needle-prick injuries (Akyol, & Kargin, (2016), indicating that understanding risk perception is important, as it highlights underlying HIV knowledge as the basis of the decision to manage HIV risk. Aggression can be a factor that can exposes psychiatric nurses to exposure risks. Registered nurses in this study did not fully understand HIV/AIDS and only 28% were aware of the importance of taking post-exposure prophylaxis early.

PEP is an important component of managing accidental exposure to HIV in healthcare. The estimates that about 2.5% of global HIV incidences are due to occupational exposure (Singh, Din Ahmad, Muneer, Sabah & Baig, 2015). The nature of work predisposes healthcare workers to blood and bodily fluids exposure as they work closely with PLWHA. Thus, healthcare workers' perception of HIV risk after exposure is dependent on knowledge of HIV transmission and importance of managing exposure to HIV timeously. In Pakistan, a study done by Singh et al (2015) investigated the PEP knowledge, attitudes and practice of 609 healthcare workers from different district



government hospitals. The results showed a lack of knowledge regarding PEP. More than a third of the respondents (34.8%) did not know about PEP. A significant number of healthcare workers (31%) did not use protective personal material when handling bodily fluids. Handwashing after coming into contact with patients was not adhered to by 34.2% of the respondents. Half of the respondents indicated that they would start PEP after exposure, whilst the other half did not know about PEP.

In psychiatric settings, the risk of HIV exposure can be unpredictable due to the aggressive behaviour of some patients. Such behaviours put nurses at risk of injury and exposure to blood-to-blood contact, especially during aggressive episodes or administration of intramuscular injections, where nurses' risk of injury can be high. As highlighted by Bekelepi et al (2015), patient aggression in psychiatry may be influenced by the patient's psychiatric condition or environmental factors such as overcrowding and ward atmosphere. Hence, understanding how professional nurses in psychiatry perceive HIV risk enables proper training to be given to mitigate the risk (Portell et al, 2014) of exposure to blood and bodily fluids.



2.4 SUMMARY

In this chapter, a review of literature on nurses' HIV knowledge, attitude, risk perception and training was discussed. Chapter 3 will discuss the research method and design used in this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research methodology used in this study to achieve its intended objectives. The study is based on a survey questionnaire designed to assess the HIV knowledge, attitudes and perceived risk of professional nurses working in a selected psychiatric hospital. This chapter describes the research methodology, involving research design, setting, population, sampling, data collection instrument, the reliability and validity of the instrument, and ethical considerations.

3.2 RESEARCH APPROACH

A quantitative research approach is a formal, objective and systematic process which utilises numerical data to better understand the complex world (Burns et al, 2013). It enables researchers to study and understand empirical phenomena by collecting and analysing data using mathematical models and statistics (Muijs, 2010). It is used to describe variables, examine relationships and determine cause-and-effect interactions between variables. As noted by Polit and Beck (2012), quantitative descriptive research is appropriate for in-depth understanding of real-life empirical studies. Therefore, this research approach is deemed more appropriate in this study as it allows us to develop a better assessment and understanding of professional nurses' HIV knowledge, attitudes and perceived risks in a psychiatric hospital.

3.3 RESEARCH DESIGN

A research design is the overall plan for answering research questions (Polit & Beck, 2014). In this study, a descriptive survey research design, based on a structured questionnaire, was conducted to assess the identified HIV/AIDS knowledge, attitudes and perceived risks of nurses caring for PLWHA who have a co-occurring mental illness. Descriptive research of this nature is essential as it helps to understand, discover and describe real-life situations (Burns et al, 2013).

3.4 RESEARCH SETTING

The research study was conducted in a selected psychiatric hospital in the Western Cape province of South Africa. South Africa is divided into nine administrative provinces – all governed at provincial level. Western Cape is the fourth-largest province that occupies about 10% of South Africa’s total area and has an estimated population of 6.2 million people (STASSA, 2015). Geographically, the province is located at the southern end of Africa, with the Indian and Atlantic oceans on the east and west coasts respectively (see Figure 3.1). Demographic distribution indicates that the Western Cape’s population is comprised of more than 50% coloured people (mixed race), 30% blacks and the rest whites and Indians (<http://www.statssa.gov.za>).

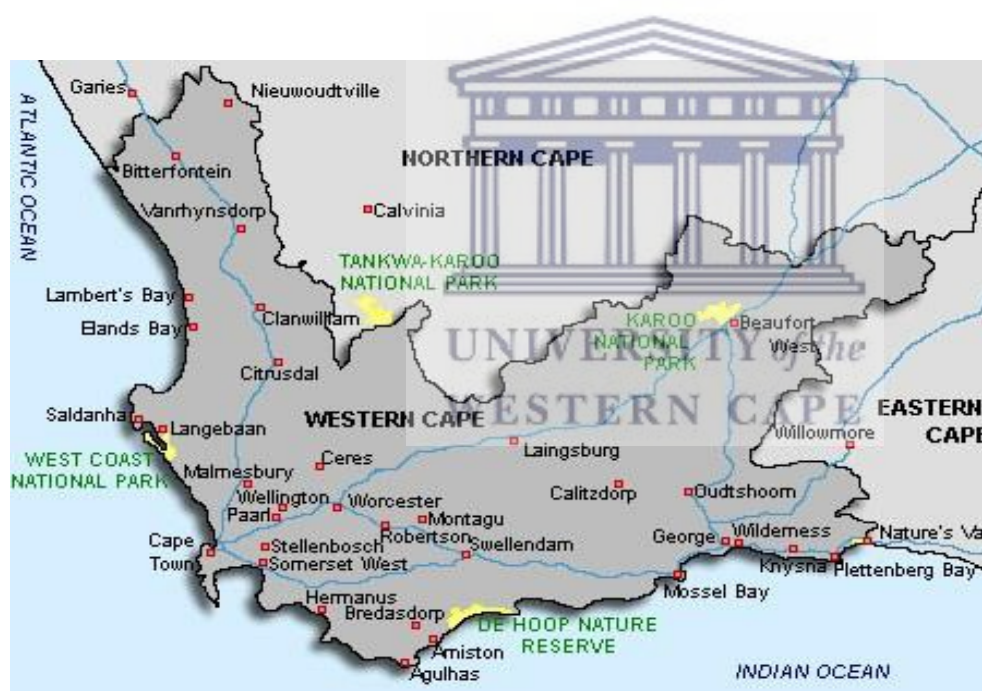


Figure 3.1: Map of Western Cape province, South Africa

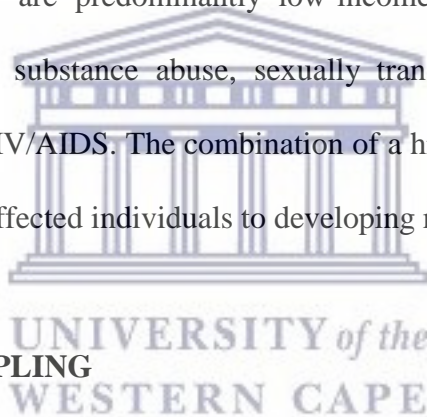
Source: http://www.aboutsouthafrica.com/western_cape_map.jpg

The Western Cape Province has four large psychiatric hospitals that provide different services for the various mental healthcare needs of the province. In this study, the selected psychiatric hospital is the

largest psychiatric hospital in Western Cape. It is located in the Mitchell's Plain health district of the Cape Town metropolitan region. It is a 742-bed hospital with an additional 20-bed step-up for rehabilitation purposes.

The selected psychiatric hospital offers four specialised services, namely: general adult psychiatry (GAP), forensic psychiatry, child and adolescent psychiatry (CAP) and intellectual disability service (IDS). The hospital takes a multi-disciplinary approach to the provision of patient care, with a staff complement of medical doctors, nurses, occupational therapist, physiotherapists, psychologists and social workers. Nurses make up the highest proportion of the staff complement.

The hospital's catchment areas are predominantly low-income suburbs characterised by poor households, high prevalence of substance abuse, sexually transmitted diseases and the highest numbers of people living with HIV/AIDS. The combination of a high prevalence of substance abuse and HIV/AIDS predisposes the affected individuals to developing mental illness (Breuer et al; 2011).



3.5 POPULATION AND SAMPLING

Population defines all individuals or objects that satisfy the criteria for the study (Burns et al, 2013).

A sample, on the other hand, is 'a subset of the population' that is randomly selected and must be adequately representative. In this study, the sample consists of professional nurses working in a psychiatric hospital and providing direct care to people living with HIV and AIDS. The sample comprised a total of 146 professional nurses and 20 operational managers all working at the selected psychiatric hospital.

3.6 DATA COLLECTION

The data collection instrument and data collection process are discussed below.

3.6.1 Data collection instrument

A questionnaire (HIV/AIDS KAP), according to Delobelle et al (2009) was adapted from existing nursing tools originally developed by Eckstein et al (1987) and Froman & Owen (1997). The adapted questionnaire by Delobelle et al (2009) had a demographic section which included training and care questions, a section with 28 items on HIV/AIDS knowledge, followed by an attitude scale with 10 items and a practice scale with 10 items. The tool was intended for all categories of nurses. The questionnaire was adapted to address specific issues pertinent to the study and differed from the HIV/AIDS KAP modified by Delobelle et al (2009). For instance, while Delobelle's HIV/AIDS KAP questionnaire was intended to address primary/community health and hospital nurses in a rural setting, this study sought to address psychiatric hospital nurses in an urban setting. Permission to use and adapt the HIV/AIDS KAP questionnaire was granted by the original authors (see annexure E).

The discussion below indicates some of the changes in adapting the questionnaire for this study. This study primarily focused on healthcare services provided by professional nurses and excluded other healthcare workers. The service areas section, dealing with where nurses work, was changed and aligned to match the main service areas of the selected hospital. The second section (B) contains adapted questions seeking to assess the HIV/AIDS knowledge of professional nurses. This section consists of 28 questions aimed at testing professional nurses' depth of knowledge and skills on HIV/AIDS. The questions were framed as either 'True', 'False' or 'Don't Know'. The responses to the questions were marked or graded, according to an answer sheet, as correct or incorrect and a scoreboard was created to reflect professional nurses' depth of knowledge on HIV/AIDS (see Table 3.1). The third section (C) sought to assess the 'attitude' of professional nurses and was maintained with no changes effected. In this section, the respondents were asked to answer 10 questions intended to measure 'attitude' towards patients living with HIV/AIDS. The last section (D) dealt with the

‘practice perceptions’ and was changed to include practice risks such as needle-prick injuries and adherence to PEP. The ‘practice scale’ consisted of 9 questions relating to universal precautions and adherence to PEP. One question was removed that pertained to drawing of blood as this task is not performed by all professional nurses.

The key outcome of the study is the assessment of the knowledge of professional nurses based on their performance on a 28-question test designed to capture basic knowledge and skills on HIV/AIDS. The study follows a similar approach to that conducted by Mulaudzi et al (2011), which was aimed at determining nurses’ knowledge, attitude and coping related to HIV. In Mulaudzi et al (2011) study, the scores of knowledge, attitude and coping were categorised into different levels: <60%=low; 60-80%=medium, >80%=high. Similar categories were applied in this study. Table 3.1 indicates the scoreboard assessment used, with a score equal and greater than 80 indicating ‘high’, 60–79 indicating ‘moderate’, and a score less than 60 implying ‘low’. This is necessary as it provides greater insight essential for assessing knowledge depth and gaps in the knowledge of professional nurses working in a psychiatric hospital.

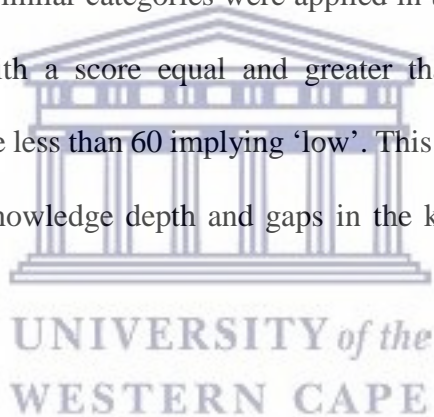


Table 3.1: HIV knowledge, attitude and risk perception scoreboard assessment of professional nurses

	Score categories and rating		
Score	>80	60–79	<60
Rating	High	Moderate	Low

3.6.1.1 Validity and reliability

Validity measures the degree of accuracy of a statistical survey instrument (Brink et al, 2012).

Content validity asserts how well the survey instrument represents all variable components to be

measured (Brink et al, 2012). To ensure content validity, the survey instrument was examined by the researcher's supervisor as well as an expert in mental health and HIV. This approach ensured that the instrument is consistent with what it is intended to measure and that all elements relevant to the study are included (Table 3.2).

Table 3.2: Content validity – HIV/AIDS knowledge, attitude and perception questionnaire

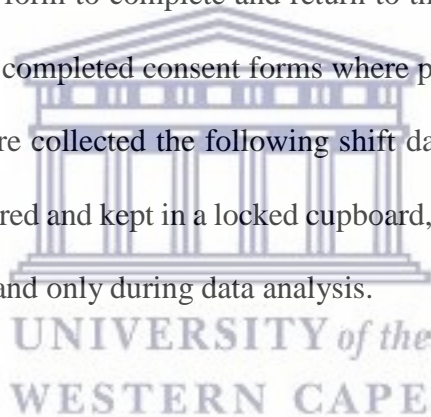
Objectives	Related questions
1. Determine professional nurses' HIV/ AIDS knowledge	Knowledge scale: Section B – Question 1–28
2. Determine the attitudes of professional nurses towards PLWHA in a psychiatric hospital	Attitude scale: Section C – Question 1–10
3. Investigate professional nurses' perceived HIV risks in a psychiatric hospital	Practice scale: Section D – Question 1–9

Reliability is the consistency with which the survey instrument measures what it is supposed to measure over a period of time (Plooy 2007; Polit & Beck, 2012). Cronbach's alpha is the statistical measure generally used to test the reliability of a survey instrument. The value of Cronbach's alpha for an established instrument should be at least 0.80 (Tappen, 2011). In the study by Delobelle, the Cronbach's alpha score for assessing scale reliability was calculated and yielded a value of 0.77 for knowledge and 0.63 for attitude. These results are quite satisfactory and these areas were not changed for this study.

3.6.2 Data collection method

Data were collected after approval was obtained from the Biomedical Research Ethics Committee of the University of the Western Cape (see Annexure A). In addition, permission was granted by the Western Cape Department of Health (see Annexure B) to conduct the study at the selected hospital. The researcher contacted the nursing director to inform her of the study and request permission to address the staff to inform them about the study. The nursing director allocated 15 minutes during the monthly nurses' meeting at the selected hospital, during which the researcher met professional nurses

to share information about the study. The purpose of meeting with the professional nurses was to: (a) explain the background of the study, including its objectives; (b) explain ethical principles to the prospective respondents, outlining the respondents' rights, confidentiality and anonymity; (c) offer an invitation to prospective respondents of the study; and (d) explain how the study was to be rolled out. The potential respondents could also ask questions and seek clarity on certain points at the meeting. After the information session, all the professional nurses agreed to participate in the study. The researcher then visited all potential respondents, going from ward to ward on different days to cover both shifts working in each ward. In the wards, professional nurses were invited to participate. The invitation to participate was given once more, along with a brief description of the study aims and objectives, including the rights to participate and withdraw from the study. The willing respondents were given a consent form to complete and return to the researcher, then a questionnaire and an envelope were issued. The completed consent forms were placed in a consent form envelope. The completed questionnaires were collected the following shift day/week and placed in a box. The completed questionnaires were stored and kept in a locked cupboard, only accessible to the supervisor, the researcher and the statistician and only during data analysis.



3.7 DATA ANALYSIS

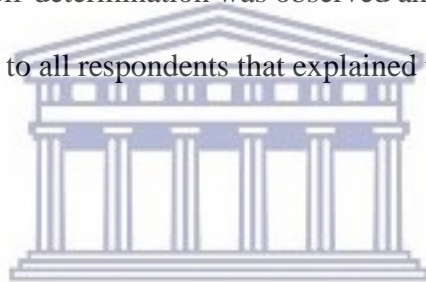
Data analysis was done with the assistance of a statistician using SPSS version 24. Data analysis included three basic approaches. The first approach used simple descriptive statistics to analyse the demographic characteristics of the respondents (age, years of service experience, educational qualifications); in addition, graphical representations (pie charts, bar graphs and histograms) were used for further analysis. The second approach used relative frequency to analyse responses to the test questions that were intended to measure HIV/AIDS knowledge, attitudes and risk perceptions by professional nurses. The third approach used cross-tabulations to gain insight into frequency of patient care and identified service area and service area and HIV management training.

3.8 ETHICS

Ethics clearance to conduct the study was granted by the University of the Western Cape (Appendix A). Furthermore, permission to interview the health staff at the selected psychiatric hospital was granted by the Western Cape Department of Health (Appendix C). The following ethical principles were adhered to during the study:

3.8.1 Principle of rights

All respondents had the right to decide whether to participate or not without prejudice or penalty (Burns et al, 2013). Respondents could withdraw from the study at any time without fear of victimisation. This principle of self-determination was observed and explained to all respondents. An information sheet was distributed to all respondents that explained the purpose, ethical considerations and guidelines for participation.



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3.8.2 Principle of beneficence

The researcher ensured that respondents were not subjected to unnecessary risk or discomfort during the study. If respondents experienced any psychological, emotional, spiritual or social distress, they could withdraw at any time. Prior arrangements were made to ensure that any affected participant would be referred to the occupational health nurse for counselling and referral to the ICAS, which provides comprehensive preventative care and counselling services.

3.8.3 Principle of justice

The selected respondents were treated equally and fairly throughout the study. All professional nurses at the selected hospital were given an opportunity to participate.

3.8.4 Confidentiality and anonymity

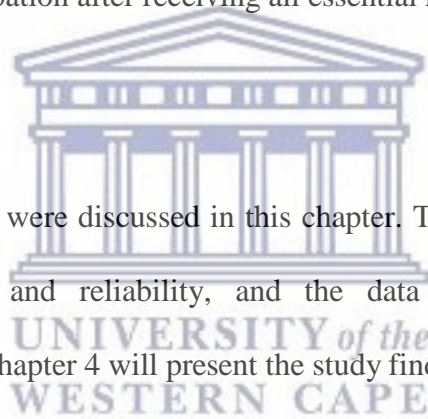
Burns et al (2013) state that anonymity is when a participant cannot be tracked back to their data. This was assured as no names were provided on the instruments. All completed instruments were stored in a locked cupboard. Access to ensure confidentiality throughout the research study was only granted to the statistician, the supervisor and the researcher. This access was password electronic spread sheets used for analysis. The completed questionnaires will remain in the safe for at least five years after which they will be destroyed by means of shredding.

3.8.5 Informed consent

In this research, an informed consent form (Appendix E) was signed by each participant as a formal way to indicate voluntary participation after receiving all essential information related to the study.

3.9 SUMMARY

The research method and design were discussed in this chapter. The study setting, population, data collection, instrument validity and reliability, and the data collection process and ethical considerations were described. Chapter 4 will present the study findings.

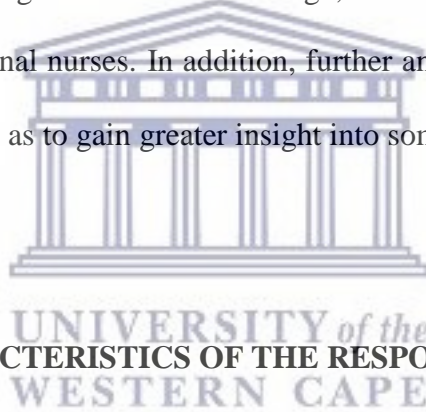


CHAPTER 4: RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter presents the main findings of the study, whose central objectives were to assess the HIV knowledge of professional nurses working in a psychiatric hospital and to understand their attitudes towards PLWHA and their risk perceptions in relation to their routine practices and profession.

The results are based on a sample of 86 professional nurses who participated in a self-administered survey. This chapter is structured as follows: the first section presents the demographic characteristics of the respondents, including graphical representations (e.g. pie charts, bar graphs and histograms); the second section presents frequency analysis based on answers provided by professional nurses to a set of questions intended to gauge their HIV knowledge; the third section discusses the attitudes and risk perceptions of professional nurses. In addition, further analysis involving cross-tabulations and correlation was conducted so as to gain greater insight into some variables of interest.



SECTION A

4.2 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Descriptive statistics in the form of frequency tables were used to describe the sample (Table 4.1).

The ages of sampled respondents ranged from 20 to 60+ years, with the results indicating that the majority (37.2%, n=32) of the respondents were in the age group of 40-49 years. This was followed by the 30-39 age group at 19.8% (n=17) and the youngest age group (<30) at 18.6% (n=16). The oldest age group (>60 years) had the fewest respondents at 4.7%. The overall average age of respondents was 45 years, with a standard deviation (SD) of 1.11.

Years of experience is another demographic variable, reflecting the number of years a participant has worked in the psychiatric hospital. On average, years of experience for the whole sample was 12.2

with an SD of 8.84. The results indicate that the highest number of respondents (26.7%, n=23) in the study had experience of <5 years; followed by 6-10 years of experience at 24.4% (n=21). Only 14% of respondents (n=12) had experience of 20 or more years.

Table 4.1: Demographic characteristics of sample

	Frequency (head count = n)	Proportion (%)
Gender:		
- Male	35	40.7
- Female	49	57.3
Age (years):		
- < 30	16	18.6
- 30-39	17	19.8
- 40-49	32	37.2
- 50-59	14	16.3
- >60	4	4.7
Average age (years)	45 (SD=1.11)	
Years of professional experience:		
- <5	23	26.7
- 6-10	21	24.4
- 11-15	16	18.6
- 16-20	13	15.1
- >20	12	14.0
Average (years)	12.22 (SD=8.84)	

Another important demographic variable was the educational attainment of the respondents. As shown in Figure 4.1, the educational qualifications ranged from diploma to master's in nursing. Most (38.4%, n=33) of the respondents had a diploma in nursing, followed by less than a third (30.2%, n=26) with an advanced diploma in psychiatric nursing. Less than a quarter (22.1%, n=19) of the respondents had a bachelor's degree in nursing, whilst only 9.3% (n=8) of respondents had a master's degree in nursing.

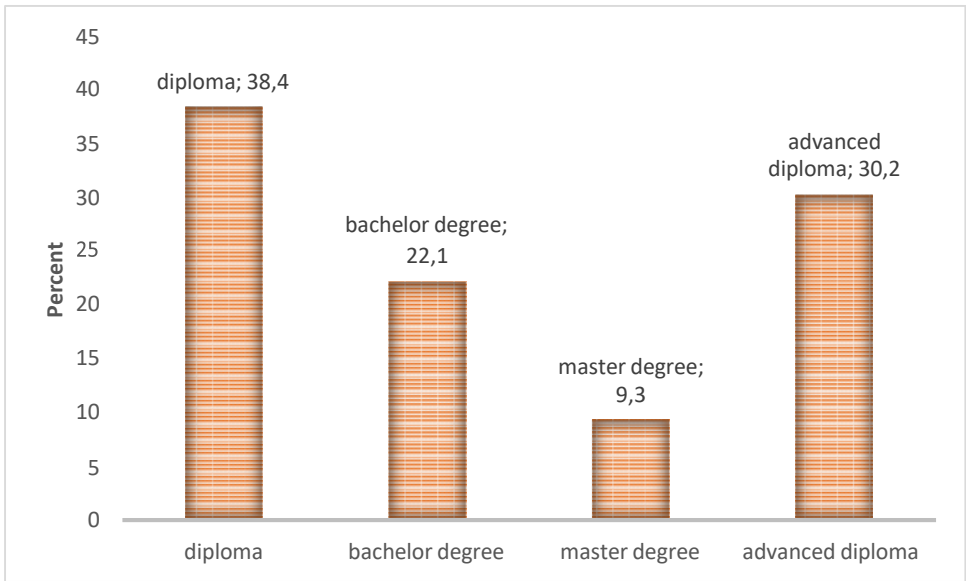


Figure 4.1: Educational qualifications of professional nurses

As discussed earlier, the psychiatric hospital has four specialised service areas, namely: general adult psychiatry (GAP), forensic psychiatry, child and adolescent psychiatry (CAP) and intellectual disability service (IDS). Although nurses make up the largest staff complement, other health staff members play crucial roles in caring for psychiatric patients. These include medical doctors, occupational therapists, physiotherapists, psychologists and social workers. Figure 4.2 below shows the distribution of the respondents across these four specialised service areas.

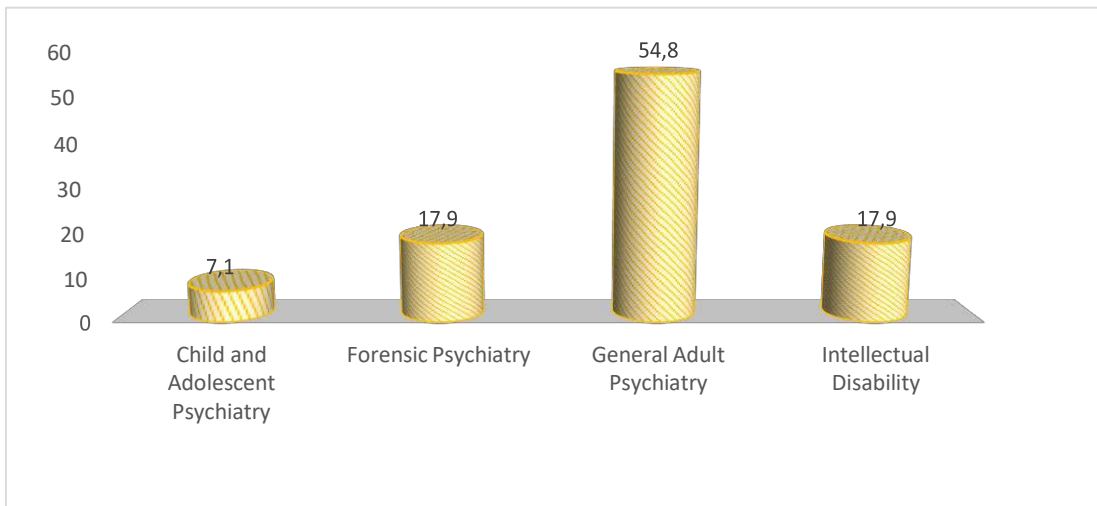


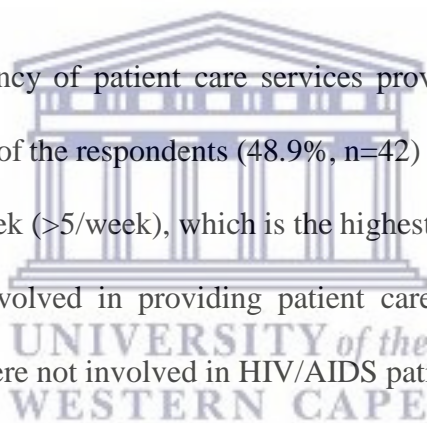
Figure 4.2: Service area of work

The results indicate that more than half of the respondents (57.0%, n=49) are working in general adult psychiatry, followed by 17.4% (n=15) in intellectual disability and 16.3% (n=14) in forensic psychiatry. The lowest proportion (9.3%, n=8) was observed in the child and adolescent psychiatry service area.

4.3 HIV/AIDS TRAINING, FREQUENCY ANALYSIS AND CROSS-TABULATION RESULTS

As discussed earlier, the results below present simple frequency and cross-tabulation between variables of interest. The discussion seeks to highlight the distribution of professional nurses and how they are managing important patient care tasks.

Figure 4.2 illustrates the frequency of patient care services provided to PLWHA in the selected psychiatric hospital. Almost half of the respondents (48.9%, n=42) indicated that they provide patient care more than five times per week (>5/week), which is the highest frequency. The results imply that most of the respondents are involved in providing patient care to PLWHA. Only 14% of the respondents reported that they were not involved in HIV/AIDS patient care duties.



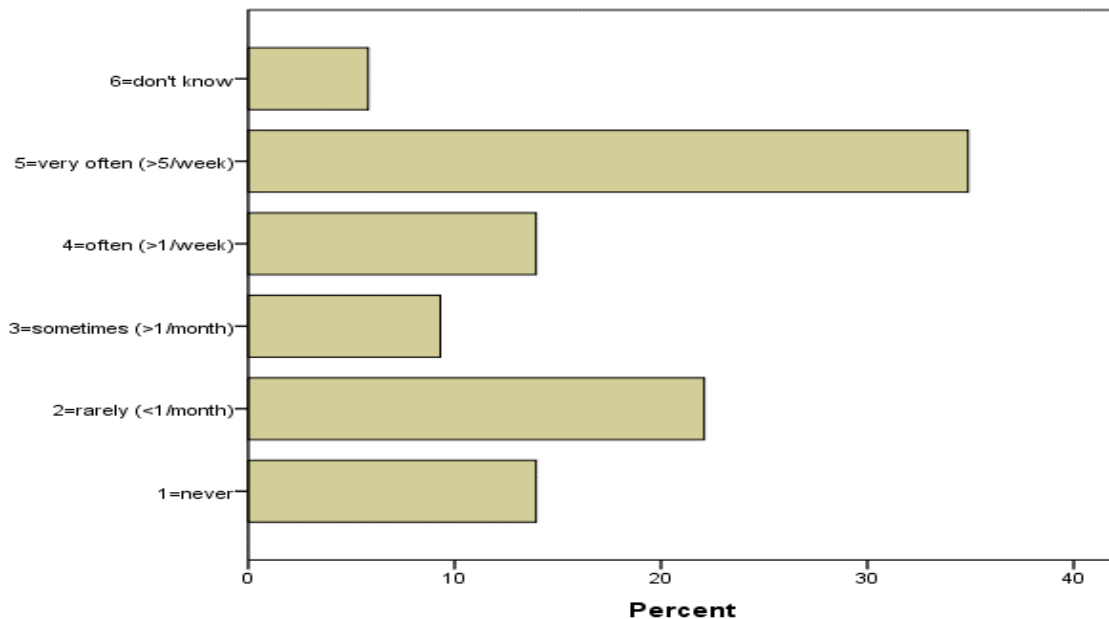
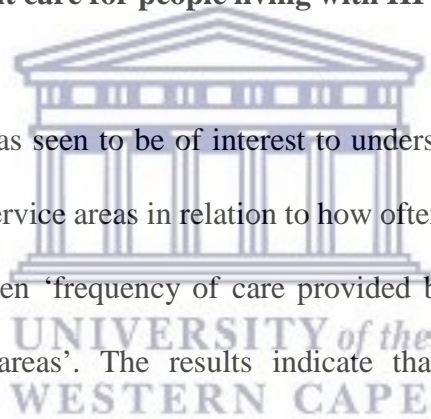


Figure 4.3: Frequency of patient care for people living with HIV/AIDS by professional nurses



In light of the above result, it was seen to be of interest to understand how the professional nurses were distributed across the key service areas in relation to how often they cared. The results in Table 4.3 show cross-tabulation between ‘frequency of care provided by nurses to HIV/AIDS patients’ versus the ‘identified service areas’. The results indicate that most of the nurses who are predominantly involved in providing HIV-related care work in ‘general adult psychiatry’, as indicated by the highest percentage (57%). Other important service areas include forensic psychiatry (17.4%) and intellectual disability (16.3%).

Table 4.2 is a cross-tabulation between frequency of patient care versus identified service area. The results show that the GAP area cares most often for PLWHA, followed by the forensic area. On the other hand, the child and adolescent and intellectually disabled services do not often care for PLWHA.

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Table 4.2: Cross-tabulation between frequency of patientcare versus identified service area

Item		Which service area are you currently working in?				Total
		1=General adult psychiatry	2=Child and adolescent psychiatry	3=Forensic psychiatry	4=Intellectually disabled services	
How often do you care for HIV/AIDS patients?	% (sample)	%(n)	%(n)	%(n)	%(n)	%(n)
	1=Never	2.3 (1)	1.2(1)	1.2(1)	4.7(4)	9.3(8)
	2=Rarely	11.6(10)	7.0(6)	5.9(5)	7.0(6)	31.4(27)
	3=Often	38.4(33)	1.2(1)	8.1(7)	1.2(1)	45.4(42)
	4=Don't know	4.7(4)	0.0(0)	2.3(2)	3.5(3)	10.5(9)
	Total %(n)	57.0(49)	9.3(8)	17.4(15)	16.3(14)	100(86)

Cross-tabulation analysis was also conducted (as shown in Table 4.3) between the identified service areas and the HIV/AIDS training skills attained. The results show that more than a third (34%, n=29) of the respondents who did not receive HIV/AIDS training were working in the GAP service area. This is generally the case across other service areas, except the intellectual disability service area, which had slightly more at 9.3% against 7.0%. Overall, the results indicate that more than half (57%, n=49) of the respondents in the identified service areas did not receive HIV/AIDS training.

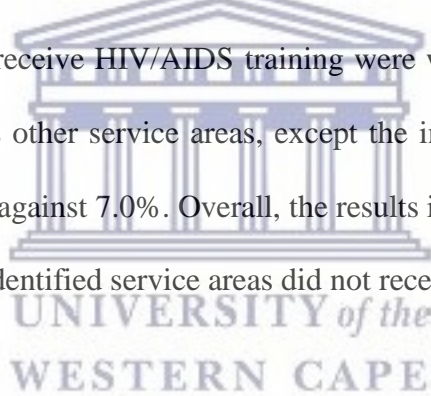


Table 4.3: Cross-tabulation between 'service area of work' and 'HIV/AIDS management training received'

Item	Have you received training in aspects of HIV/AIDS management?		
	1 (Yes)	0 (No)	Total
Which type of services are you currently working?			
	%(n)	%(n)	%(n)
1 General adult psychiatry (GAP)	23.3(20)	33.9(29)	57.0(49)
2 Forensic psychiatry	8.1(7)	9.3(8)	17.3(15)
3 Intellectual disability	9.3(8)	7.0(6)	16.3(14)
4 Child and adolescence psychiatry (CAP)	2.3(2)	7.0(6)	9.3(8)
Total	43.0(37)	57.0(49)	100.0 (86)

Since HIV/AIDS is a fairly recent phenomenon in comparison to other chronic conditions, it has not yet been strongly integrated in university health curricula; thus, it can be assumed that not all of the professional nurses have the required knowledge and skills to tackle the HIV/AIDS epidemic. It was therefore important to determine the proportion of respondents who have received training in HIV/AIDS.

The pie-chart diagram (Figure 4.2) below, shows that less than half 43% (n=37) of the respondents received training in HIV/AIDS management, while a majority (57%, n=49) did not receive any form of HIV/AIDS training.



Figure 4.3: Training in HIV/AIDS management and related training received

For those who received training in HIV/AIDS management, it was important to understand the specific HIV or related training done. Five HIV-related training programmes were identified, namely: HIV counselling and testing (HCT), prevention of mother-to-child transmission (PMTCT), sexually transmitted infection (STI), antiretroviral treatment (ART), tuberculosis and HIV (TB/HIV) and couples counselling.

The results, shown in Figure 4.4, give a picture of what HIV-related training respondents had received.

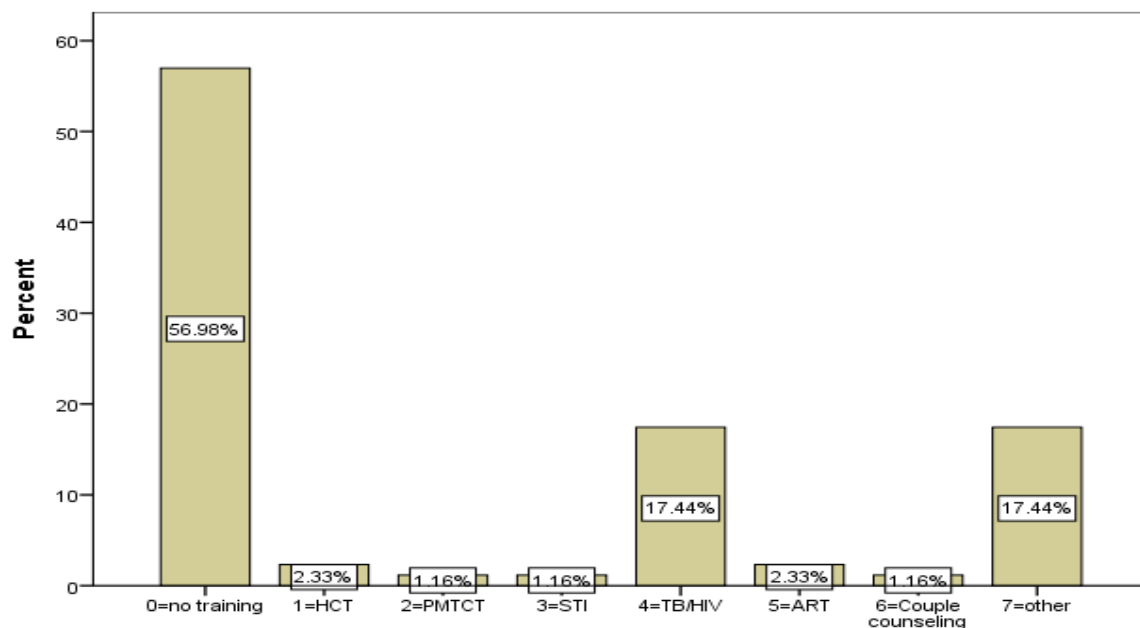


Figure 4.4: Professional nurses with training in HIV/AIDS

Fig 4.4 depicts the results on HIV/AIDS and related training received by respondents. 17.4% received training in TB/HIV, while a small proportion (<3%) indicated having received training in other identified HIV-related areas. Specifically, the results show that 2.33% received training in HCT and ART, and 1.16% received training in PMTCT, STI and couples counselling.

4.4 HIV/AIDS INTERVENTION PROGRAMMES

Knowledge of preferred workplace-related HIV/AIDS interventions programmes and in-service training is valuable as it informs the training needs of professional nurses. Figure 4.4 illustrates the responses from respondents regarding HIV/AIDS intervention programmes that they would prefer to be in the workplace to enhance HIV/AIDS management and skills. The intervention programmes included: counselling and testing service for staff members; committee groups on HIV/AIDS care; and HIV/AIDS related in-service training programmes.

Respondents' knowledge of the existing service was probed, as an option was given to indicate whether the service was available. About 17% indicated that counselling and testing services for staff members and HIV/AIDS-related in-service programmes were already in place, whilst 1.2% indicated that there were committee groups on HIV/AIDS. Of the three areas of selection, counselling and testing services for staff members (55.8%) was the least preferred, whilst HIV/AIDS-related in-service training programmes were the most preferred, as indicated by 70.9% of respondents.

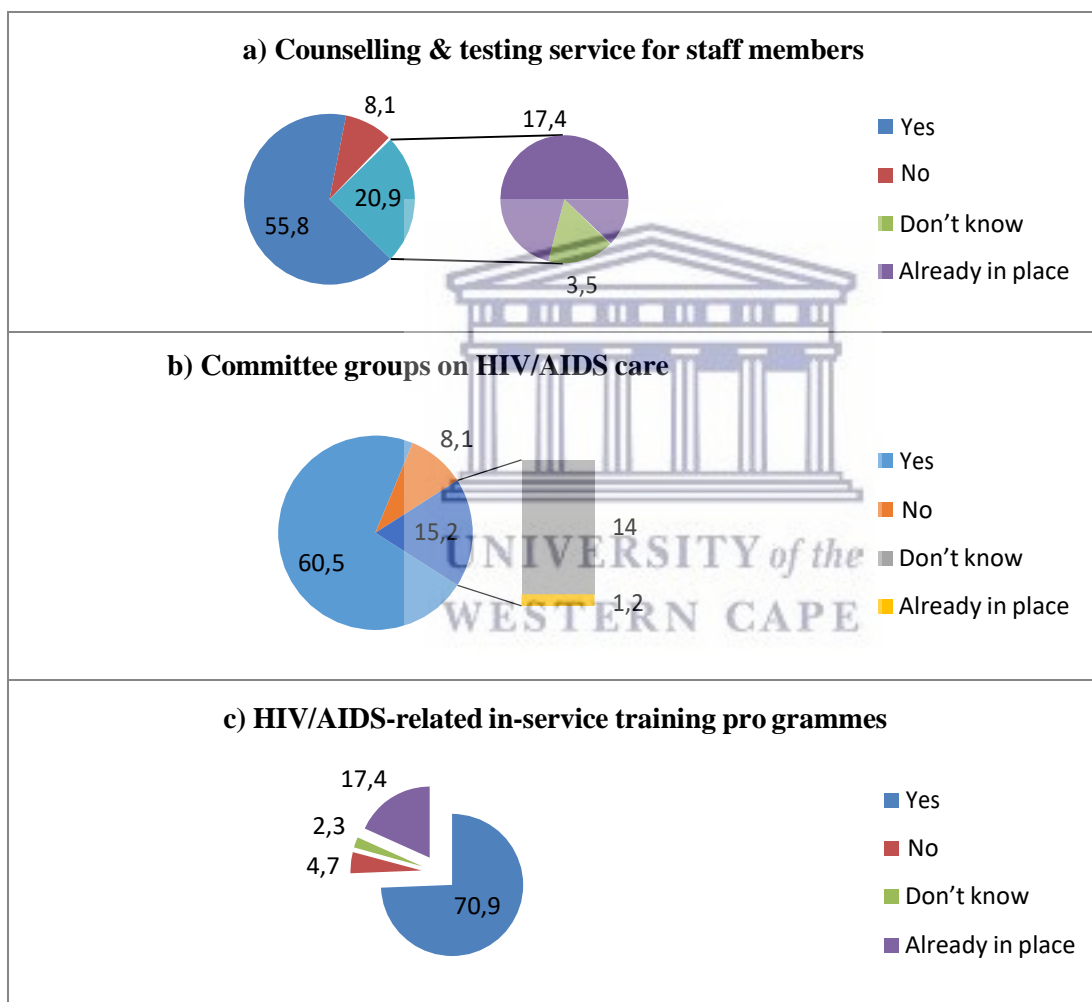


Figure 4.5: Selected workplace intervention programmes and in-service training programmes

4.5 HIV/AIDS KNOWLEDGE ASSESSMENT

This section provides the results related to the knowledge of HIV/AIDS as reported by the respondents. The three subsections of the knowledge questionnaire were designed to assess knowledge on HIV transmission, HIV infection control and HIV management. The knowledge assessment was elicited using a template of pre-designed questions. Responses were captured using a three-pronged score system – ‘true’, ‘false’ or ‘uncertain’. Each score was then marked and classified to reflect whether the respondent answered correctly or incorrectly. The results below (Tables 4.5, 4.6 and 4.7) show the response scores based on ‘correct’, ‘incorrect’ and ‘don’t know’ percentage scores. An overall summary of average score results is presented at the end of the three main sub-sections.

4.5.1 Knowledge on HIV transmission

Table 4.5 presents the results for knowledge on HIV transmission. Respondents were asked whether HIV is highly contagious; almost half (48.8%, n=42) answered incorrectly that HIV is highly contagious whilst 46.5%, (n=40) disagreed. 55% (n=47) agreed that the risk of HIV transmission during mouth to mouth resuscitation is extremely low, whilst 28% answered incorrectly and 17% did not know. More than half (55%, n=47) of respondents were aware that HIV has been transmitted to people via a blood transfusion.

On questioning whether HIV/AIDS can be transmitted by casual contact, 95.3% (n=82) answered correctly and 4.7% (n=4) collectively did not know or answered incorrectly. 93% (n=93) knew that not all pregnant women infected with HIV will have babies born with AIDS, whilst 4.7% (n=4) answered incorrectly and 2.3% (n=2) did not know the answer. A question was posed as to whether pregnant healthcare workers are at greater risk of contracting HIV/AIDS at the workplace; 88.4% (n=76) of respondents did not agree with whilst 9.3% (n=8) stated that it was true and 2.3 did not

know. The respondents were asked whether HIV has been transmitted to people who received blood transfusions, and 61.6% (n=53) knew that HIV has been transmitted to people via blood transfusions whilst 10.5% did not know.

The average score of the subsection on HIV transmission indicates that 75.3% (n=65) answered this section correctly, 18.7% (n=16) responded incorrectly and almost 6% did not know.

Table 4.4: Knowledge on HIV transmission

Item: Knowledge on HIV transmission	Scores		
	Correct	Incorrect	Don't know
	% (n)	% (n)	% (n)
HIV/AIDS can be transmitted by casual contact (F)	95.3(82)	3.5(3)	1.2(1)
All pregnant women infected with HIV will have babies born with AIDS (F)	93.0(80)	4.7(4)	2.3(2)
Pregnant healthcare workers are at greater risk of contracting HIV/AIDS at the workplace (F)	88.4(76)	9.3(8)	2.3(2)
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 (F)	87.2(75)	11.6(10)	1.2(1)
HIV can be easily transmitted through saliva, sweat and tears (F)	76.7(66)	17.4(15)	5.8(5)
HIV/AIDS has been transmitted to people receiving blood transfusion (T)	61.6(53)	26.7(23)	10.5(9)
The risk of transmission of the HIV/AIDS virus during mouth to mouth resuscitation is extremely low (T)	54.7(47)	27.9(24)	4.7(4)
HIV/AIDS is highly contagious (F)	46.5(40)	48.8(42)	17.4(15)
Average score	75.3(65)	18.7(16)	5.7(5)

4.5.2 Knowledge on HIV infection control

The results of the knowledge assessment on HIV infection control are shown in Table 4.5. In this section, respondents were asked questions relating to infection control in HIV. Significant results will be discussed below.

On whether the HIV virus can be easily killed with disinfectant in the environment, 15% (n=13) of respondents agreed with the statement, whilst 78% (n=67) responded incorrectly and 7% (n=3) indicated that they did not know. Furthermore, 64% (n=55) indicated that the risk of HIV among healthcare workers is high, whilst less than 25% of respondents (23.3%) answered correctly,

indicating that the statement was incorrect and 13% (n=11) answered that they did not know. On questioning whether there is a greater likelihood of infection with Hepatitis B than HIV following a needle-prick injury, less than half of the respondents (47.7%, n=41) correctly indicated that the statement was false, whilst 41.9% (n=36) answered incorrectly and 10.5% (n=9) indicated that they did not know. A statement was posed that in order to prevent accidental injury, contaminated needles should be recapped immediately after use on patients with HIV/AIDS; 54.7% (n=47) indicated that this was false, 41.9% (n=36) agreed with the statement and 3.5% (n=3) did not know.

Most of the respondents (96.5%, n=83) correctly disagreed with the statement that indicated gloves are not necessary when handling body fluids and 3.5% (n=3) answered incorrectly. For the statement that people with HIV can be asymptomatic but still infectious, 98.8% (n=85) responded that this was true and 1.2% (n=1) did not know. Significantly, none answered incorrectly. For the statement that the risk of contracting the HIV virus following a needle-prick injury is high, 74.4% (n=64) correctly disagreed with the statement whilst the 19.8% (n=17) incorrectly agreed and 5.8% (n=5) indicated that they did not know. 60.5% (52) answered correctly that gloves and gowns are required for any patients with HIV/AIDS, 37.2% (n=32) indicated incorrectly and 2.3% (n=2) did not know.

On average, 40.9% (n=35) answered incorrectly, 58.9% indicated correct answers and 6.2% indicated that they did not know.

Table 4.5: Knowledge scale assessment on HIV infection control

Items: HIV infection control	Correct	Incorrect	Don't know
1. People with HIV can be asymptomatic, but still infectious (T)	98.8(85)	-	1.2(1)
2. Gloves are not necessary when handling body fluids (F)	96.5(83)	3.5(3)	-
3. The risk of infection with HIV/AIDS virus after an accidental needle stick injury is high (F)	74.4(64)	19.8(17)	5.8(5)
	60.5(52)	37.2(32)	2.3(2)
4. Gloves and gowns are required for any contact with patients with HIV/AIDS (F)			
5. To prevent accidental injury, contaminated needles should be recapped immediately after use on patients with HIV/AIDS (F)	54.7(47)	41.9(36)	3.5(3)
6. Following an accidental needle stick, there is a greater likelihood of infection with hepatitis b than with HIV/AIDS (T)	47.7(41)	41.9(36)	10.5(9)
	23.3(20)	64.0(55)	12.8(11)
7. The risk of occupational HIV/AIDS infection among health workers is high (F)	15.1(13)	77.9(6)	7.0(3)
8. The HIV/AIDS virus can easily be killed with disinfectant in the environment (T)			
Average score	54.4(51)	40.9(35)	6.2(5)

4.5.3 Knowledge on HIV management

The results on knowledge on HIV management are shown in Table 4.6. The last subsection on knowledge included questions or statements that inquired about general HIV knowledge and some relating to management of HIV. Respondents were asked to respond to a question related to the suspicion of HIV/AIDS if a young person presents with Kaposi sarcoma. Less than half of the respondents 45.3% (n=39) indicated correctly that the statement was true, 30.2% (n=26) stated that they did not know and 24.4% answered incorrectly. When asked whether most HIV-positive TB patients have no symptoms or signs of HIV disease, 38.4% (n=33) of the respondents incorrectly disagreed with the statement and slightly more than half (51.2%, n=44) correctly agreed, whilst 10.5% (n=9) of the respondents did not know. A clinical staging question was posed asking if pulmonary TB is classified as a WHO stage 2 condition; 55.8% (n=48) answered incorrectly, 33.7% (n=29) indicated that they did not know and 10.5% (n=9) answered correctly. Another TB-related question asked if TB treatment is the same whether a patient is infected with HIV or not; 68.6% (n=59) answered correctly, 22.1% (n=19) answered incorrectly and 9.3% (n=8) did not know. Slightly above half (52.3%, n=45) correctly disagreed that Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease, 27.9% (n=24) indicated that they did not know, whilst 19.8% (n=17) answered incorrectly.

90.7% (n=78) of respondents indicated correctly that HIV-positive patients with a CD4 count of <200 should be assessed for antiretroviral treatment whilst 7% (n=6) disagreed and 2.3% (n=2) stated that they did not know. 86% (n=74) stated correctly that a person can be infected with HIV for five years or more without getting AIDS. Respondents 80.2% (n=69) correctly stated that an individual may be infected with the HIV virus even if he/she tests negative for HIV/AIDS antibodies, whilst 11.6% (n=10) did not know and 8.1% (n=7) answered incorrectly. A statement that HIV/AIDS is characterised by a decrease in T-4 lymphocytes was answered correctly by 74.4% (n=64), incorrectly by 17.4(n=15), and 16.3% (n=14) indicated that they did not know.

Table 4.6: Knowledge scale assessment on HIV management

Item: Knowledge scale assessment on HIV management	Scores		
	Correct	Incorrect	Don't know
1. HIV positive patients with a CD4 count < 200 should be assessed for antiretroviral treatment (T)	90.7(78)	7.0(6)	2.3(2)
2. Adherence to antiretroviral treatment is essential to avoid the development of drug resistance (T)	89.5(77)	5.8(5)	4.7(4)
3. A person can be infected with HIV for 5 years or more without getting AIDS(T)	86.0(74)	4.7(4)	9.3(8)
4. An individual may be infected with the HIV/AIDS virus even if he/she tests negative for HIV/AIDS antibodies (T)	80.2(69)	8.1(7)	11.6(10)
5. HIV/AIDS is characterised by a decrease in T-4 lymphocytes (T)	74.4(64)	8.1(7)	17.4(15)
6. A person with antibodies to the virus is protected against HIV/AIDS(F)	74.4(64)	9.3(8)	16.3(14)
7. TB treatment is the same whether a patient is infected with HIV or not (T)	68.6(59)	22.1(19)	9.3(8)
8. TB can be prevented in people living with HIV/AIDS using TB preventative therapy (T)	67.4(58)	17.4(15)	15.1(13)
9. Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease (F)	52.3(45)	19.8(17)	27.9(24)
10. Most HIV-positive TB patients have no symptoms or signs of HIV disease (T)	51.2(44)	38.4(33)	10.5(9)
11. One should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi Sarcoma (T)	45.3(39)	24.4(21)	9.3(8)
12. Pulmonary TB is classified as a WHO clinical stage 2 condition (F)	10.5(9)	55.8(48)	33.7(29)
Average score	65.9(57)	18.4(16)	15.7(14)

4.5.4 Knowledge scale summary of results

Table 4.7 below is a summary of the knowledge scale. The overall knowledge scale had an average of 66.7% of correct scores, 26% (n=22) incorrect scores and 9.2% (n=8) and don't know. Among the mean scores, the HIV transmission subsection had the highest correct answers at 75.3% (n=65),

whilst the highest incorrect score was in the infection control subsection with 40.9% (n=35) and 15.7% (n=14).

Table 4.7: Knowledge mean scores

Knowledge assessment category	Mean scores			Total
	Correct	Incorrect	Don't know	
Knowledge on HIV transmission	75.3(65)	18.7(16)	5.7(5)	100
Knowledge on infection control	54.9(51)	40.9 (35)	6.2 (5)	100
Knowledge on HIV and management	65.9(57)	18.4 (16)	15.7 (14)	100
Overall average knowledge score	66.7(57)	26.0(22)	9.2(8)	

To further assist with analysis and assessment of the knowledge of respondents across the three identified HIV knowledge categories, Table 4.7 was re-constructed with the overall mean scores, as shown in Table 4.8. The overall results indicate that professional nurses predominantly have moderate to insufficient knowledge on HIV and AIDS. Most professional nurses (>90%) display low knowledge on infection control, while a third (>30%) display moderate of knowledge on HIV management. However, results indicate that a significant proportion of professional nurses (>75%) possess good knowledge on HIV transmission.

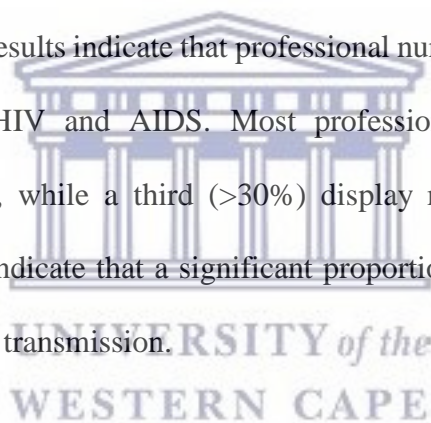


Table 4.8: Overall score assessment based on three HIV knowledge classes

Knowledge assessment category	Mean knowledge scores		
	>80	60 – 79	<60
Score			
Rating		Moderate knowledge	Low-insufficient knowledge
(1) Knowledge on HIV Transmission	-	Moderate (75.3%)	-
(2) Knowledge on infection Control	-	-	low (54.9%)
(3) Knowledge on HIV Management	-	Moderate (65.9%)	-
Overall knowledge score		Moderate (66.7%)	

SECTION C

This section presents the results in view of the second objective of the study that sought to determine the attitudes of professional nurses caring for PLWHA in a psychiatric hospital. The results are discussed below.

4.6 PROFESSIONAL NURSES' ATTITUDES TOWARDS CARING FOR PLWHA

Table 4.9 illustrates the attitudes of the sampled professional nurses towards PLWHA and mental illness. The responses were based on ten identified attitude factors and recorded on a three-point scale: 'agree', 'neutral' and 'disagree'.

Table 4.9: Assessing attitudes of respondents towards PLWHA

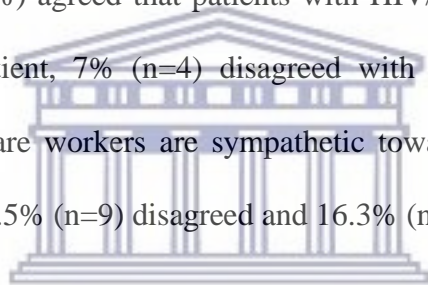
Attitude factor	Attitude scale % (n)		
	D	N	A
4. Patients with HIV/AIDS have the right to the same quality of care as any other patient	-	2.3(2)	95.3(78)
6. Patients with HIV/AIDS should be treated with the same respect as any other patient	7.0(4)	-	90.7(78)
5. It is especially important to work with patients with HIV/AIDS in a caring manner	2.4(2)	8.1(7)	86.0(74)
8. Healthcare workers are sympathetic towards the misery that people with HIV/AIDS experience	10.5(9)	16.3(14)	70.9(61)
10. All patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease	24.4(21)	17.4(15)	55.8(48)
7. Healthcare workers are worried about getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment	29.1(25)	24.4(21)	44.1(38)
9. Nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity	47.6(41)	25.6(22)	24.2(21)
3. When caring for a person with HIV/AIDSs, you need to worry about putting your family and friends at risk of contracting the disease	72.1(62)	7.0(6)	18.7(16)
1. Most people with HIV/AIDS only have themselves to blame	81.4(70)	8.1(7)	8.1(7)
2. When admitted to hospital, patients who are HIV positive should not be put in rooms with other patients	91.9(79)	3.5(3)	2.3(2)

Where D = disagree; N = neutral; A = agree

Attitude factor 4 received the highest record, with almost all respondents 95.3% (n=78) agreeing that PLWHA should receive the same quality of care and 2.3% remaining neutral. Attitude factor 2 also

received a high record (91.9%; n=79) of respondents who disagreed that when admitted to hospital, patients who are HIV positive should not be put in rooms with other patients, whilst 2.3% (n=2) agreed with the statement and 3.5% remained neutral. 81.4% (n=70) of respondents did not agree with the statement that most people with HIV/AIDS only have themselves to blame, 8.1% were neutral and the other 8.1% agreed with the statement.

About 72% of respondents agreed that when caring for a person with HIV/AIDS, you need to worry about putting your family and friends at risk of contracting the disease, 18.7% (n=16) disagreed and 7% (n=6) were neutral. Most respondents (86%, n=74) agreed that it is especially important to work with patients with HIV/AIDS in a caring manner, whilst 2.4% (n=2) disagreed and 8.1% (n=7) were neutral. Most respondents (90.7%) agreed that patients with HIV/AIDS should be treated with the same respect as any other patient, 7% (n=4) disagreed with the statement. 70.9% (n=61) of respondents agreed that healthcare workers are sympathetic towards the misery that people with HIV/AIDS experience, whilst 10.5% (n=9) disagreed and 16.3% (n=14) noted a neutral response.



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Less than half (44.1%, n=38) of the respondents agreed that healthcare workers are worried about getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment, whilst (29.1%, n=25) disagreed and (24.4%, n=21) were neutral. Slightly less than half (47.6%) disagreed that nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity, while 25.6% indicated 'neutral' and 24.4% indicated 'agree'. More than half of the respondents (55.8%) agreed that all patients with HIV/AIDS are entitled to confidentiality, even if it puts others at risk of contracting the disease (factor 10) and 24.4% disagreed, while 17.4% indicated a neutral response.

SECTION D

The last section aimed at soliciting the views of the professional nurses regarding HIV risk perception, given that part and parcel of their function is to deal with PLWHA. This is in line with the third objective of the study as outlined earlier (Chapter 1).

4.7 HIV RISK PERCEPTION

Practice scales were used to determine respondents' perceived risk of HIV infection. The scales were divided into two: the HIV risk factors and the injury factors. Injury factors are questions intended to understand how nurses manage self-injuries sustained while on duty.

As shown in Table 4.10 (a), 74.4% of respondents indicated that they always practise universal blood and body fluid precaution at their workplace, whilst 12.8% (n=11) indicated that they sometimes do and 10.5% (n=9) stated that they never do. A question enquiring on whether nurses wear gloves when restraining someone who is bleeding was posed; 74.4% (n=64) indicated that they always do whilst almost 20% (19.8%) stated that they sometimes do and 3.5% (n=3) indicated that they never do. 75.6% (n=65) of respondents indicated that they wash hands before examining and 22.1% (n=19) indicated that they sometimes do. 62.8% (n=54) of respondents indicated that they treat blood spills on the floor or other surfaces with a disinfectant before cleaning up, whilst 26.7% (n=23) stated they sometimes do and 8.1% (n=7) never do. 58.1% of respondents always encourage people to get tested and counselled for HIV/AIDS, 38.4% (n=33) indicated that they sometimes do and 1.2% (n=2) never do. 36% (n=31) indicated that they always refer people for voluntary counselling and testing, even if these services are not available; 43% (n=37) indicated they sometimes do and 18.6% (n=18) never do.

Table 4.10 (b) indicates that about 33% of respondents indicated that they had had a needle-prick injury, whilst 64% (n=55) had never had a needle-prick injury and 1.2% (1) indicated not applicable. 87.2% (n=75) indicated that they would consider PEP treatment after an occupationally acquired needle-prick injury, 2.3% indicated they will not consider PEP and 8.1% (n=7) indicated not applicable. 29.1% (n=25) indicated that they completed PEP treatment after a needle-prick injury, whilst 7% did not complete it and 60.5% (52) indicated not applicable.

Table 4.10: Practice scale – Assessing HIV risk perceptions of professional nurses

(a) HIV Risk factor	Risk scale % (n)		
	Never	Sometimes	Always
1. Do you wash hands before examining a patient?	-	22.1(19)	75.6(65)
2. Do you practice universal blood and body fluid precautions at your workplace?	10.5(9)	12.8(11)	74.4(64)
3. Do you wear gloves when restraining someone who is bleeding?	3.5(3)	19.8(17)	74.4(64)
4. Do you treat blood spills on floors or other surfaces with a disinfectant before cleaning up?	8.1(7)	26.7(23)	62.8(54)
5. Do you encourage people to get tested and counselled for HIV/AIDS?	1.2(2)	38.4(33)	58.1(50)
6. Do you refer people for voluntary counselling and testing, even if these services are not available at your workplace?	18.6(18)	43.0(37)	36.0(31)

(b) Injury factor	Injury scale % (n)		
	Yes	No	N/A
1. Have you ever had a needle stick injury?	32.6(28)	64.0(55)	1.2(1)
2. If you had a needle stick injury and received PEP treatment, did you manage to complete treatment?	29.1(25)	7.0(6)	60.5(52)
3. Would you consider PEP treatment after the occupationally acquired needle stick injury?	87.2(75)	2.3(2)	8.1(7)

4.8 SUMMARY

This chapter presented the results of the study, which aimed at assessing the HIV knowledge, attitudes and risk perception of professional nurses working in a psychiatric hospital in the Western Cape Province, South Africa. The chapter presented the results based mostly on descriptive and frequency analyses intended to assess the HIV knowledge of professional nurses, including risk perception and attitudes.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 INTRODUCTION

In this chapter, the main research findings of the study are discussed in light of the central research objective, which was to assess the HIV/AIDS knowledge, attitude and risk perception of professional nurses working in a psychiatric hospital in the Western Cape Province regarding the care of PLWHA. Empirical literature is used to place the findings in the context of the broader research on the HIV/AIDS knowledge, attitude and risk perception of professional nurses caring for PLWHA.

5.2 ASSESSING HIV/AIDS KNOWLEDGE OF PROFESSIONAL NURSES

In order to assess and develop better insights regarding the HIV/AIDS knowledge of professional nurses, the results were analysed based on three classified knowledge categories, namely: knowledge on HIV transmission; knowledge on HIV infection control; and knowledge on HIV management. The results are discussed below.



5.2.1 Knowledge on HIV transmission

The overall result indicates moderate knowledge on HIV transmission, implying that professional nurses have knowledge in this case. For some components, the respondents show a lack of knowledge on HIV transmission. For instance, more than half of the respondents agreed that there is high risk of HIV transmission during mouth to mouth resuscitation. The results concur with Mulaudzi et al (2011), who made a similar observation that professional nurses were not aware of the low risk of oral transmission during mouth to mouth resuscitation. It should be noted, however, that seven out of ten respondents were aware that HIV is not easily transmitted via saliva, sweat and tears. In a study by Achappa et al (2012), respondents showed a complete lack of knowledge, as they noted contact with saliva and tears as a mode of HIV transmission. Lack of knowledge regarding oral transmission can convey incorrect information and/or messages, especially to people who are cognitively challenged.

In addition, it can expose PLWHA to more stigma and it can increase stigma among healthcare workers.

It is worth noting that more than half of the respondents indicated that HIV is highly contagious. Similar findings were reported by Delobelle et al (2009), Hassan and Wahsheh (2011) and Shabani (2011). Professional nurses are expected to be more knowledgeable about conditions/diseases that are contagious. This mistaken view can heighten fear of contagion among professional nurses or nurses in general in a manner that may negatively impact service delivery. Therefore, one cannot over-emphasise the importance of HIV training for all nurses, including those who provide specialised psychiatry services.

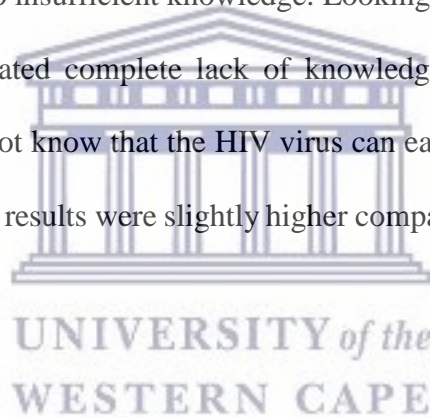
The findings raise the question of whether the language spoken by respondents hinders their understanding of the meaning of the word 'contagious', or their understanding of the meaning in context. For most nurses in South Africa, English is not their first language. Studies done by Delobelle et al (2009) and Shabani (2011) in South Africa have shown similar results of respondents reporting that HIV is highly contagious. This finding is not supported by this study, which found that nine out of ten respondents indicated that PLWHA admitted to hospital can be put in rooms with other patients. This points to the fact that they have an understanding that HIV is not highly contagious. In Jordan, Hassan and Wahsheh's (2011) study, respondents reported HIV as highly contagious, and eight out of ten respondents were of the view that PLWHA should use a different waiting room and different bathrooms/toilets. This supports their view that nurses consider HIV highly contagious, which was not the case in this study's findings.

Whilst psychiatry is a specialised service area, it is expected that professional nurses be fully knowledgeable with regard to HIV transmission. This is particularly important since the professional

nurses are the key ‘drivers’ in prevention and treatment of HIV/AIDS programmes, especially in a country like South Africa which is currently experiencing the highest prevalence of HIV/AIDS in the world. As stressed by Seeman (2015), nurses providing psychiatry services can make a lasting impact in terms of HIV prevention and management through educating psychiatric patients. For instance, nurses have the duty to educate PLWHA on the importance of adherence to treatment, including the dangers and/or risk associated with non-adherence to treatment/ART and psychotropic medication (Seeman, 2015).

5.2.2 Knowledge on HIV control

The second knowledge category assessed professional nurses’ knowledge on HIV infection control. The overall score indicates low to insufficient knowledge. Looking at specific components under this classification, respondents indicated complete lack of knowledge. For instance, more than three quarters of the respondents did not know that the HIV virus can easily be killed with disinfectants in the environment. In this case, the results were slightly higher compared to those reported in Mulaudzi et al (2011) study.



Other assessment components, e.g. whether there is greater likelihood of infection with Hepatitis than HIV following an accidental needle-prick injury, more than half of the respondents gave the incorrect response. Furthermore, 10.5% of the respondents indicated the ‘don’t know’ response, implying lack of knowledge in that regard. Another notable result was that about 45% of the respondents incorrectly indicated that to prevent accidental injury, the contaminated needles should be recapped immediately following an injury. Recapping of needles is an injury risk and such a practice predisposes nurses to blood-borne disease such as HIV and Hepatitis. Furthermore, about 76% of the respondents incorrectly indicated that the risk of occupational HIV infection was high among healthcare workers.

Knowledge of HIV infection prevention and control will empower professional nurses, allowing them to dispense their duties in an occupationally safe manner that minimises exposure to HIV risk. Compared to other knowledge categories (HIV transmission and HIV management), the respondents showed the least knowledge on HIV infection control. This emphasises the need to offer more training programmes targeting knowledge improvement on infection prevention and control relating to HIV and other blood-borne diseases.

5.2.3 Knowledge on HIV management

The overall score indicated that the respondents have moderate knowledge on HIV management and immunology. The moderate knowledge is evidenced by a relatively low score, with only two questions (out of 12) ranging above 50%. For instance, respondents could not tell whether one should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi Sarcoma. Thus, certain presentations, such as Kaposi Sarcoma, might be missed due to a lack of HIV knowledge by the responsible professional nurses. This serious lack of HIV diagnosis knowledge by professional nurses could negatively impact on the reporting of symptoms and urgent referral for HIV testing and management. Therefore, it is critically important that professional nurses are knowledgeable about HIV diagnosis to help with early detection of symptoms and referral management, as this can improve efficient delivery of healthcare services, especially for patients living with mental illness, as reported by Seeman (2015). Knowledge on HIV management will enhance policies and guidelines implementation (Phetlhu et al, 2018). This will contribute to consistency of care regardless of the service provider.

5.3 ATTITUDE OF PROFESSIONAL NURSES TOWARDS PLWHA

Understanding the attitude of professional nurses toward PLWHA was a key component of the study. One important observation was that a majority of the respondents felt that PLWHA should not be

separated from other patients. This finding concurred with other studies, such as Mulaudzi et al (2011)'s study on nurses in Limpopo, South Africa, and Okpala et al (2017) study on nurses in Nigeria.

However, other studies such as that conducted by Achappa et al (2012) in India, reported that more than half of the respondents indicated that patients with HIV needed to be cared for separately from other, non-HIV patients.

Another important result of the current study revolved around a non-stigmatising attitude and recognition of patients' rights. The respondents categorically indicated that HIV-positive 'patients have equal rights', were 'not to be blamed for HIV' and have the 'right to care and respect'. The respondents' knowledge of the patients' rights can be credited to the fact that patients' rights are highlighted as core values of healthcare delivery by the South African Department of Health.

However, a significant number of respondents showed a discriminating attitude, as implied the little sympathy they displayed for people who get HIV from sexual promiscuity. These findings agree with the study by Achappa et al (2012), which made a similar observation. This may be rooted in rigid societal opinions that condemn promiscuity, with little or no sympathy towards people suffering from sexually contracted diseases due to promiscuity (Achappa et al, 2012). Such views hold true and may still prevail in South African communities.

Fear of HIV contagion was significant, as healthcare workers indicated that they are worried about contracting HIV from caring for person with HIV/AIDS in their work environment. Fear of contagion persists mainly due to the lack of HIV knowledge. Respondents' fear of contagion might not be misplaced, as some patients may expose them to injury risk due to aggressive behaviour that can emanate from some mental illnesses.

5.4 HIV RISK PERCEPTION

Given the nature of their duties and routine practices, understanding the HIV risk perceptions by respondents constituted one of the key objectives of the study. In this regard, one important observation was that respondents lacked adequate knowledge on universal precaution and body fluid precaution practices. This points to a low risk perception by professional nurses about their vulnerability and exposure to blood-borne diseases. The finding concurs with Delobelle et al (2009) study, which also observed that knowledge on universal precaution was low among nurses. As pointed out by Portel et al (2014), many strategies aimed at risk prevention start with adequate knowledge and good practice by respondents. If perception of risk exposure to HIV is low, compliance to preventative measures will also be low. The practice exhibited by respondents in this study showed low perception of risk; hence, it is imperative that specialised HIV risk training programmes be introduced. Sharing experiences with peers is another effective method for improving risk perception and increasing compliance with expected standard practices.

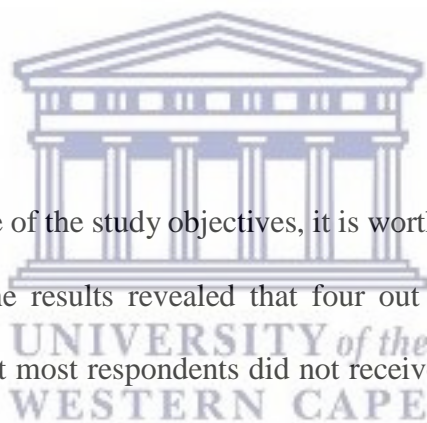
A third of the respondents in this study reported having had a needle-prick injury. Akyol & Kargin (2016) also reported a high percentage of respondents who had had needle-prick injuries. Wu et al (2016) reported a high percentage of professional nurses who had had needle-prick injuries in rural China. The rate of needle-prick injuries is considerably high in psychiatric hospitals as compared to general hospitals with surgical and medical units.

Respondents indicated a high uptake of PEP after a needle-prick injury. About 86% of respondents that took PEP (29.1% (n=25) reported that they completed their treatment, while 7% (n=6) did not. A small fraction (2.3%; n=3) reported having needle-prick injuries and not taking or considering PEP treatment. This could be regarded as under-reporting of injury.

Another observation was the non-adherence to infection control protocols and standards, including not wearing gloves when restraining someone who is bleeding and not washing hands before examining a patient. It can be argued that the unpredictability of aggression in psychiatric hospitals may influence reactive restraining patients without donning gloves to minimise injury or further harm. Thus, Bekelepi (2015) recommended training in the management of aggressive patients for nurses working in psychiatry in order to minimise injury risk and pre-empt aggression. Scenarios or cases that include exposure to bodily fluids should be included in the management of aggression training as this may aid knowledge of management and mitigation of exposure to blood or other bodily fluids, thus minimising the risk of HIV exposure should such situations occur. In addition, hand-washing is key to infection prevention and control, and thus adherence should be observed by all healthcare workers at all times.

5.5 HIV TRAINING

Even though training was not one of the study objectives, it is worth mentioning as it can assist in the formulation of interventions. The results revealed that four out of ten respondents had received HIV/AIDS training, meaning that most respondents did not receive training. Almost all respondents had exposure to caring for PLWHA. Interestingly, the GAP service area, that cared for PLWHA >5 days per week, received training the most and those caring more frequently were mostly not trained. The preferred HIV/AIDS intervention programme selected by respondents was HIV/AIDS-related in-service training. This result may reflect that respondents have self-identified their own HIV/AIDS knowledge gaps and the need for HIV training.



5.6 SUMMARY

This chapter discussed the findings of the study, which aimed at assessing the HIV knowledge, attitude and risk perception of professional nurses working in a psychiatric hospital. Chapter 6 will provide a conclusion, recommendations and the limitations of the study.



CHAPTER 6: CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

6.1 INTRODUCTION

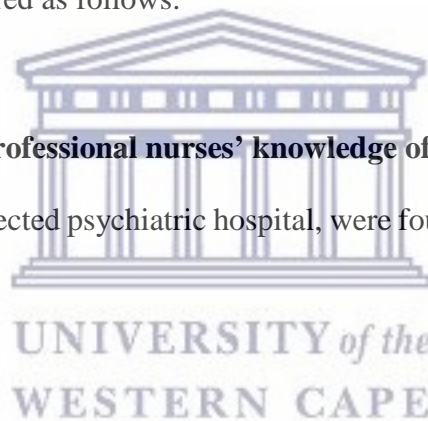
This chapter concludes the study by summarising the keys findings, making recommendations and highlighting the limitations of the study. The study was based on a self-administered questionnaire involving a sample of 86 respondents with three main objectives: determine professional nurses' knowledge on HIV/AIDS transmission, infection control and management; determine the attitude of professional nurses towards PLWHA and mental illness; and investigate professional nurses' perceived HIV risks in a psychiatric hospital.

6.2 SUMMARY

The three objectives were answered as follows:

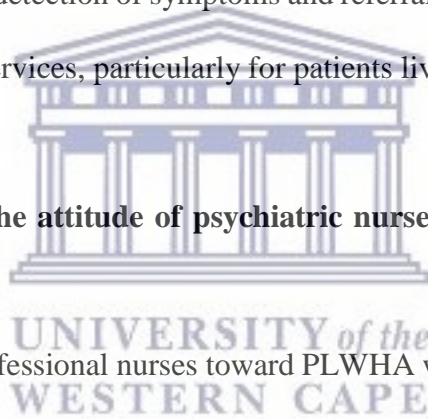
6.2.1 Objective 1: Determine professional nurses' knowledge of HIV/AIDS

In this study, the nurses at the selected psychiatric hospital, were found to have a moderate HIV/AIDS knowledge.



In order to assess and develop better insights regarding the HIV/AIDS knowledge of professional nurses, the results were analysed based on three HIV knowledge categories: HIV transmission; HIV infection control and HIV management. The following indications were derived from the results: (a) With regard to HIV transmission, the overall knowledge score was moderate (>75%), implying that professional nurses have fairly good knowledge in this area. In particular, the respondents showed good knowledge as reflected by high scores on such factors such as 'HIV is transmitted by casual contact', 'pregnant women with HIV will have babies born with HIV', and (b) the second category was to assess knowledge on HIV infection control. The overall score (< 60%) indicated low and/or insufficient knowledge in this regard. Looking at specific components under this category,

respondents indicated significant lack of knowledge on a number of factors: for instance, more than 70% believed the HIV/AIDS virus cannot be killed with disinfectant; 80% believed the risk of occupational HIV/AIDS infection among healthcare workers is high, etc. (c) The third category assessed nurses' knowledge on HIV management and immunology. The overall score (65%) indicated that the respondents have moderate knowledge on HIV management and immunology. The moderate knowledge is evidenced by a relatively low score, with only two questions (out of 12) ranging above 50%. For instance, respondents could not tell whether one should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi Sarcoma. This lack of knowledge among professional nurses could negatively impact on the reporting of symptoms and urgent referral for HIV testing and management. It is critically important that professional nurses are knowledgeable about HIV diagnosis to help with early detection of symptoms and referral management, as this can improve efficient delivery of healthcare services, particularly for patients living with mental illness.



6.2.2 Objective 2: Determine the attitude of psychiatric nurses towards PLWHA and mental illness

Understanding the attitude of professional nurses toward PLWHA was a key component of the study. One important observation was that a majority of the respondents felt that PLWHA should not be separated from other, non-HIV patients. Another important result revolved around a non-stigmatising attitude and recognition of patients' rights. The respondents indicated that PLWHA need not be blamed for contracting HIV and have the right to care and respect. This recognition of the patients' rights can be credited to the bill of patients' rights being highlighted as core values of healthcare delivery by the South African Department of Health.

6.2.3 Objective 3: Investigate professional nurses' perceived HIV risks in a psychiatric hospital

Given the nature of their duties and routine practices, understanding the HIV risk perceptions of professional nurses was one of the key objectives of the study. In this regard, one important observation was that respondents did not adhere to universal and standard precaution practices. The non-adherence points to a low risk perception by professional nurses regarding their exposure to blood-borne diseases.

Strategies aimed at promoting risk prevention start with adequate knowledge and good practice by professional nurses. If the nurses' perception of risk exposure to HIV is low, compliance to preventative measures will also be low. The practice exhibited by respondents in this study showed low perception of risk and exposure. Sharing experiences with peers is one effective method of enhancing risk communication and increasing compliance to expected standard practices.

6.3 RECOMMENDATIONS

The following section presents a few recommendations in view of the main research findings of the study.



6.3.1 Practice


- Offer advanced HIV training programmes for professional nurses with a focus on HIV infection control and HIV management and immunology

Respondents recorded a low score of 55% that implied insufficient knowledge on HIV infection control. Furthermore, respondents recorded a moderate score of 65% on HIV management and immunology, which also implied relatively low knowledge. Because HIV/AIDS is a fairly new phenomenon in comparison to other chronic diseases, it has not yet been fully integrated into most health curricula in many training institutions/universities, particularly in speciality training such as

psychiatric nursing. Hence, it is not surprising that most respondents did not possess the high knowledge level required to tackle the HIV/AIDS epidemic in South Africa. This emphasises the need to offer training programmes focusing on HIV infection control, HIV management and immunology.

- Call to treat and recognise comorbidity of HIV and mental illness as special cases requiring knowledgeable professional psychiatric nurses

The HIV/AIDS epidemic in South Africa has become more complex as PLWHA are increasingly observed to develop mental illness as well. If the country is to win the battle against the HIV/AIDS epidemic, it requires trained and skilled professional nurses, particularly in the delivery of specialised services in psychiatric hospitals.



Nurses working in psychiatric hospitals play a crucial role as conduits for delivering efficient healthcare services in South Africa against a backdrop of increasing comorbidity of HIV/AIDS and mental illness. They provide care to a population of patients that endures some degree of limitation to access of community healthcare due to societal stigmatisation of mental illness. Professional nurses play a pivotal role in empowering patients diagnosed with mental illness and assist in addressing misconceptions around HIV among mentally ill patients diagnosed with HIV/AIDS. Efficient delivery of such specialised services can only be provided when the nurses themselves are highly knowledgeable or empowered through special HIV/AIDS-related training.

- Eradicate and/or reduce stigmatisation through educational campaigns

Stigmatisation of mental illness is a reality. Some service providers are fearful of patients diagnosed with mental illness resulting in withholding of services. This stigmatising attitude emanates from fear or misconception of mental-illness and results in the omission of HIV education and counselling for

mentally ill patients. Thus, educational campaigns targeting societal stigmatisation and misconception can assist to reduce stigmatisation of PLWHA and mental illness and improve overall societal attitude.

Therefore, it is crucially important for professional nurses in mental health who have knowledge of psychiatry to fill the gaps in HIV-related needs that other service providers might have created. Noting their understanding of psychiatry and their non-discriminating attitude, as identified by this research, adds value to care. Repackaging or tailoring of HIV information to suit the level of different categories of mentally ill patients is another essential role professional nurses can play, as cognitive impairment is uncommon among mental healthcare users. Therefore, accurate HIV knowledge among professional nurses promotes correctly repackaging HIV information and disseminating it to mental healthcare users in an effort to erase some misconceptions around HIV and improve ART adherence. As part of a ripple effect, improved HIV knowledge can assist in halting HIV prevalence in South Africa, especially among mental healthcare users. HIV knowledge will not only enhance teaching of patients, but it will add to the nurses' advocacy role, particularly for patients with mental illness.

- Post Exposure Prophylaxis (PEP) training has also been found to be important

HIV knowledge will aid clinical practice with a heightened awareness of the presentation of HIV/AIDS-related illness and infection control protocols. This will empower nurses to practice safely, react appropriately and timeously to HIV exposure, and improve the uptake of PEP. There is a need for a qualitative study exploring non-adherence to PEP and standard precautions such as wearing gloves when restraining aggressive patients.

6.3.2 Education

HIV/AIDS education should be included in advanced psychiatric nursing training because it requires knowledge of both HIV/AIDS and mental illness. Comorbidity of mental illness and HIV is a reality; thus it is of paramount importance that professional nurses be trained. Training programme such as management of aggressive patients designed for psychiatric nurses, as recommended by Bekelepi et al (2015), should incorporate how to mitigate risk of exposure to bodily fluids during an aggressive episode, such as donning of gloves. As observed by Seeman (2015), nurses working in psychiatric hospitals who are given HIV education can:

- help curb HIV amongst mentally ill persons and improve adherence,
- improve observation of ART side effects and drug interaction,
- empower mental healthcare users through sexual health promotion,
- raise awareness around sexual abuse and reporting, and
- repackage or tailor HIV information to suit different cognitive levels of patients in psychiatry.

6.3.3 Research

- Large-scale research on HIV knowledge of healthcare workers in psychiatric hospitals in South Africa should be conducted to guide national and provincial policy in terms of training and support.
- Policy that guides management of HIV in psychiatric hospital should be developed to allow continuity of care.
- A qualitative research study can be conducted to capture the experiences of nurses when caring for PLWHA in psychiatric hospitals.

6.4 LIMITATIONS

This study was conducted at one of the four psychiatric hospitals in the Western Cape. The results can therefore not be generalised to all nurses working in psychiatric hospitals in the Western Cape,

as the contexts are different.



6.5 CONCLUSION

The aim of this study was to describe the HIV/AIDS knowledge, attitude and perceived HIV risks of professional nurses working in a psychiatric hospital in the Western Cape. According to the findings of this study, nurses' HIV/AIDS knowledge was moderate, with an overall score of 66.7%. Six out of the ten factors indicated a positive attitude towards PLWHA. Low HIV risk perception was evidenced by respondents' non-adherence to universal and standard precaution practices. This points to low risk perception about their vulnerability and exposure to blood-borne diseases. Regardless of the low risk perception, their uptake of PEP in the event of an injury was good – 87% (n=75).



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Annexure A: Ethics letter (UWC) Participant Information Sheet



OFFICE OF THE DIRECTOR: RESEARCH RESEARCH AND INNOVATION DIVISION

Private Bag X17, Bellville 7535
South Africa
T: +27 21 959 2988/2948
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E: research-ethics@uwc.ac.za
www.uwc.ac.za

12 September 2016

Mrs T Makaudze
School of Nursing
Faculty of Community and Health Science

Ethics Reference Number HS16/6/15

Project Title: Assessing HIV/AIDS knowledge, attitudes and perceived risks of professional nurses in a psychiatric hospital, Western Cape, South Africa.

Approval Period: 24 August 2016 – 24 August 2017

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.


Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER - 130416-049

Annexure B: Permission letter from the Western Cape Department of Health



STRATEGY & HEALTH SUPPORT

Health.Research@westerncape.gov.za
tel: +27 21 483 6857; fax: +27 21 483 9895
5th Floor, Norton Rose House., 8 Riebeeck Street, Cape Town, 8001
www.capegateway.gov.za

REFERENCE: WC_2016RP11_18
ENQUIRIES: Ms Charlene Roderick

Stellenbosch University

Private Bag x 1

Matieland

7602

For attention: Mrs Tsitsi Makaudze, Dr Penelope Martin

Re: Assessing HIV/AIDS knowledge, attitude and perceived risks of professional nurses in a psychiatric hospital, Western Cape, South Africa.

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact following people to assist you with any further enquiries in accessing the following sites:

Lentegeur Hospital

Nadine Jacobs

021 370 1105

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final feedback (**annexure 9**) within six months of

completion of research. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).

3. In the event where the research project goes beyond the *estimated completion date* which was submitted, researchers are expected to complete and submit a progress report (**Annexure 8**) to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
4. The reference number above should be quoted in all future correspondence.

Yours sincerely



DR A HAWKRIDGE

DIRECTOR: HEALTH IMPACT ASSESSMENT

DATE: 7/10/2016

AS HAWKRIDGE



UNIVERSITY of the
WESTERN CAPE

Annexure C: Information sheet



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 9345 Fax: 27 21-959 2679

E-mail: 2817251@myuwc.ac.za

INFORMATION SHEET

Project Title: Assessing HIV/AIDS knowledge, attitude and perceived risks of professional nurses in a psychiatric hospital, Western Cape, South Africa

What is this study about?

This is a research project being conducted by **Tsitsi R Makaudze** at the University of the Western Cape. We are inviting you to participate in this research project because you are a possible candidate as a professional nurse working in a psychiatric hospital. The purpose of this research project is to enable us to understand HIV knowledge, attitude and perceived risks of professional nurses working in a psychiatric hospital.

The findings of this study may assist in identifying the knowledge needs of psychiatric nurses regarding HIV/AIDS. The organization may also utilize the results to update training for nurses regarding HIV/AIDS and fill the gaps of knowledge identified if any.

What will I be asked to do if I agree to participate?

You will be visited in your respective wards and an informed consent and questionnaire will be issued. Confidentially will be observed; individual respondents will be given envelopes to enclose their completed questionnaire, consent forms will be collected once completed.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, *the surveys are anonymous and will not contain information that may personally identify you.*

- 1) your name will not be included on the surveys and other collected data;
- 2) a code will be placed on the survey and other collected data;
- 3) through the use of an identification key, the researcher will be able to link your survey to your identity; and
- 4) only the researcher will have access to the identification key.

To ensure your confidentiality, a locked filing cabinet will be used to store all completed and they will be accessible to the principal investigator and researcher.

If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There are minimal risks which may include physical, psychological, emotional, spiritual, social or legal harm. If you experience any psychological, emotional, spiritual, social or harm you will be referred to the Occupational Health Nurse for ICAS referral.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about HIV knowledge, attitude and perceived risks of professional nurses. We hope that, in the future, other people might benefit from this study through improved understanding of HIV knowledge, attitude and perceived risks of professional nurses.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by *Tsitsi R. Makaudze, Department of Nursing* at the University of the Western Cape. If you have any questions about the research study itself, please contact *Tsitsi R Makaudze*, at: 9 Broodboom Kuilsriver 7580, 0737465537, tmakaudze@gmail.com

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Dr S Arunachallam
Acting Head of Department: School of Nursing
University of the Western Cape
Private Bag X17
Bellville 7535
sarunachallam@uwc.ac.za

Prof José Frantz
Dean of the Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville 7535
chs-deansoffice@uwc.ac.za

Annexure D: Participant's consent form

UNIVERSITY OF THE WESTERN CAPE



Private Bag X 17, Bellville 7535, South Africa

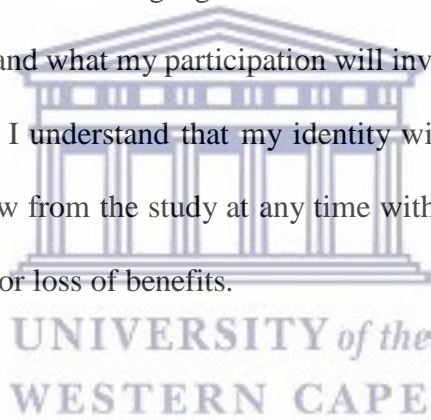
Tel: +27 21-959 9345 **Fax:** 27 21-959 2176

E-mail: 2817251@myuwc.ac.za

CONSENT FORM

Title of Research Project: Assessing HIV/AIDS knowledge, attitude and perceived risks of professional nurses in a psychiatric hospital, Western Cape, South Africa

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.



Participant's name.....

Participant's signature.....

Date.....

Annexure E: Permission to use instrument



SCHOOL OF PUBLIC HEALTH FACULTY OF COMMUNITY AND HEALTH SCIENCES

Private Bag 2617, Bellville 7535, South Africa
Tel.: +27 (0)21 959 2809/2132
Fax: +27 (0)21 959 2872
Website: www.uwc.ac.za/faculties/soh

TO WHOM IT MAY CONCERN

29 August 2016

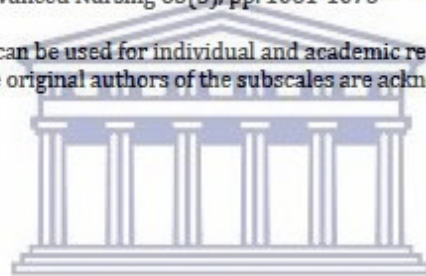
This is to testify that Ms. TSITSI REGINA MAKAUDZE (Student Nb. 2817251) has been granted permission to use the instrument published in the paper:

Delobelle P, Rawlinson J, Ntuli S, Malatsi I, Decock R, & Depoorter AM (2009) 'HIV/AIDS knowledge, attitudes, practices & perceptions of rural nurses in South Africa,' *Journal of Advanced Nursing* 65(5), pp. 1061-1073

The instrument can be used for individual and academic research purposes, on condition that the original authors of the subscales are acknowledged in this research.

Kind regards,

Peter Delobelle
Senior Lecturer
School of Public Health
University of the Western Cape
Tel +27 (0)21-959 9573
Fax +27 (0)21-959 2872
E-mail pdelobelle@uwc.ac.za



UNIVERSITY of the
WESTERN CAPE



WHO Collaborating Centre
for Research and Training in
Human Resources for Health

Annexure F: Data collection tool

Assessing HIV/AIDS knowledge, attitude and perceived risks of professional nurses in a Psychiatric hospital, Western Cape, South Africa

HIV&AIDS Questionnaire



Your responses to this survey will be very valuable as it helps us to understand current knowledge, attitudes and practices of professional Nurses with regard to HIV & AIDS. 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.

Section A: Please begin by completing the following questions:

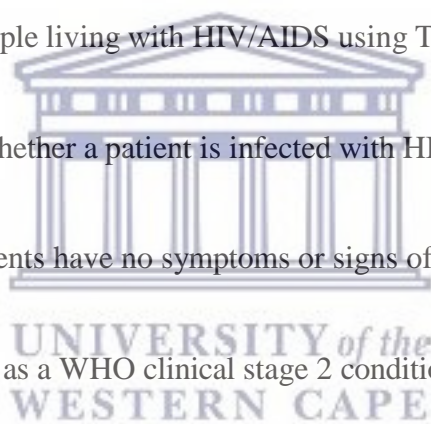
1. How old are you? <20 20-29 30-39 40-49 50-59 60 > (years)
 2. What is your gender? M F
 3. What is your rank? Professional Nurse Specialised Professional Nurse
 4. What is your highest nursing educational qualification? Diploma Degree
 Master's Degree Advanced Diploma Other
 5. Which type of service are you currently working in? General adult psychiatry
 Child and Adolescent psychiatry Forensic psychiatry Intellectual disability
 6. How many years of professional experience do you have?
 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 yes, please specify: HCT PMTCT STI TB & HIV ART
 Couple counselling Other
- If other, please specify:
9. What HIV/AIDS intervention programs do you think should be put at your workplace to enhance HIV/AIDS management and skills?
 - a. Counselling & testing services for staff members: Yes No Don't know
 Already in place
 - b. Committee groups on HIV/AIDS care: Yes No Don't know
 Already in place
 - c. HIV/AIDS related in-service training programs: Yes No Don't know
 Already in place
 - d. Other (specify):
 10. Have you been tested for HIV/AIDS? Yes No Don't know

Instructions for scoring the following sections:

Please answer items in Section B 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/AIDS can be transmitted by casual contact	T	F	DK
2. HIV/AIDS has been transmitted to people receiving blood transfusion	T	F	DK
3. The HIV/AIDS virus can easily be killed with disinfectant in the environment	T	F	DK
4. HIV/AIDS is highly contagious	T	F	DK
5. HIV/AIDS is characterized by a decrease in T-4 lymphocytes, causing an impaired cellular immunity	T	F	DK
6. A person with antibody to the virus is protected against HIV/AIDS	T	F	DK
7. All pregnant women infected with HIV will have babies born with AIDS	T	F	DK
8. Gloves are not necessary when handling body fluids	T	F	DK
9. Following an accidental needle stick, there is a greater likelihood of infection with hepatitis B than with HIV/AIDS	T	F	DK
10. People with HIV can be asymptomatic, but still infectious	T	F	DK
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	T	F	DK
12. The risk of infection with HIV/AIDS virus after an accidental needle stick injury is high	T	F	DK
13. An individual may be infected with the HIV/AIDS virus even if he/she tests negative for HIV/AIDS antibodies	T	F	DK
14. A person can be infected with HIV for 5 years or more without getting AIDS	T	F	DK
15. The risk of occupational HIV/AIDS infection among health workers is high	T	F	DK

16. Gloves and gowns are required for any contact with patients with HIV/AIDS	T	F	DK
17. One should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi's sarcoma	T	F	DK
18. The risk of transmission of the HIV/AIDS virus during mouth to mouth resuscitation is extremely low	T	F	DK
19. To prevent accidental injury, contaminated needles should be recapped immediately after use on patients with HIV/AIDS	T	F	DK
20. Pregnant health care workers are at greater risk of contracting HIV/AIDS at the workplace	T	F	DK
21. HIV can be easily transmitted through saliva, sweat and tears	T	F	DK
22. TB can be prevented in people living with HIV/AIDS using TB preventative therapy	T	F	DK
23. TB treatment is the same whether a patient is infected with HIV or not	T	F	DK
24. Most HIV-positive TB patients have no symptoms or signs of HIV disease	T	F	DK
25. Pulmonary TB is classified as a WHO clinical stage 2 condition	T	F	DK
26. Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease	T	F	DK
27. HIV-positive patients with a CD4-count < 200 should be assessed for antiretroviral treatment	T	F	DK
28. Adherence to antiretroviral treatment is essential to avoid the development of drug resistance	T	F	DK



For Section C 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	SD	D	N	A	SA
2. When admitted to hospital, patients who are HIV-positive should not be put in rooms with other patients	SD	D	N	A	SA
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	SD	D	N	A	SA
4. Patients with HIV/AIDS have the right to the same quality of care as any other patient	SD	D	N	A	SA
5. It is especially important to work with patients with HIV/AIDS in a caring manner	SD	D	N	A	SA
6. Patients with HIV/AIDS should be treated with the same respect as any other patient	SD	D	N	A	SA
7. Healthcare workers are worried about getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment	SD	D	N	A	SA
8. Health care workers are sympathetic towards the misery that people with HIV/AIDS experience	SD	D	N	A	SA
9. Nurses have little sympathy for people who get HIV/AIDS from sexual promiscuity	SD	D	N	A	SA
10 All patients with HIV/AIDS are entitled to confidentiality, even if it puts other people at risk of contracting the disease	SD	D	N	A	SA

Section D should be answered by circling 1-7 with 'Never', 'Sometimes', 'Always' then 8-10 'Yes'(Y), 'No' (N) or when the question does not apply to you, by circling 'Not applicable' (N/A)

HIV/AIDS Practice Scale	Never	Sometimes	Always
1. Do you encourage people to get tested and counselled for HIV/AIDS?	Never	Sometimes	Always
2. Do you refer people for voluntary counselling and testing, even if these services are not available at your workplace?	Never	Sometimes	Always
3. Do you practice universal blood and body fluid precautions at your workplace?	Never	Sometimes	Always
4. Do you wear gloves when restraining someone who is bleeding?	Never	Sometimes	Always
5. Do you wash your hands before examining a patient?	Never	Sometimes	Always
6. Do you treat blood spills on floors or other surfaces with a disinfectant before cleaning up?	Never	Sometimes	Always
7. Have you ever had a needle stick injury?	Y	N	N/A
8. Would you consider PEP treatment after the occupationally acquired needle stick injury?	Y	N	N/A
9. If you had a needle stick injury and received PEP treatment did you manage to complete treatment?	Y	N	N/A

Thank you for your participation it is sincerely appreciated!

HIV/AIDS knowledge scale	T	F	DK
1. HIV/AIDS can be transmitted by casual contact.	T	F	DK
2. HIV/AIDS has been transmitted to people receiving blood transfusion.	T	F	DK
3. The HIV/AIDS virus can easily be killed with disinfectant in the environment.	T	F	DK
4. HIV/AIDS is highly contagious.	T	F	DK
5. HIV/AIDS is characterized by a decrease in T-4 lymphocytes, causing an impaired cellular immunity.	T	F	DK
6. A person with antibody to the virus is protected against HIV/AIDS.	T	F	DK
7. All pregnant women infected with HIV will have babies born with AIDS.	T	F	DK
8. Gloves are not necessary when handling body fluids.	T	F	DK
9. Following an accidental needle stick, there is a greater likelihood of infection with hepatitis B than with HIV/AIDS.	T	F	DK
10. People with HIV can be asymptomatic, but still infectious.	T	F	DK
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.	T	F	DK
12. The risk of infection with HIV/AIDS virus after an accidental needle stick injury is high.	T	F	DK
13. An individual may be infected with the HIV/AIDS virus even if he/she tests negative for HIV/AIDS antibodies.	T	F	DK
14. A person can be infected with HIV for 5 years or more without getting AIDS.	T	F	DK
15. The risk of occupational HIV/AIDS infection among health workers is high.	T	F	DK
16. Gloves and gowns are required for any contact with patients with HIV/AIDS.	T	F	DK
17. One should suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi's sarcoma.	T	F	DK
18. The risk of transmission of the HIV/AIDS virus during mouth to mouth resuscitation is extremely low.	T	F	DK
19. To prevent accidental injury, contaminated needles should be recapped immediately after use on patients with HIV/AIDS.	T	F	DK
20. Pregnant health care workers are at greater risk of contracting HIV/AIDS at the workplace.	T	F	DK
21. HIV can be easily transmitted through saliva, sweat and tears.	T	F	DK
22. TB can be prevented in people living with HIV/AIDS using TB preventive therapy.	T	F	DK
23. TB treatment is the same whether a patient is infected with HIV or not.	T	F	DK
24. Most HIV-positive TB patients have no symptoms or signs of HIV disease.	T	F	DK
25. Pulmonary TB is classified as a WHO clinical stage 2 condition.	T	F	DK

26. Cotrimoxazole is not recommended for persons presenting with symptomatic HIV disease.	T	F	DK
27. HIV-positive patients with a CD4-count < 200 should be assessed for antiretroviral treatment.	T	F	DK
28. Adherence to antiretroviral treatment is essential to avoid the development of drug resistance.	T	F	DK



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Annexure G: Answer key (knowledge scale)

No.	KEY
1	FALSE
2	TRUE
3	TRUE
4	FALSE
5	TRUE
6	FALSE
7	FALSE
8	FALSE
9	TRUE
10	TRUE
11	FALSE
12	FALSE
13	TRUE
14	TRUE
15	FALSE
16	FALSE
17	TRUE
18	TRUE
19	FALSE
20	FALSE
21	FALSE
22	TRUE
23	TRUE
24	TRUE
25	FALSE
26	FALSE
27	TRUE
28	TRUE



Annexure H: Editorial certificate

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To whom it may concern

I hereby certify that I, Nathan Thomas Lowe, edited the thesis of Tsitsi Regina Makaudze, entitled 'Assessing HIV/AIDS knowledge, attitude and perceived risks of professional nurses in a psychiatric hospital, Western Cape, South Africa', for grammar, clarity and consistency.

Regards



Nathan T Lowe
Editor for the Language Unit at the University of Pretoria

