PERCEIVED BARRIERS OF HIV STATUS DISCLOSURE OF PREGNANT WOMEN TO THEIR PARTNERS IN THE CAPRICORN DISTRICT, LIMPOPO PROVINCE

by

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DECLARATION

I declare that **PERCEIVED BARRIERS OF HIV STATUS DISCLOSURE OF PREGNANT WOMEN TO THEIR PARTNERS IN THE CAPRICORN DISTRICT, LIMPOPO PROVINCE** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of completed sentences.

31 May 2018

SIGNATURE **DATE**

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ABSTRACT

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Disclosure of a Human Immunodeficiency Virus (HIV) positive status is vital for prevention and promotion of the couple's health. The study aimed to investigate the perceived barriers of pregnant women diagnosed as HIV positive towards disclosure of their HIV status to their partners in the Capricorn District, Limpopo Province. Recommendations were formulated to enhance the self-efficacy.

A quantitative, explorative, descriptive cross-sectional design and the Health Belief Model theory was used. Non-probability, convenience sampling utilised and 170 respondents aged 18-40 years participated in the study. A questionnaire was used to collect data and the SSPS version 24.0 was utilised to analyse data. Overall, 87.64% respondents received disclosure education and 80% disclosed their status to their partners. Reasons for non-disclosure included fear of rejection, violent behaviour, blame and stigmatisation by partners. Health care workers should provide pregnant women with information on preventive strategies to enhance disclosure of HIV status.

Keywords:

Barriers, disclosure, Health Belief Model, HIV positive status and partners, pregnancy.

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LIST OF ABBREVIATIONS

3TC	Lamivudine
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal clinic
ART	Antiretroviral therapy
ARV	Antiretroviral
AZT	Zidovudine
CARMMA	Campaign on accelerated reduction of maternal child mortality in Africa
CD4+T	T-helper cells- a unit measure of the Immune system
CMV	Cytomegalovirus
D4T	Stavudine
DNA	Deoxyribonucleic acid (is a self-replicating material which is present in nearly all living organisms as the main constituent of chromosomes)
EBSCO	Elton B. Stephens Company (is the leading provider of research databases for e-journals, e-books, magazine subscriptions and discovery services for academics)
EFV	Efavirenz
ELISA	Enzyme-Linked immunosorbent assay
FDC	Fixed-dose combination
FTC	Emitricitabine
HAART	Highly active antiretroviral treatment
HBM	Health Belief Model
HCT	HIV counselling and testing
HIV	Human immunodeficiency virus
LAV	Lymphadenopathy associated virus
MTCT	Mother-to-child transmission of HIV
NHREC	National Health Research and Ethics Committee
NNRTI	Non-nucleoside reverse transcriptase
NNRTI	Non-nucleoside reverse transcriptase
NPRI	Non-pregnancy related infections
NRTI	Nucleoside reverse transcription inhibitors

NVP	Nevirapine
PCP	Pneumocystis Jiroveci Pneumonia
PI	Protease inhibitors
PLWHA	People living with HIV/AIDS
PMTCT	Prevention of mother-to-child transmission
SPSS	Statistical Package for the Social Sciences
TB	Tuberculosis
TDF	Tenofovir
UNAIDS	Joint United Nation Programme on HIV/AIDS
USA	United States of America
VL	Viral load
VHCT	Voluntary HIV counselling and testing
WHO	World Health Organisation

CHAPTER 1
ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Chapter 1 will provide an overview of the concept of Human Immunodeficiency Virus (HIV) status disclosure, the background, problem statement, purpose, objectives, theoretical foundation, methodology, and ethical aspects of the dissertation.

Pregnant women's disclosure of their HIV status to their partners is essential for the prevention and spread of HIV, mother-to-child transmission (MTCT), lowering viral load, and adherence to treatment (Walcott, Hatcher, Kwena & Turan 2013:1). During pregnancy, women are at considerably higher risk of HIV acquisition (male-to-female) and transmission (female-to-male). Disclosure may particularly be crucial for pregnant women to lower mortality and morbidity rates.

The United Nations Programme on HIV/AIDS (UNAIDS 2015:2) reported that the HIV epidemic affected 36.9 million people globally in 2014. Thirty-four point three (34.3) million of these were adults, and 17.4 million were women. The total number of newly infected people with HIV in 2014 was 2 million (1.8 million adults). According to the Global AIDS update (UNAIDS 2016:2), there were 1.9 million new infections worldwide in 2015 compared to 2.2 million new infections worldwide in 2010. The slight decline in new infections indicates that health professionals need to ensure on-going awareness and counselling for health care users (including pregnant women) and community members to increase HIV status disclosure. This may contribute to the decline of newly infected individuals.

Pregnant women are at risk of transmitting HIV to their unborn babies through MTCT, to their partners, and they can also be re-infected. Pregnant women are offered HIV testing during antenatal clinic visits. These visits create a platform for health care workers to provide pre-test and post-test counselling, and disclosure education. Although pregnant women are given this opportunity to know their status, it seems to be difficult for some to disclose their status to their partners. Disclosing an HIV positive status to their partners can assist the pregnant women to adhere to treatment protocols and provide them with support.

The maternal mortality ratio in Capricorn district was reduced from 98 to 87 deaths per 100 000 in 2014/2015 but remained the second highest district in the South Africa compared with absolute number of maternal deaths (Department of Health 2017:11). According to Alemayehu, Aregay, Kalayu and Yebyo (2014:3) in the study conducted in Ethiopia, 36% of HIV positive pregnant women did not disclose their status to their partners, causing concern for the researcher. This prompted the researcher to investigate if there are barriers for pregnant women to disclose their HIV status to their partners in the Capricorn District, Limpopo Province.

1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM

According to the UNAIDS (2017:14) report, the estimated number of deaths from HIV-related causes in 2016 by region was as follows: Eastern and Southern Africa: 420 000, Western and Central Africa: 310 000, Middle East and North Africa: 11 000, Asia and the Pacific: 170 000, Latin America: 36 000, Caribbean: 9400, Eastern Europe and Central Asia: 40 000, Western and Central Europe and North America: 18 000. A total of 1 000 000 people globally. Africa had the highest number of people dying from HIV-related causes. According to the Saving Mothers' Report 2011-2013 (National Department of Health (NDoH) 2014), the Sixth report on Confidential Enquiries into Maternal Deaths in South Africa, non-pregnancy related infections (including HIV) remained the largest category of maternal deaths. The Saving Mothers' Report (NDoH 2014) also reveal an estimated 53.47% women died due to non-pregnancy related infections (NPRI). Ninety percent (90%) of cases in the NPRI group were infected with HIV, while 3.6% of the cases had an unknown HIV status, and 6.6% of the cases were HIV negative. The HIV positive mothers may deliver HIV positive babies, which may lead to an HIV positive community and complications such as ill health, which will put pressure on the health system.

UNAIDS (2016:8) reported that in 2015, new HIV infections among adults globally by age and sex was as follows: females 25+ years were at 27%, while 20% of 15 to 24 years' old were newly infected. Males 25+ years were at 39%, while 14% were newly infected among the 15 to 24 year age group. According to UNAIDS (2016:8) new infections among adults in Sub-Saharan Africa, by age and sex in 2015 were as follows: females 25+ years was at 31%, and 25% were from 15 to 24 years old, while males were reported at 31% in the 25+ age group, and 12% for the 15 to 24 year olds. Twelve percent (12%) of males were newly infected with HIV in the age group 15 to 24 years, which was less than the 25% of women in the same age group who were also newly infected with HIV. A similar rate of 31% was reported in the age group 25+ years for both males and females in Sub-Saharan Africa in 2015.

According to UNAIDS (2016:8), there is a discrepancy between the percentage of new HIV infections among similar age females and males. Women aged 15-24 years had a new infection rate of 25% while men in the same age group had an infection rate of 12%. The 15-24 year old females are of child-bearing age, therefore disclosure of HIV status might help to reduce the spread of infection and MTCT. This is an area were health care workers can provide information on HIV status disclosure through disclosure education of young females and their partners during antenatal visits to reduce the spread of the infection. Females are more aware of their HIV status as they are offered HIV testing at antenatal clinic visits. It is unclear why this discrepancy in the percentage of new infections between males and females exists. Several aspects can contribute, for instance the female anatomy (as discussed later in this chapter) (van Dyk, Tlou & van Dyk 2017:51). According to the study conducted in the United States by Chandler, Anstey, Ross and Morrison-Beedy (2016:2), college women frequently engaged in unprotected sex (sex without condoms), often with multiple partners. These practices expose them to HIV infection.

UNAIDS (2016:8) reports that South Africa was severely affected by HIV, with an estimated 7 million people living with HIV. There were 380 000 new infections in 2015 and in the same year 180 000 South Africans died from acquired immune deficiency syndrome (AIDS) related illnesses. The National Consolidated Guidelines for Prevention of Mother-to-Child Transmission (PMTCT) guided the South African government to promulgate protocols for the treatment of HIV positive pregnant women to decrease the high morbidity and mortality of women and children younger than 5 years (UNAIDS 2014). The government initiated changes in the antiretroviral (ARV) therapy regimen from multiple drugs to a fixed-dose combination (FDC) ARV drug, whereby all HIV positive pregnant women, irrespective of their CD4 cell count, enrol for the ARV treatment (NDoH 2015:133).

The National Consolidated Guidelines, namely the PMTCT of HIV, include the reduction in the transmission of HIV/AIDS infections through voluntary counselling and testing, and offering those pregnant women that are unaware of their HIV status an opportunity to know their status. The principles of HIV counselling and testing in many health settings for managing HIV encourage pregnant women to disclose their status in a confidential manner to their partner(s) or family members, trusted others, and health care workers (NDoH 2014:20).

According to the Guidelines for Maternity Care in South Africa (NDoH 2016:109), the aims of PMTCT in antenatal care includes: identifying all women who are HIV positive, including those who seroconvert during pregnancy and breastfeeding; providing antiretroviral therapy (ART) the same day the HIV positive status is diagnosed to optimise maternal health and to prevent MTCT of HIV, and ensuring HIV positive pregnant and breastfeeding women are virologically suppressed on ART. These aims can be achieved if the HIV positive pregnant women disclose their HIV status to their partners soon after they are diagnosed with HIV. The health care workers need to assist the pregnant women to identify factors that might be barriers or motivate them to disclose their HIV status to their partners. These measures could strengthen HIV prevention efforts.

According to the study conducted in Uganda in 2013 by Santelli, Edelstein, Mathur, Wei, Zhang, Orr, Higgins, Nalugoda, Gray, Wawer and Serwadda (2013:6), researchers found a considerable rate of new infections in youth living in the Rakai District and identified factors that placed youth at higher risk for HIV acquisition. Young women were at higher risk for HIV acquisition than men, particularly among 15 to 19-year-olds. Behavioural and biological factors commonly associated with

HIV and other sexually transmitted infections (STIs) were prominent risk factors. These include multiple partners, alcohol use, and evidence of other STIs. The risk for new infections was strongly shaped by social transitions such as leaving school and marital dissolution (Santelli, et al. 2013:6).

In a study conducted in Sub-Saharan Africa (Ramjee & Daniels 2013), the reasons for the increased susceptibility of women were biological, and related exposure to potentially infectious fluids, with higher HIV concentrations in semen than in vaginal fluids, and the greater permeability of the mucous membranes of the vagina versus those of the penis. Women are also more likely to face increased tissue injury. These authors also agree that STIs increase the risk of HIV acquisition (Ramjee & Daniels 2013:2).

Beyond biological risks factors, women in South Africa face social risk factors related to gender inequality, female economic dependency, the cultural subordination of women, gender violence, and aggressive affirmation of masculinity on sexual dynamics, for instance, having multiple sexual partners testifies to male virility (Bezuidenhout 2013:185).

Mamogobo, Lekhuleni and Matlala (2013:42), in a study conducted in Limpopo Province, South Africa, further state that the goal of disclosure was to ensure that people living with HIV and AIDS negotiate and use condoms consistently with their sexual partners to reduce HIV transmission and decrease the viral load. In their study, male partners refused to use condoms despite knowledge of an HIV positive status. Female participants also continued to engage in unprotected sex despite knowing their HIV positive status, and some even fell pregnant after being diagnosed and counselled by health workers.

Nyandat and van Rensburg’s (2015:60) study in Kenya revealed that the benefits of HIV status disclosure included infant prophylaxis, absolute breastfeeding in the first 6 months, awareness of partner status, and male partner involvement which are valuable in the protection against MTCT of HIV. Overall, the non-disclosure rate to a partner was 16.7%, while 83.3% disclosed their HIV status to their partners. According to Mbokane, Ehlers and Roos (2016:16), consistent condom use throughout pregnancy and breastfeeding phases is essential to prevent re-infections which could cause the CD4 count to fall and the viral load to rise, increasing the risk of MTCT. Twenty-five percent (25%) of the HIV positive women in their study considered themselves to be protected from HIV infection because they only had sex with one partner. It seems vitally important that health education messages should emphasise that ‘being faithful’ only offers protection against HIV infection if both partners are exclusively faithful to each other, and if both partners are HIV negative.

According to a study conducted in Northern Ethiopia, HIV disclosure also prevents HIV infection of the sexual partner with a discordant HIV status. Sixteen point one percent (16.1%) of the respondents’ sexual partners in that study were HIV negative (Alema, Misgina & Weldu 2017:57). HIV exposes the women to opportunistic infections which can lead to ill health and death, especially during pregnancy whereby the woman’s body is compromised because of the physiological changes that occur. The presence of HIV further aggravates the pregnant woman’s health status.

Dlamini and Mkoboto-Zwane (2015:54) further state that 28.9% of the respondents in their study hid their HIV status and that of the child from their partners. As a result, 6.7% collected the HIV prophylaxis from the clinic but did not administer it to their children as they had not disclosed their status to their partners. The benefits of the pregnant woman disclosing her HIV positive status to her partner create opportunities such as being encouraged to seek health care services when and where diagnosed, and care and support in the form of support groups where women share their experiences. This might promote coping processes and support structures. With proper health management, the women may deliver HIV-negative infants (NDoH 2015:133). With HIV status disclosure to their partners, the provision of treatment, the facilitation of health care, and support to women infected with HIV may be attainable. The HIV positive pregnant women are encouraged to disclose their status to their partners as an integral practice in MTCT prevention programmes (Kiula, Damian & Msuya 2013:1). In the Ugandan study by Kiweewa, Bakaki, McConnell, Musisi, Namirembe, Nakayiwa, Kusasira, Nakintu, Mubiru, Musoke and Fowler (2015:5) it was indicated that only 38% of women disclosed their HIV status to their partners. Women tend to avoid disclosure of their HIV status to their partners and prefer to disclose to significant others, such as family members or friends.

Yako and Memeza (2013:77) report that 62% of HIV positive respondents in a study in the Eastern Cape Province, South Africa, disclosed their HIV status to significant others such as family members, but did not disclose to their sexual partners. Genet, Sebsibie and Gultie (2015:5) agree that it is crucial that participants disclose their HIV status to their sexual partners to enhance ART initiation of both partners, and to promote safe sex practices to lower transmission and the viral load. A low viral load is associated with low chances of transmitting the virus to an HIV-negative partner (or baby in the case of pregnant women), while a high viral load is associated with lower immunity and higher morality (van Dyk, et al. 2017:76).

The NDoH Guidelines for Maternity care in South Africa (2015:133) further state that disclosure can also enhance support and adherence to treatment to lower transmission risks to the infant. The non-disclosure status of HIV positive pregnant women may have negative effects on the individual, family and sexual partners (Longinetti, Santacatterina & El-Khatib 2014:1). Due to non-disclosure, loved ones may be infected and become HIV positive, and this may affect them socially and economically as they will absent themselves from work due to ill health. According to the study conducted in Zimbabwe by Chingwaru and Vidmar (2016:29), HIV infection is widely known to be associated with increased neurocognitive impairment which impacts negatively on decision making, functionality, and adherence to treatment, and may point towards reduced productivity due to HIV-related mortality, and loss of productive hours due to HIV-related illnesses.

If the problem is not addressed, the morbidity and mortality of HIV positive pregnant women, and the risk of infection to their partners and children, will increase. This will have an impact on their income, ultimately affecting the economy and increasing the number of child-headed families, resulting in a social crisis (UNAIDS 2014).

This study focused on investigating the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. These barriers of disclosure may be real and undermine the measures to prevent MTCT, re-infections, and adherence to treatment.

1.3 RESEARCH PROBLEM

Despite awareness campaigns about the importance of HIV status disclosure, prevention of the disease, the promotion of safe sex practices, and the provision of HIV counselling and testing in health facilities, the prevalence of HIV/AIDS remains high. Thirty six point seven (36.7) million people were living with HIV globally (UNAIDS 2017). The researcher, in her capacity of midwife working in one of the hospitals in Capricorn district discovered a number of pregnant women who did not disclose their HIV status to their partners. Non-disclosure of HIV positive status to the partner could expose the infant and partner to HIV infection. This prompted the researcher to investigate if there are challenges in disclosing the HIV status to the partner. There were 7.1 million people in South Africa living HIV while 270 000 were newly infected with HIV in 2016 (NDoH 2017). Disclosure of an HIV status to a partner might help to reduce the infection rate, prevent MTCT, and increase adherence to safe sex practices. According to Kiweewa, et al. (2015:1), 62% of their participants did not disclose their status to their partners. In a study conducted in China by Xiao, Li, Qiao, Zhou, Shen and Tang (2015:76) it was revealed that 88.6% of participants did not disclose their status to their partners. According to Mamogobo, et al. (2014:39), 40% of the women participating in their study did not disclose their status to their partners. It appears that there are barriers that prevent pregnant women from disclosing their HIV status to their partners in Limpopo Province.

According to epidemiology in HIV and AIDS in South Africa (NDoH 2015:1), South Africa had the biggest HIV epidemic profile with 19.2% of the adult HIV prevalence in the world in 2015. Considering the high HIV infection rate of the adult population, pregnant women are at risk. Non-disclosure of an HIV positive status to their partners may enhance morbidity and mortality, resulting in economic and social losses. According to Moyer, Igonya, Both, Cherutich and Hardon (2013:65), in their

Kenyan study participants pointed out that non-disclosure had negative consequences as living with a secret was psychologically stressful, leading to isolation, and unwarranted fear as people tend to imagine the worst scenario. In that study, poverty, including insufficient food (because they would be rejected by their partners and asked to fend for themselves) and other urgent material needs were also mentioned as a reason for avoiding status disclosure (Walcott, et al. 2013:5). Mbokane, et al. (2016:16) reported that 88.5% of their respondents experienced emotional turmoil after being diagnosed HIV-positive. Habedi, Nolte and Temane (2015:116) state that HIV-positive pregnant women were afraid to disclose their status and some were rejected by their families due to stigmatisation. The Saving Mothers report 2011-2013 (NDoH 2014) on confidential enquiries into maternal deaths in South Africa indicated that 34.7% of maternal deaths were due to NPRIs which could result in child-headed households. Thus, the researcher was prompted to investigate the perceived barriers of pregnant women's HIV status disclosure to their partners in the Capricorn District, Limpopo Province.

1.4 AIM OF THE STUDY

The aim of this study was to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province, to enhance status disclosure to partners through disclosure education by health care workers.

1.5 RESEARCH OBJECTIVES

The research objectives were to:

- Explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.
- Make recommendations on disclosure education to health care workers performing Voluntary HIV Counselling and Testing (VHCT) to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings.

1.6 RESEARCH QUESTIONS

The following research questions were asked:

- What are the perceived barriers of pregnant women's HIV status disclosure to their partners?
- What recommendations on disclosure education can be made to health care workers performing VHCT to enhance the self-efficacy of these women to disclose their HIV status to their partners?

1.7 THEORETICAL FOUNDATIONS OF THE STUDY

Polit and Beck (2017:124) state that theoretical and conceptual frameworks play several interrelated roles in the progress of science. Theories allow researchers to integrate observations and facts into an orderly scheme. They are efficient mechanisms for drawing together accumulated facts, often from separate and isolated investigations. The linkage of findings into a coherent structure can make a body of evidence more accessible and thus, more useful. Theories and models can guide a researcher's understanding of not only the "*what"* of the natural phenomena but also the "*why"* of their occurrence.

The researcher used the Health Belief Model (HBM) (Polit & Beck 2017:124) as theoretical framework in this study. This model postulates that health-seeking behaviour, which is the need to disclose their HIV status to their partners, is influenced by the presence of a perceived barrier(s) posed by a health problem and the value associated with disclosure of HIV status to their partners. The HBM was developed to change harmful, health-related behaviours (van Dyk, et al. 2017:187).

1.7.1 Research assumptions

The research assumptions were based on the following components of the HBM (Polit & Beck 2017:124):

Perceived susceptibility – is a person's perception that a health problem is personally relevant or that the diagnosis is accurate (Polit & Beck 2017:124). Susceptibility: means that people will not change their behaviour unless they believe that they are at risk, therefore HIV positive pregnant women will not disclose their HIV status to their partners unless they perceive the risk of not disclosing. The HIV positive pregnant women were diagnosed as HIV positive and accepted their diagnosis after an accurate diagnosis was made by the health care workers at the primary health care facilities in the Capricorn District, Limpopo Province.

Perceived severity – Even when one recognises personal susceptibility, action will not occur unless the individual perceives the severity to be high enough to have serious implications (Polit & Beck 2017:124). The respondents will follow the planned programme (which entails disclosure of HIV status, taking ARVs, and adhering to preventive strategies such as consistent condom usage during sexual relations to prevent MTCT of HIV and infections to the partners) if they perceive the seriousness of the condition. The respondents needed to be aware of the impact of non-disclosure of their HIV status to their partners, which can result in MTCT, an increased viral load, and infection of partners (socio-economical influence).

Perceived benefits – are the patient's beliefs that a given treatment will cure the illness or help prevent it (Polit & Beck 2017:124). The respondents may comply with the given treatment (ARVs) if they believe it will prevent MTCT or the treatment will enhance their quality of life. The HIV positive pregnant women needed to know the benefits of disclosing their HIV status to their partners so that their partners will be given treatment which will lower the re-infection rate and result in a lower viral load, adherence to treatment, and getting support from partners.

Perceived costs – are financial implications (Polit & Beck 2017:124). These will determine if respondents have the financial means which will provide confidence to comply with the HIV status disclosure to their partners.

Perceived barriers/challenges – include the complexity, duration and accessibility of the treatment (Polit & Beck 2017:124). Respondents need to be assured of where they will get the treatment and for how long they will be required to take the treatment. Treatment is lifelong, and they need the intention to disclose their status to adhere and comply with treatment. According to literature in the background of this chapter, it seems that some HIV positive pregnant women have barriers/challenges to disclosure of their HIV status to their partners, such as fear of rejection and stigmatisation.

The motivation – is the desire of the patient to comply with the treatment. Respondents need to be motivated enough to be able to comply with the treatment regimen without interruptions (Polit & Beck 2017:124). Support from their partners when the respondents are faced with ill health might assist them to disclose their status to their partners, thus improving compliance to treatment.

The researcher was interested in exploring and describing the perceived barriers of HIV positive pregnant women to disclose their status to their partners. The HBM was applicable in this study as it could be applied to respondents' compliance with HIV status disclosure to their partners and the preventive health care practices of HIV transmission from respondents to their partners and MTCT. Perceived susceptibility might indicate that a health problem exists and that the diagnosis is accurate. The perceived severity of not disclosing an HIV status to partners can result in deterioration of health as physical consequences, stigma, and rejection from their community as social consequences. The benefits of HIV status disclosure might enhance preventive measures such as consistent condom usage, preventing unwanted/unplanned pregnancies, and MTCT. The respondents are to take lifelong treatment (ARVs); therefore, these might enhance status disclosure since the partners will become aware, as the ARVs are taken even after the pregnancy. The respondents may be motivated by ill health to disclose their status as there will be no need to hide their illness and they will need physical, emotional, and financial support from their partners.

1.8 DEFINITIONS OF TERMS

Antigen: is any foreign (or invading) substance which, when introduced into the body, elicits an immune response such as the production of antibodies that react specifically with these antigens (van Dyk, et al. 2017:697). In this study, antigen refers to when HIV enters the pregnant women's bodies to disrupt the normal immune system response to be incapable to fight opportunistic infections.

Barriers: are obstacles, problems, rules or situations that prevent movement or access to certain aspects, that prevent or hinder communication or progress (Hornby 2015:108). In this study, barriers refer to aspects which can be either physical, social, and emotional that prevent HIV positive pregnant women to disclose their positive status to their partners.

Disclosure: is the act of making a secret or new information known or public (Hornby 2015:424). In this study, disclosure will refer to when an HIV positive pregnant woman shares her HIV status with her partner.

Health Belief Model (HBM): the model postulates that health-seeking behaviour is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing it (Polit & Beck 2017:124). In this study, respondents will engage in disclosing their HIV status to their partners when they perceive the following: susceptibility: means that people will not change their behaviour unless they believe that they are at risk therefore HIV positive pregnant women will not disclose their HIV status to their partners unless they perceive the risk of not disclosing. Respondents perceive the HIV diagnosis as correct. Severity: when the respondents recognise personal susceptibility, action will not occur unless they perceive the severity to be high enough to have serious implications. Respondents will be able to disclose their HIV status when they believe that the diagnosis is real and serious enough to cause health-related problems.

Benefits and costs: are the patient's beliefs that a given treatment will cure the illness or help prevent it, and the financial implications thereof. Respondents will be motivated to disclose their status to their partners when there are benefits and they are able to meet the financial needs. The barriers/challenges include the complexity, duration and accessibility of the treatment. The motivation, enabling or modifying factor is the desire to comply with the treatment. When the respondents believe that there are benefits, they have stronger intentions (motivation). Even though obstacles exist, there is greater possibility that they will disclose the HIV status to their partners.

HIV positive status: the HIV positive status refers to the presence of antibodies for the HIV antigen. It indicates that evidence of HIV has been found via a blood test (either HIV antibodies or viral particles, depending on the test used). An HIV-infected person can transmit the HI virus during sexual intercourse, through his or her blood, or during pregnancy, child birth, and breastfeeding (van Dyk, et al. 2017:703). When a person is HIV positive, it means that the individual was exposed to the HI virus. In this study, it refers to pregnant women who tested positive for HIV in the Capricorn District, Limpopo Province.

Mother-to-child transmissions (MTCT): or vertical transmission of HIV from the mother living with HIV to her infant during pregnancy, labour and delivery, or during breastfeeding (van Dyk, et al. 2017:61). In this study, MTCT is the transmission of HIV from the mother to the unborn baby during pregnancy and birth.

Partner: the person that you are married to or having a sexual relationship with (Hornby 2015:1087). In this study, a partner refers to a person who has a sexual relationship with the HIV positive pregnant woman. This could be a spouse or any male partner of the woman, who have a sexual relationship with her.

Perception: is the way you notice things, especially with the senses or the ability to understand, interpret and to be aware of the true nature of the situation, an idea, or a belief (Hornby 2015:1105). In this study, perception refers to how the pregnant women think, understand, interpret and are aware of their HIV positive status and the impact it might have on disclosing their HIV status to their partners.

Pregnancy: is the gestational process; the period of intrauterine development from conception through birth (Davidson, London & Ladewig 2014:8). In this study, pregnancy is the period whereby an HIV positive woman is carrying a foetus from one month until the baby is born.

1.9 RESEARCH METHODOLOGY

The following sub-headings will be discussed under research methodology: research design, setting, population, sample and sampling, sample size, data collection, and data analysis. A more detailed discussion will follow in Chapter 3.

1.9.1 Research design

Research designs are types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research design (Creswell 2014:12). The research design is the plan for obtaining answers to the research questions. In designing studies, researchers select a specific design and identify strategies to minimise bias. The research design indicates how often data will be collected, what types of comparisons will be made, and where the study will take place (Polit & Beck 2017:56). A quantitative research design that is explorative, descriptive, and cross-sectional was used in this study.

1.9.1.1 Quantitative research design

Polit and Beck (2017:741) define ‘quantitative research’ as the investigation of phenomena that lend themselves to precise measurement and quantification, often involving a rigorous and controlled design. This paradigm was chosen due to the sensitivity of the topic; respondents may find it difficult to disclose their status to their partners and therefore might find it difficult to disclose or discuss their HIV status with the researcher.

1.9.1.2 Exploratory research

Exploratory research begins with a phenomenon of interest, but rather than simply observing and describing it, exploratory research investigates the full nature of the phenomenon, the way it is manifested, and other factors to which it is related (Polit & Beck 2017:15). The full nature of the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province was investigated.

1.9.1.3 Descriptive research

Descriptive research entails precise measurement and reporting of the characteristics of the population or phenomenon (Botma, Greeff, Mulaudzi & Wright 2016:50-51). Descriptive research methods are used to report the distributions (or spread) of a sample or population across a wide range of variables (using all four levels of measurement which are: descriptive, association, causation and inferences). The aim of this method was to produce a scope of characteristics of such distributions through frequencies, measures of central tendency, and dispersion (De Vos, Strydom, Fouchė & Delport 2017:251). In this study, the researcher aimed to describe and report with descriptive statistics on pregnant women's perceived barriers of HIV status disclosure to their partners in the Capricorn District, Limpopo Province.

1.9.1.4 Cross-sectional research

Polit and Beck (2017:725) state that a cross-sectional design is a study in which data are collected at one point in time. The information on a specific topic is collected at the same time from the same participants and no identical study will be undertaken after a specific period. The study is limited to a given time period. A cross-sectional design involves obtaining data from a cross-section of the population at a point in time and indicating that the data are from a specific sample (Botma, et al. 2016:113; Polit & Beck 2017:168). HIV positive pregnant women from hospital ARV clinics were involved in the study. A questionnaire was given to the respondents during a specific timeframe, from 1st February to 3rd May 2017, and the information was representative of that point in time.

1.9.2 Study setting

The setting is the physical location and condition in which data collection takes place in a study (Polit & Beck 2017:744). Research can be undertaken in a variety of settings at the specific places where information is gathered and at one or more sites. Some studies take place in naturalistic settings in the field, such as in people's homes, while other studies are conducted in controlled laboratory or clinical settings.

The study was conducted in three hospital ARV clinics based at three hospitals in the Capricorn District, Limpopo Province. Two of these hospitals were in the rural area, while one hospital was in an urban area. Refer to Chapter 3 for more detailed information.

1.9.3 Study population

Quantitative researchers need to clarify the group to whom study results can be generalised, that is, they must identify the population to be studied (Creswell 2014:158). Polit and Beck (2017:739) define ‘population’ as the entire set of individuals or objects having some common characteristics. For this study, the accessible population comprised of the HIV positive pregnant women who were attending ARV clinics at three hospitals in the Capricorn District, Limpopo Province. More detailed information follows in Chapter 3.

1.9.4 Sample and sampling

A sample is a subset or portion of the accessible population identified for the study, while sampling is the process of selecting the subset or portion of the population to represent the accessible population (Botma, et al. 2016:124). The HIV positive pregnant women who were at the ARV clinic, on ART, and who met the inclusion criteria, were invited to participate in the study. The inclusion criteria were: HIV positive pregnant women in the age range of 18-40 years who were attending the ARV clinics at specified hospitals in the Capricorn District during the data collection period, and who were willing to participate in this study. Health records (register and an antenatal card) were utilised to the identify HIV positive pregnant women who had undergone counselling and testing at least one month prior to the study formed part of the respondents. HIV positive pregnant women who had signed an informed consent form took part in the study.

The exclusion criteria were HIV positive pregnant women younger than 18 and older than 40 years of age, and respondents who received their HIV test results less than a month before recruitment to participate in the study. HIV positive pregnant women who did not sign an informed consent form were also excluded from the study.

Non-probability sampling is the selection of sampling units (e.g. respondents) from a population using non-random procedures (such as convenience sampling) (Polit & Beck 2017:736). Purposive sampling is a non-probability sampling method in which the researcher selects participants based on personal judgement about which ones will be most informative (Polit & Beck 2017:741). Non-probability sampling was used and purposive and convenience sampling was applied. In this study, women who were HIV positive and pregnant had a choice to disclose or not disclose their status to their partners. The respondents were selected purposively as they were viewed as experts at being pregnant and HIV positive, and had a choice to disclose or not disclose their HIV status to their partners.

De Vos, et al. (2017:232) define 'convenient sampling' as accidental, availability or haphazard sampling which is utilising respondents that are usually nearest and most easily available for the study. Convenience sampling entails using patients that are available and willing to participate (Polit & Beck 2017:252). In this study, convenience sampling was used. HIV positive pregnant women aged between 18-40 years were invited to participate in the study and were present during the data collection period from 1st February to 3rd May 2017 at the ARV clinic in the three specified hospitals.

The hospitals were purposively and conveniently sampled as they had ARV clinics and the women are referred for high risk antenatal care in hospitals from local clinics/hospitals as they need to book for delivery at district/tertiary hospitals which provide specified services. These hospitals and ARV clinics have large patient numbers with HIV. The researcher selected the three ARV clinics as they were convenient in terms of accessibility, financial viability, and time. All three hospitals were accessible to the researcher and they were financially viable for the researcher to access (geographically close to the researcher).

1.9.4.1 Sample size

According to Botma, et al. (2016:129), the sample size should be calculated at the design stage of the study, as the sample size will influence the feasibility of the study. All HIV positive pregnant women who were willing and available to participate in the study were invited. According to ARV clinic registers, 356 HIV positive pregnant women were seen at the facilities from January to June 2015 (ARV Clinic hospital records 2015). A Raosoft calculator was utilised to calculate the sample size (www.raosoft.com > sample size) of 186. Refer to Chapter 3 for more details.

1.9.5 Data collection methods and procedures

Botma, et al. (2016:131) describe data gathering as the precise and systematic gathering of information to be able to address the research purpose. The goal of data collection in quantitative studies is to achieve consistency in what is asked and how answers are reported, to reduce biases, and facilitate analysis (Polit & Beck 2017:266). In this study, the researcher used a questionnaire as data collection tool. The rationale for using a questionnaire was to achieve consistency in what was asked and to reduce bias. The topic under study was sensitive, therefore, some respondents found it easier to write than to communicate verbally about intimate and personal information with somebody they do not know. Data were collected over 3 months, from 1st February to 3rd May 2017.

The researcher obtained ethical approval from the Higher Degrees Committee, Department of Health Studies University of South Africa (UNISA) (Reference number: HSHDC/484/2015) (Annexure A), and approval was also obtained from Limpopo Department of Health (Annexure C), the three hospital ARV clinic units' managers/facility supervisors (Annexure D), developers of the questionnaire before it was adapted for the study context (Annexure E), and respondents were requested to sign informed consent to ensure voluntary participation (Annexure H).

A pre-test is conducted to refine the instrument by identifying flaws or assessing time requirements (Botma, et al. 2016:284). A pilot test was conducted to identify if the respondents would be able to understand the questions and to assess the time required to complete the questionnaire, which would guide the actual data collection process. In this study, a pre-test was conducted with five HIV positive pregnant women who did not participate in the primary study. These HIV positive pregnant women were randomly selected to participate in the pre-test. Some of the questions were not clear to the respondents. The researcher re-structured the questionnaire with the help of the supervisor and the statistician, and changes were made according to their recommendations. More details are provided in Chapter 3.

During data collection, the researcher visited the ARV clinics from the three selected hospitals from 1st February to 3rd May 2017, and information was provided to potential respondents through information leaflets with the aim and objectives of the study. The HIV positive pregnant women who complied with the inclusion criteria were invited to participate in the study. The researcher adapted a pre-existing instrument, after obtaining permission (Addendum E) from the developers (Deribe, Woldemichael, Wondafrash, Haile & Amberbir 2008:4-7) for the context of this study. The HBM was utilised as theoretical framework for the development of the instrument. A literature review was conducted to ensure that all the relevant aspects were covered in the questionnaire. Structured and open-ended questions were added to the questionnaire to enhance the depth of the data collected. The respondents who were available and willing to voluntarily take part in the study were given self-administered questionnaires by the researcher as no research assistant was involved in the study. The researcher was available to answer questions from the respondents. One hundred and eighty-six (186) respondents received self-administered questionnaires. Out of 186 respondents, 171 completed and returned the questionnaires. One questionnaire was incomplete and discarded. Data from 170 questionnaires (N = 170) was analysed. The response rate was 91.39%, which is high enough to guarantee accurate results.

The respondents who were literate completed the questionnaires on their own in a quiet private room at the ARV clinics. The respondents who were illiterate were assisted by the researcher to complete the questionnaire. The answers that the respondents provided were re-read to them by the researcher to ensure that there was data accuracy. A box was provided for the respondents to post the completed questionnaires and the researcher collected the box on the same day. Additional details will be discussed in Chapter 3.

1.10 VALIDITY AND RELIABILITY

Validity refers to the degree to which an instrument measures what it was intended to measure and reliability refers to the ability of the instrument to provide reliable results. More details will be presented in Chapter 3.

1.10.1 Validity

Validity indicates whether the conclusions of the study are justified based on the design and interpretation (Botma, et al. 2016:174). Polit and Beck (2017:747) define ‘validity’ as a degree to which inferences made in a study are accurate and well-founded; in measurement, the degree to which an instrument measures what it is intended to measure. Validity was ensured by the utilisation of an existing questionnaire which was adapted to include the HBM after a review of relevant literature. The questionnaire was pre-tested with five HIV positive pregnant women aged 18-40 years who were not included in the main study sample. The pre-test enhanced validity as it ensured the clarity of questions. The questionnaire was reviewed by the researcher’s supervisor and the statistician before it was administered. Corrections and adjustments were made in the final questionnaire.

1.10.1.1 Content validity

Content validity refers to the representativeness or sampling adequacy of the content of an instrument (De Vos, et al. 2017:173). Some of the questions were adapted from a previous questionnaire with the permission of the developers as mentioned earlier (Annexure E). The content of the instrument was discussed with field experts to ensure the relevance of the questions to the context of the study. Questions were verified with field experts, through a pre-test, and with the supervisor and statistician before actual data collection. Data were analysed by computer software (SPSS version 24) with the assistance of a statistician. More detail is provided in Chapter 3.

1.10.2 Reliability

Reliability refers to the accuracy and consistency of information obtained in the study (Polit & Beck 2017:160-161). Reliability represents the consistency of the measure achieved. This means that if a valid measuring instrument is applied to different groups under similar circumstances, it should produce similar results (Botma, et al. 2016:177).

Respondents completed the same questionnaire during data collection which facilitated the analysis, comparison, and discussion of the study findings. The researcher collected data at the ARV clinics. The respondents who were illiterate were assisted by the researcher to complete the questionnaire. The answers that the respondent provided were re-read to ensure data accuracy. Stability and equivalence were enhanced as components of the instrument were adapted from previous studies where it was implemented and tested to fit the study context. Refer to Chapter 3 for additional information.

1.11 DATA ANALYSIS

Data analysis is the systematic organisation and synthesis of research data, and in quantitative studies, the testing of hypotheses using those data (Polit & Beck 2017:725). In this research, data were captured and analysed using the SPSS version 24 computer software program, with the assistance of a statistician. Descriptive statistics were used to analyse and describe the data obtained. Open-ended questions were asked at the end of the questionnaire and focused on motivators and barriers/challenges of disclosure, as well as benefits and disadvantages of disclosure. The open ended questions were analysed using thematic coding and provided depth to the quantitative data. Refer to Chapter 3 for more information.

1.12 ETHICAL CONSIDERATIONS

Ethics is a set of moral principles suggested by an individual or group, which is subsequently widely accepted, and offers rules and behavioural expectations about the correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants, and students (De Vos, et al. 2017:114). Botma, et al. (2016:129) state that important issues that should be explored with experimental subjects are that no harm should come to them; that prospective respondents should give their informed consent; that respondents should not be deceived in any way; and that researchers should be competent and responsible. Throughout this study, the researcher observed and applied the ethics pertaining to research.

In this study, the researcher utilised the ethical moral code which includes respect for persons, right to privacy (anonymity and confidentiality), justice, beneficence, respect for human dignity, and informed consent which are applicable during the data gathering phase (Botma, et al. 2016:17). More details follow in Chapter 3.

1.12.1 Permission to conduct the study

According to Polit and Beck (2017:137), researchers are obliged to respect ethical issues when dealing with human beings during their studies. The government establishes rules for researchers to adhere to which are related to the protection of human beings and the prevention of exploitation. The researcher obtained ethical approval from the Higher Degrees Committee of the Department of Health Studies at UNISA (HSHDC/484/2015) (Annexure A). Approval was obtained from Limpopo Department of Health (Annexure C), three hospital managers, and the ARV clinic unit managers (Annexure D). Respondents were requested to voluntarily participate in this study and no incentives or remuneration was provided. The respondents were also given an information leaflet and were requested to sign an informed consent form (Annexure H) to ensure voluntary participation and to indicate that they received the relevant information for the study. Ethical principles that should be applied during research are discussed next.

1.12.2 Ethical principles protecting the respondents

The National Health Research Ethics Council (NHREC) has developed ethical guidelines that need to be adhered to when conducting research using human beings as respondents (Botma, et al. 2016:11-12). The following principles will be covered: privacy, beneficence, justice, confidentiality and anonymity, and respect for human dignity.

1.12.2.1 Principle of privacy

Privacy, in its most basic meaning, is to keep to oneself that which is normally not intended for others to observe or analyse (De Vos, et al. 2017:119). A private room at the ARV clinic away from the public was utilised by the researcher to avoid stigmatisation as this is a sensitive topic. The researcher explained the nature and purpose of the study, and ensured respondents that participation might contribute to better support and education by health care workers relating to HIV status disclosure to partners. To ensure privacy the respondents' names were not mentioned in the final report.

1.12.2.2 Principle of beneficence

The right to beneficence was observed by the researcher. The principle of beneficence is grounded in the premises that a person has the right to be protected from harm and discomfort; one should do good, and above all, no harm (Botma, et al. 2016:20). As the topic under discussion is sensitive, the researcher debriefed each respondent after completion of the questionnaire, to express their feelings and ask questions. There was no respondent who needed to be referred to a psychologist for further support and counselling at the ART clinics. The respondents were provided with a referral option which was free of charge, but they all declined. The researcher's contact details were given to the respondents in the event of further questions, comments, or complaints at a later stage. Respondents were assured that their involvement in this study would not subject them to any form of harm. The respondents were informed of their right to withdraw from the study at any time they wish, without fear of being victimised.

1.12.2.3 Principle of justice

The right to fair treatment includes equitable distribution of benefits and burdens of research (Polit & Beck 2017:141). The respondents who met the inclusion criteria were selected according to fair treatment, irrespective of their race, educational status, creed, or any other socio-economic status. Refer to Chapter 3 for more detailed information.

1.12.2.4 Confidentiality and anonymity

Confidentiality can be viewed as a continuation of privacy, which refers to agreements between persons that limit others' access to private information (De Vos, et al. 2017:119). Botma, et al. (2016:277) state that it is the responsibility of the researcher to prevent data gathered during the study from being linked to individual respondents, divulged or made available to any other person. According to Polit and Beck (2017:719), anonymity is the protection of participants' confidentiality such that even the researcher cannot link individuals with the data provided. Confidentiality was maintained by the researcher by ensuring that the respondents' names were not written on the questionnaires. Raw data was entered into the computer using codes. No names or that of the hospitals appeared in the research report as an HIV positive status is highly confidential. The questionnaires were not made available to anyone who was not directly involved in the study. Those involved signed a confidentiality agreement. Refer to Chapter 3 for more information.

1.12.2.5 Respect for human dignity

Respect for people's dignity is demonstrated by maintaining anonymity and confidentiality (Botma, et al. 2016:17). The following topics will be discussed under respect for human dignity: the right to self-determination, the right to full disclosure, and informed consent.

a) The right to self-determination

De Vos, et al. (2017:116) state that humans should be treated as autonomous agents, capable of controlling their actions. The right to self-determination means that prospective participants can voluntarily decide whether to take part in the study, without risk of prejudicial treatment. It also means that people have the right to ask questions, to refuse to give information, and to withdraw from study if they so wish. The researcher provided the respondents with an information leaflet to read and an informed consent form was signed upon agreement to participate in the study. Respondents were told that participation in the study was not compulsory, and they may terminate at any time if they so wish without losing benefits. The respondents voluntarily completed the questionnaire at the ARV clinics.

b) Right to full disclosure

Polit and Beck (2017:140) state that full disclosure means the researcher has fully described the study, the person's right to refuse participation, the researcher's responsibilities, and the likely risks and benefits. A written information leaflet which was comprehensive regarding the purpose, objectives, and process of the research, was given to the respondents. Refer to Chapter 3 for more details.

c) Informed consent

Respondents were briefed on the purpose of the study and its implications, to be able to make an informed decision on whether to participate or not. Each respondent signed informed consent before completing the questionnaire without being coerced. The respondents' decision to participate or terminate was respected in this study.

1.13 SIGNIFICANCE OF THE STUDY

Evidence from the study should have the potential to meaningfully contribute to nursing practice. The study should be original, but it could also be a replication to answer previously asked questions with greater rigor or with a different population (Polit & Beck 2017:73). Creswell (2014:119) states that researchers often include a specific section of the study for selected audiences that may profit from reading and using the study. A clear rationale for the importance of the study is created. This study investigated the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. The study contributed towards the knowledge on barriers that prevent HIV status disclosure of pregnant women to their partners to enhance health care provision through disclosure education, to limit MTCT, and lower viral load resulting in lower morbidity and mortality.

1.14 SCOPE AND LIMITATIONS OF THE STUDY

The study focused on perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.

1.14.1 Scope of the study

Only HIV positive pregnant women aged 18-40 years who were attending ARV clinics were included in the study. The rationale for including women in the specific age group was that they were of child-bearing age. The HIV positive pregnant women who were attending hospital ARV clinics in the Capricorn District, Limpopo Province, took part in this study. The three hospitals were included based on the scope of the study and the limited resources of the researcher. The findings could be generalised for all HIV positive pregnant women in the Capricorn District, Limpopo Province. The researcher intended that the guidelines could be used by health care workers to address perceived barriers of HIV positive pregnant women to enhance disclosure of their HIV status to their partners during disclosure education. The limitations will be discussed in terms of research, methodological, and theoretical limitations.

1.14.2 Research limitations

Polit and Beck (2017:12) state that a study that uses human beings as instruments through which information is gathered has several limitations: humans are extremely intelligent and sensitive, but fallible tools. The subjectivity that enriches the analytic insights of skilful researchers can yield trivial and obvious findings among less competent ones. The generalisability of findings from constructivist inquiries is an issue of potential concern.

Methodological limitations can limit the credibility of the findings and restrict the population to which the findings can be generalised. Methodological limitations result from such factors as an unrepresentative sample, weak design, single setting, limited control over treatment implementation, measurement instruments with limited reliability and validity, limited control over data collection, and improper use of statistical analyses. The data collection was done from a single setting; therefore, study respondents' representation may be limited. The study respondents included only HIV positive pregnant women on ARVs; their partners were not included and their views were therefore not heard.

Theoretical limitations restrict the abstract generalisability of findings and are reflected in the study framework and the conceptual and operational definitions of the variables. Theoretical limitations might include (1) a concept that lacks clarity of definition in the theory used to develop the study framework, (2) the unclear relationships among some concepts in the theorist's work, (3) a study variable that lacks a clear link to a concept in the framework, and (4) an object, question, or hypothesis that lacks a clear link to a relationship expressed in the HBM (Polit & Beck 2017:124). The study respondents may be unwilling to share details about their private life with anyone, thus a small number of people may participate in the study. Therefore, the researcher used a questionnaire as data collection tool rather than interviews during data collection. The researcher encouraged respondents to participate voluntarily; no one was coerced. One hundred and eighty-six (186) respondents were given questionnaires, 171 completed and returned the questionnaires, and one was incomplete and discarded. The response rate was 91.39%.

1.15 STRUCTURE OF THE DISSERTATION

This study is organised into five chapters as outlined next:

Chapter 1: Orientation to the study

This first chapter provides a general overview of the study. It contains background to the research problem, problem statement, purpose of the study, research objectives, research questions, theoretical framework, definition of key concepts, research design and methodology, validity and reliability, data collection, data analysis methods, ethical considerations, significance of the study, scope and limitations. It also offers an outline of the chapters.

Chapter 2: Literature review

The second chapter offers insight into similar studies conducted by other researchers. The chapter outlines the historical background of HIV, previous research conducted on epidemiology of HIV, signs and symptoms of HIV, diagnosis of HIV, treatment of HIV during pregnancy, patient counselling and adherence, and HIV disclosure. The benefits, the motivating/enabling factors, factors influencing disclosure, impact/consequences of disclosure, and the predictors of HIV status disclosure are also reviewed.

Chapter 3: Research design and methodology

This chapter presents the research design and methods used in the study, validity and reliability, and ethical considerations.

Chapter 4: Analysis, presentation and description of the research findings

In Chapter 4, data management and analysis, and the presentation and description of the research findings are presented.

Chapter 5: Findings, conclusions, limitations and recommendations

This chapter presents interpretations of the research findings, literature synthesis, conclusions, recommendations, contributions of the study, and research limitations.

1.16 SUMMARY

This chapter provided a general overview of the study, followed by a brief explanation of what prompted the researcher to undertake the study. The research problems, the aim of the study, and the significance of the study were discussed.

The definition of key concepts, the foundation of the study, research design, research methods, validity and reliability, ethical considerations, the scope and limitations of the study were clarified. Chapter 2 presents a detailed review of literature.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

A literature review is defined as a critical summary of research on a topic of interest, often prepared to put a research problem in context (Polit & Beck 2017:733). Creswell (2014:31) also defines a literature review as a means of locating and summarising studies on a topic which may include conceptual articles or opinion pieces that provide frameworks for thinking about the topics. The following topics will be discussed in this chapter: the historical background of HIV, the epidemiology of HIV, signs and symptoms, diagnosis of HIV, the management of HIV, patient counselling and adherence, HIV disclosure, the benefits, motivating factors, as well as the barriers, the impact and predictors of HIV status disclosure.

According to Polit and Beck (2017:54), quantitative research is typically conducted in the context of previous knowledge. To contribute new evidence, quantitative researchers strive to understand existing evidence. A thorough literature review provides a foundation on which to base new evidence and is typically conducted before data are collected. The literature review will also assist the researcher to identify a theoretical or conceptual framework for the study, as well as appropriate study methods and instruments or tools to measure the study variables.

The following keywords were used by the researcher during the literature review: barriers, pregnancy, disclosure, HIV status, partners, and the HBM. Relevant research articles from Science Direct, Sabinet and EBSCO Host which are related to the topic under study were downloaded by the researcher with the assistance of a subject librarian from UNISA. The researcher used available literature to support the study. Information was obtained from journals, articles and books, government circulars/reports, grey sources, health service documents, and websites. The literature search focused on the years 2013 – 2018. One hundred and ninety-seven (197) documents related to the topic under study were retrieved both in quantitative and qualitative studies, and ninety-nine (99) relevant documents were utilised. Other research documents were not used because they were not applicable to the topic. The study targeted pregnant women diagnosed as HIV positive and attending ARV clinics. The literature review process focused on both South Africa and the global context of HIV status, pregnant women's disclosure to their partners, and the benefits and factors preventing disclosure/barriers of disclosure.

The questionnaire used to collect data was developed from the literature reviewed as well as the HBM, which included the following aspects: The socio-demographic characteristics, sexual and reproductive health information, motivating and enabling factors, challenges/barriers of disclosure, and the predictors of HIV status disclosure. The open-ended questions focused on the motivators and challenges/barriers, benefits, and disadvantages of HIV status disclosure. The mode of HIV transmission in this study is mostly through exposure to infected blood, MTCT, and unprotected sexual intercourse. The theoretical framework identified for this study is the HBM (Polit & Beck 2017:124), which focuses on patient compliance and preventive health care practices. The model postulates that health-seeking behaviour is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat (Polit & Beck 2017:124). The researcher used the concepts of the HBM in conjunction with the insights about factors that influence disclosure from literature to plan the study and develop the questionnaire. This study was conducted to explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province to enhance status disclosure to partners through disclosure education by health care workers. Perceived susceptibility relates to a person's perception that a health problem is personally relevant or the diagnosis is accurate.

2.2 HISTORICAL BACKGROUND OF AIDS

In 1981, the first AIDS cases were documented in United States of America (USA) in the form of pneumonia caused by a parasite called pneumocystis carinii, cytomegalovirus infections, thrush, and Kaposi sarcoma in homosexual men. Soon after, a new disease was identified in Central Africa which undermined the immune system and caused diarrhoea and weight loss in heterosexual people (van Dyk

2013:4). In 1983, it was discovered that the disease was caused by a virus known as Lymphadenopathy associated virus (LAV) and human T. Lymphotropic virus type III. In 1983 in France HIV was found to be underlying the course of illness. In 1984, Robert Gallo of the USA also discovered that HIV causes AIDS. After this discovery, the WHO started collecting statistics on HIV/AIDS prevalence, incidence, and spread worldwide (van Dyk 2013:4-6).

In 1990, there were some theories that AIDS had been present in Central Africa for centuries but not identified due to a lack of sophisticated medical facilities to diagnose the disease. It was discovered that HIV (the human virus) was related to SIV (simian immunodeficiency virus) found in primates. There was a possibility that different strains of SIV (associated with different species of monkeys and apes) had crossed the species barrier to humans at different times, causing strains of HIV (van Dyk, et al. 2017:7). The researchers discovered that an ancestor of HIV-1 group M had been transmitted from a chimpanzee (pan troglodytes) which occurred sometime around the 1930s in equatorial West Africa where primates were often hunted for bush meat as indicated by van Dyk, et al. (2017:8). The virus was probably transmitted from the chimpanzee to the hunter when he was bitten or cut while hunting or butchering the animal (van Dyk, et al. 2017:7; avert.org; Simelela & Venter 2014:249).

In 1996 the spread of HIV peaked with an estimated 3.5 million new infections worldwide. According to UNAIDS (2016:2), the global AIDS epidemic was 2.1 million new HIV infections in 2015; a reduction of 1.4 million new HIV infections globally.

According to the WHO (2005), HIV infection in Swaziland was identified for the first time in 1986 and the first AIDS case was recognised in 1987 (WHO 2005). The number of persons living with HIV and AIDS increased rapidly throughout the population. In 2017, Swaziland had the highest HIV prevalence in the world despite its small population size, with 27.2% of the adult population living with HIV (NDoH 2017). Eight-thousand, eight hundred (8 800) people in Swaziland were newly infected with HIV and 3 900 people died of an AIDS-related illness in 2017 (NDoH 2017:1). In 2016, 220 000 adults and children were living with HIV in Swaziland. Women aged 15 and over living with HIV totalled 120 000, while 76 000 men aged

15 years and over were living with HIV. In the context of the entire population, 31% of all women were living with HIV, compared to 20% of men. Children aged 0-14 years living with HIV amounted to 15 000 (NDoH 2017:2).

In South Africa, the first person with AIDS was diagnosed in 1983 and by 1985 all blood products were screened for HIV. The number of pregnant women who were HIV positive in South Africa increased from 4.3% in 1994 to an estimated 17% in 1998 (van Dyk, et al. 2017:12). In 2010 the provision of ARV treatment to special groups (such as pregnant women and patients with HIV/TB co-infections) was implemented by the South African Department of Health. Consequently, new clinical guidelines described how HIV and AIDS in adults, adolescents and children should be managed, and guidelines for the prevention of MTCT of HIV were implemented in 2002 (NDoH 2015). As from 2015, South Africa started treating people who were HIV-infected according to WHO guidelines adopted in 2013 by starting ARV treatment at CD4 cell counts of less than 500 cells/mm^3 (instead of CD4 cell counts of less than 350 cells/mm^3 used previously). On 10 May 2016, the South African Department of Health removed the CD4 cell count as an eligibility criterion for an HIV positive person to enrol for ARV treatment. South Africa’s ARV programme is currently the largest in the world (van Dyk, et al. 2017:14), with the South African Department of Health providing treatment for HIV positive people. These people should take responsibility in the fight for preventing new infections and MTCT by disclosing their HIV status to their partners.

The historical background provided brief information related to the origin of HIV infection to mankind. The next section will offer an overview of the global epidemiology of HIV.

2.3 EPIDEMIOLOGY OF HIV

According to the WHO (2018), epidemiology is the study of the distribution and determinant of health-related states or events (including disease), and the application of this study to the control of diseases and other health problems. The incidences, distribution (who, when and where), and determinants of illness will be discussed. The global, African, Southern African, South African, and Limpopo areas will be covered.

2.3.1 Globally

Figure 2.1 indicates that in 2016, 360 000 people in the Eastern Mediterranean were living with HIV, 1 500 000 in the Western Pacific, 2 400 000 in Europe, 3 300 000 Americans, South-East Asia 3 500 000 and 25 600 000 Africans were infected with HIV (UNAIDS 2016). The African continent is the most affected by the HIV epidemic.

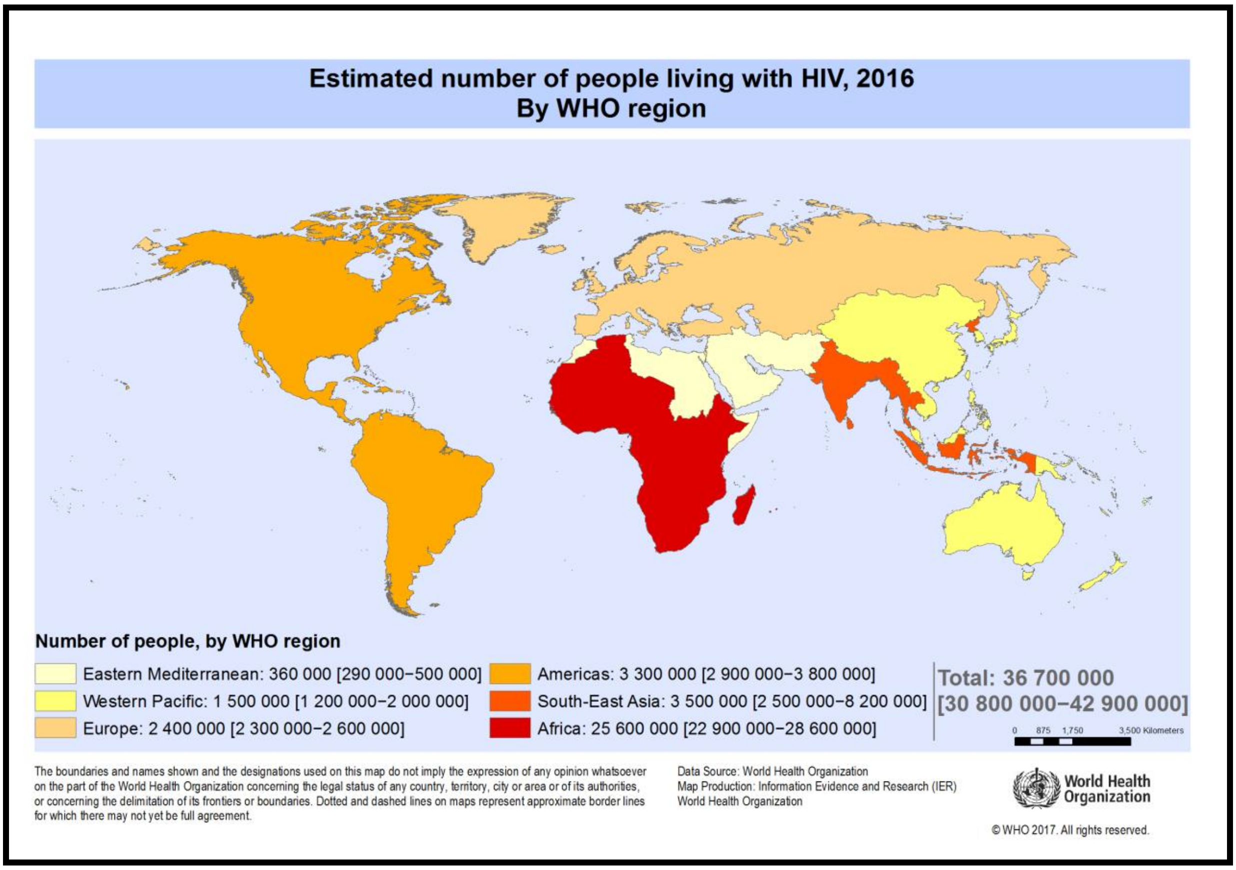


Figure 2.1 Epidemiology of HIV (Source: UNAIDS 2016)

UNAIDS (2016:3) reported that globally, in 2015, 36.7 million people of all ages were living with HIV, 34.9 million were adults, 17.8 million were women, and 1.8 million were children under 15 years. There were 2.1 million people who were newly infected with HIV, 1.9 million were adults, and 150 000 were children under 15 years in 2015 (UNAIDS 2016:3). One point one (1.1) million AIDS-related deaths occurred in 2015; 1 million were adults, while 110 000 were children under 15 years (UNAIDS

2016:3). It is evident that a greater percentage of women than men (17.1 million) are living with HIV in the world, thus women are encouraged to disclose their status to their partners.

The UNAIDS report (2015) further reported AIDS-related deaths of children below 15 years in 2014 as follows: North America, Western and Central Europe were <200, Eastern and Central Europe were <1000, Middle East and North Africa 1200, Asia and the Pacific were 13 000, Caribbean were <1000, Latin America was 1800, Sub-Saharan Africa were 130 000. An estimated 150 000 children below 15 years died from AIDS in 2014. It is evident that 86.6% of children from the Sub-Saharan Africa, who were younger than 15 years old, died from AIDS in 2014 (UNAIDS 2015).

According to UNAIDS (2017:12), the global summary of the AIDS epidemic in 2016 was: of 36.7 million people living with HIV, 34.5 million were adults, 17.8 were women, 16.7 million were men, and 2.1 million were children under 15 years. There were 1.8 million people newly infected with HIV; 1.7 million were adults, and 160 000 were children under 15 years in 2016 (UNAIDS 2017:12). One (1) million AIDS-related deaths were reported in 2016; 890 000 were adults, and 120 000 were children under 15 years (UNAIDS 2017:12). The global epidemiology of HIV indicates that AIDS-related deaths of children (<15 years) is rising.

2.3.2 Africa

In 2015 the Western and Central African region reported that 6.5 million adults and children were living with HIV, 410 000 adults and children were newly infected with HIV, and there were 330 AIDS-related deaths of adults and children (UNAIDS 2016:4). According to UNAIDS (2017:14), in 2016 the Western and Central African region reported 6.1 million adults and children living with HIV, 370 000 adults and children were newly infected with HIV, and there were 310 AIDS-related deaths of adults and children (UNAIDS 2016:4). Although there is a reduction in the number of newly infected people with HIV, this is still a concern because of the effects it has on the population at large.

2.3.3 Southern Africa

The burden of the HIV epidemic varies considerably from country to country and among regions, with Sub-Saharan Africa being the worst affected region in the world; nearly 70% of the world HIV infections occur in this region, with women and children bearing the brunt of the disease (van Dyk, et al. 2017:9). The Eastern and Southern Africa regions had 19 million adults and children living with HIV in 2015 out of 36.7 million people globally living with HIV (UNAIDS 2016). In 2016, Sub-Saharan Africa was severely affected; nearly one in every 25 adults (4.2%) was living with HIV, accounting for nearly two-thirds of people living with HIV worldwide. South Africa had the highest profile of HIV in the world, with an estimated 7 million people living with HIV in 2015 (UNAIDS 2016). In the same year, there were 380 000 new infections, while 180 000 South Africans died from AIDS-related illnesses.

In Swaziland between 1992 and 2010, HIV prevalence among pregnant women increased from 4% to 41% (NDoH 2016:4). As a result, PMTCT was scaled up and viewed as a vital entry point for accessing HIV services for the entire family. Some improvement has been seen, with HIV prevalence among this group standing at 37% in 2013 (Department of Health Swaziland (NDoH 2016:4). In 2015, less than 500 children (aged 0-14 years) were newly infected with HIV, compared to 1 600 in 2010. According to Swaziland’s Ministry of Health (2016) 95% of pregnant women living with HIV received ARV treatment. Around 64% of children (aged 0-14) living with HIV were receiving ARV treatment (Department of Health Swaziland (NDoH 2016:4).

According to the Zimbabwe Demographic Health Survey (NDoH 2015:276), the percentage of children with at least one deceased parent who was HIV positive increases steadily from 1.5% among children age 0-4 years, to 4.5% among children age 5-9 years, and 7.0% among children age 10-14 years. Children whose mothers have HIV are more likely to be HIV positive themselves than children whose mother is HIV negative. Among children of HIV positive mothers, 6.4% of children aged 0-4 years, 10.7% of children aged 5-9 years, and 8.8% of children aged 10-14 years are HIV positive themselves. In contrast to South Africa, Zimbabwe had steady increases of HIV positive children. Unless women disclose their HIV status to their partners, MTCT will not decrease.

According to the Zimbabwe Demographic Health Survey (NDoH 2015:247), young women have sexual relationships with men who are considerably older. This practice contributes to the spread of HIV and other STIs because a younger, uninfected partner having sex with an older, infected partner can be infected with the virus. Seventeen percent (17%) of young women aged 15-19 years had sexual intercourse in the past 12 months with a man 10 or more years older than them (Zimbabwe Demographic Health Survey (NDoH 2015:247).

The Demographic Health Survey in Zimbabwe (2015:277) concurs with the UNAIDS (2016) report which indicates that among young women, HIV prevalence increases steadily with age, from 2.7% of women aged 15-17 years to 13.9% of women aged 23-24 years. Among young men, HIV prevalence holds steady at around 2.5% until the age of 23-24 years, when it increases to 6.0%. The sooner health professionals engage in health awareness for young adults, the sooner effective results on the disclosure of HIV status and prevention of unwanted pregnancies, re-infections, utilisation of condoms, safe infant feeding, and adherence to ARV therapy can be achieved.

UNAIDS (2016) global, the Sub-Saharan region, and Zimbabwe health reports are consistent with the South African report which also found that in 2012, HIV prevalence among South African women was nearly twice as high as for men. Rates of new infections among women aged 15-24 years were more than four times greater than that of men the same age, and this age group accounted for 25% of new infections in South Africa (UNAIDS 2016).

2.3.4 South Africa

UNAIDS (2016) reported that 7 million South Africans were living with HIV in 2015, 390 000 had new infections, and 180 000 AIDS-related deaths were reported. Five thousand (5 000) children aged 0-14 years had new HIV infections while 4.1 million South African girls and women were living with HIV in 2015 (UNAIDS 2016). In 2016, 7.1 million South Africans were living with HIV, 270 000 had new infections and 126 755 AIDS-related deaths were reported (UNAIDS 2017; STATS SA 2017:7). Disclosure of HIV may reduce the number of people living with HIV in South Africa.

MTCT or vertical transmission of HIV from the mother to the child is one of the major causes of HIV infection in children (van Dyk, et al. 2017:61). The majority (90% to 95%) of young children with HIV infection contracted the infection through MTCT. Unless preventive measures are taken (such as ARV therapy, safe delivery techniques, safe infant feeding, and disclosure of HIV status to partners), children born from HIV-infected women in Africa are likely to be infected (van Dyk, et al. 2017:61). According to van Dyk, et al. (2017:61) MTCT of HIV has reduced from 70 000 babies born to HIV-positive women in 2004, to less than 7 000 in 2015. Great strides have been made in the PMTCT of HIV, with coverage of HIV testing of pregnant women now being close to 100% (NDoH 2015). PMTCT is offered in almost all health facilities in South Africa (98%), thus, the percentage of HIV-positive pregnant women receiving ARV treatment to reduce MTCT which has steadily increased from 83% in 2009 to 87.1% in 2012, should decline. MTCT decreased to 2.7% in 2011 (NDoH 2015; Barron, Pillay, Doherty, Sherman, Jackson, Bhardwaj, Robinson & Goga 2013:71). HIV status disclosure enables women to make proper arrangements for safe delivery, safe feeding options, and administration of prophylactic treatment to their babies to prevent MTCT.

In 2013, an estimated 360 000 South African children aged 0-14 years were living with HIV (NDoH 2016). From 2002 to 2012, unlike the report on Zimbabwe's HIV status, the prevalence declined among children, mainly due to PMTCT programmes. The scaling up of ART has reduced child mortality by 20% (UNAIDS 2016). More than 2.3 million children in South Africa were orphaned by HIV and AIDS in 2015 (UNAIDS 2016). Orphans are particularly vulnerable to HIV transmission; they are often at risk of being forced into sex or have sex in exchange for support, and they also become sexually active earlier than other children (UNAIDS 2016). The impact of non-disclosure of HIV status to partners resulted in an increase in viral load and had an effect on the children, as some parents died due to AIDS-related conditions. It is beneficial to disclose an HIV status to adhere to preventive measures of MTCT, and improve one's health and that of the partner.

The Saving Mothers' Report 2011-2013 (NDoH 2014:v) clearly identified that there are three conditions that contribute to the majority of preventable maternal deaths in South Africa namely: NPRI, obstetric haemorrhage, and hypertension. NPRIs and

HIV are the main cause of maternal deaths related to infections which account for 53.47% of deaths (NDoH 2014:v). A lack of antenatal care prevents the mother from getting information on safe infant feeding, prevention of sexual infections, and PMTCT therapy. The preventive measures can be achieved if the HIV positive pregnant woman discloses her status to her partner.

2.3.5 Limpopo Province

The Limpopo Provincial AIDS Council's (2016) annual progress report of 2014/015, report the prevalence of HIV for people 2 years and older as follows: from 9.8% in 2002 to 9.4% in 2012. The Capricorn District recorded HIV prevalence rates of 21.1%. This is higher than the provincial average of 20.3% in 2013 (Department of Health (NDoH) 2016:7-8).

In the epidemiology of HIV, the impact of HIV on the entire population has been outlined from Eastern Mediterranean, Western Pacific, Europe, America, South-East Asia, to Sub-Saharan Africa and South Africa. The next section will discuss the signs and symptoms of HIV.

2.4 SIGNS AND SYMPTOMS OF HIV

The signs and symptoms of HIV according to the WHO (2007:11) include four clinical stages: Clinical stage 1 involves no HIV symptoms and is called an asymptomatic latent stage. A person may infect the partner unknowingly. There may be persistent generalised lymphadenopathy on the neck, below the jaw, and armpits. At this stage, there are two types namely the rapid and the slow progressors. The rapid progressors denote people who progress fast and develop AIDS sooner, while the slow progressors remain without any manifestations of clinical disease (van Dyk 2013:71-72; van Dyk, et al. 2017:86-98; NDoH 2015:123).

Clinical stage 2 is characterised by minor symptoms of HIV disease with the following manifestations: moderate, unexplained weight loss up to ten percent (10%) of measured body weight, recurrent respiratory tract infections, herpes zoster, recurrent oral ulcers, angular chellitis which are cracks or splits of the lips and corners of the mouth, seborrhoeic dermatitis which is an itchy scaly skin condition which affects the scalp, face, upper trunk and perineum, popular pruritic eruptions that occurs in the legs, and fungal nail infections of the fingers which are painful, red and swollen nail beds (van Dyk 2013:71-72; van Dyk, et al. 2017:91; NDoH 2015:123).

Clinical stage 3 is the major symptomatic stage where the immune system continues to deteriorate. It gives rise to opportunistic infections caused by micro-organisms that are not pathogenic in a healthy immune system. This stage is characterised by severe unexplained weight loss, unexplained chronic diarrhoea for longer than one month, unexplained fever or night sweats for longer than one month, oral candidiasis, pulmonary tuberculosis (TB), severe bacterial infections such as pneumonia, meningitis, pleural effusion, pyomyositis, and bacteremia (van Dyk 2013:71-72; van Dyk, et al. 2017:91; NDoH 2015:123).

Clinical stage 4 is the last stage with the most severe symptoms. This is the AIDS defining stage which is characterised by more persistent and unbearable opportunistic conditions and cancers, as the immune system fails. The signs and symptoms include HIV wasting syndrome of more than 10% of body weight, plus diarrhoea lasting for more than one month, or unexplained prolonged or intermittent fever for one month or more. Bacterial pneumonia, chronic herpes simplex viral infection, pneumocystis jiroveci pneumonia (PCP), oesophageal candidiasis, extra-pulmonary tuberculosis, Kaposi sarcoma, cytomegalovirus (CMV), toxoplasmosis protozoal infection of the brain which is characterised by fevers, headaches, focal neurological signs, and confusion. Cryptococcal meningitis presents, which affects the central nervous system with the following: fever, severe headache, nausea, vomiting, neck stiffness, mental status changes and seizures. HIV encephalopathy is characterised by memory loss, poor concentration, tremors, headaches, confusion, loss of vision and seizures (WHO 2007; van Dyk 2013:71-72; van Dyk, et al. 2017:91; NDoH 2015:123-125).

The signs and symptoms guide health care workers with information for proper diagnosis and staging of the HIV infection. The next section will explain how HIV can be diagnosed and how the CD4 cell count assists in the staging of disease progression.

2.5 DIAGNOSIS OF HIV

According to HBM (Polit & Beck 2017:124), perceived susceptibility is a person’s perception that a health problem is personally relevant or that a diagnosis is accurate. Therefore, the diagnosis process and accuracy is vital to enhance perceived susceptibility. In this study, HIV positive pregnant women who were diagnosed more than one month before data collection took place were included in the sample, while those who were diagnosed less than a month before data collection were excluded from the sample, to allow them to accept their status and disclose to their partners.

In South Africa, pregnant women are encouraged to visit the health care workers as soon as they suspect pregnancy for complete assessment of gestational age and risks. One of the assessments during pregnancy is to screen for HIV, to initiate measures to prevent MTCT, and to provide appropriate treatment, care and support to their children and family. Pregnant women are encouraged to use condoms to prevent status conversion. Condom use can be achieved more successfully if a woman has disclosed her HIV status to her sexual partner, as the reasons for condom use are linked to a decrease in the viral load and prevent transmission (NDoH 2016:109).

According to a study conducted in Kenya by Nyandat and van Rensburg (2015:55), a determinant of disclosure is the duration of status awareness. Women who are aware of their status for a longer period are more likely to disclose their HIV status. The longer the duration since the diagnosis, the higher the ability to disclose the HIV status to the sexual partner (Genet, et al. 2015:5). A shorter period of HIV diagnosis leads to a greater likelihood of non-disclosure of the positive status to the partner.

Unless the HIV positive pregnant women perceive that a health problem is relevant, and the diagnosis is accurate, disclosure of HIV status to the partner may be unlikely. It is the responsibility of the health care workers to counsel HIV positive pregnant women to acknowledge that a health problem exists (HIV positive status). Information on HIV status disclosure to their partners needs to be shared with respondents to facilitate the prevention of MTCT, to enhance adherence to treatment regiments, and to prevent re-infections.

The Guidelines for Maternity Care in South Africa (NDoH 2015:132) presents the HIV diagnosis process as follows: pre-counselling is done by health care workers in a private room at the primary health care facilities after verbal consent was provided by the pregnant woman, who proceeds to consent in writing. A rapid test is performed on a finger prick sample of blood. If the test is positive, a second rapid HIV test – using a test kit from a different supplier – will be performed on a second finger prick sample. If both tests are positive, the health care workers will confirm that the woman is HIV positive. If the first rapid test is positive and the second rapid test is negative, then a laboratory Enzyme-Linked Immunosorbent Assay (ELISA) test is performed on a venipuncture blood sample. Positive results will confirm the diagnosis. Post-test counselling is offered to the women irrespective of the outcomes of the result; that is, reactive (having HIV antibodies/positive) or non-reactive (not having HIV antibodies/negative). A woman with confirmed positive results is then clinically staged according to the signs and symptoms, and blood is taken for CD4 cell count and serum creatinine (NDoH 2015:79, 132). The CD4 cell count is the laboratory test used to estimate the level of immune deficiency in HIV-infected individuals by counting the CD4 cells. These cells play an important role in keeping the immune system healthy. When an HIV-infected person has > 500 cells/mm3 CD4 cell count, it is regarded as (asymptomatic) Stage 1. Stage 2 is characterised by mild symptoms of HIV with a CD4 cell count of between 350-499 cells/mm3. Stage 3 is characterised by advanced symptoms of HIV with a CD4 cell count of between 200-349 cells/mm3. Stage 4, which is the last stage according to the WHO clinical staging, manifests with severe symptoms of HIV diseases, with a CD4 cell count fewer than 200 cells/mm3 (van Dyk, et al. 2017:88).

There is a relationship between a person’s viral load and CD4 cell counts whereby the higher the viral load, the lower the CD4 counts, because the virus destroys the CD4 cells. A lower viral load is reciprocated by a higher CD4 cell counts as there are fewer viruses in the blood and the immune system gets a chance to increase CD4 cells (van Dyk, et al. 2017:84). The health care workers should offer disclosure education to HIV positive pregnant women to disclose their HIV status to their partners soon after diagnosis to promote adherence to treatment and to lower the viral load (Refer to Section 2.7). Early diagnosis may enhance effective management and treatment of HIV infections.

2.6 TREATMENT OF HIV

ART is lifelong according to the national ART programme (UNAIDS 2016:5). In 2015, the WHO released guidelines recommending that people living with HIV be offered ART immediately following diagnosis regardless of CD4 counts. South Africa began implementing this recommendation in 2015 (UNAIDS 2016:5). The HIV positive pregnant woman needs to take treatment every day without failure for proper functioning of the treatment (to supress the viral load below undetectable levels of available assays < 50 copies/ml) (van Dyk, et al. 2017:8). The woman also needs to adhere to safe sex practices by using condoms to prevent re-infections, she must prepare for safe delivery and safe feeding options, and prophylactic treatment for the baby. This can be achieved if the pregnant woman can disclose her HIV status to her partner to ensure support and to enhance adherence to treatment.

The ART regimen for HIV positive pregnant women includes: Tenofovir/ Emitricitabine/Efavirenz as a FDC (NDoH 2016:110). If tuberculosis (TB) is diagnosed, the HIV positive pregnant woman will be commenced with ART after it is clear that TB symptoms are improving and that TB therapy is tolerated (van Dyk 2013:116). TB treatment can only be successful if the patient adheres to the treatment by taking a complete and uninterrupted course of the drug therapy (NDoH 2015:116; van Dyk, et al. 2017:113). Adherence to treatment is enhanced when the HIV positive pregnant woman discloses her status to her partner as she will receive emotional and financial support and will not have to hide her treatment. The ART regimen will suppress the viral load to an undetectable level, while the immunity of the HIV positive pregnant women will improve. This will reduce MTCT of HIV if the woman has disclosed her status to her partner, as adherence will improve and transmission to her partner will be prevented.

Table 2.1 provides a summary of ART regimens that are available in South Africa which include: drug, dosage, side effects, and contra-indications (van Dyk, et al. 2017:148-149). There are four classes of ARV drugs that interfere with the viral enzymes and one class that inhibit entry into the host cell. These are nucleoside and nucleotide reverse transcriptase inhibitors and non-nucleoside reverse transcriptase inhibitors, which interrupt the lifecycle of HIV by interfering with the reverse transcriptase enzyme during the early replication of the virus. Protease inhibitors inhibit the creation of new viruses by “paralysing” the protease enzyme. Integrase inhibitors interfere with the integrase enzyme and prevent HIV DNA to integrate into the nucleus of the CD4 cell. The virus will be unable to replicate. Entry inhibitors stop HIV from entering the host cell by affecting the interaction between the virus and the cell (van Dyk, et al. 2017:148-149).

Table 2.1: Guidelines for HIV treatment

DRUG	DOSE	SIDE EFFECTS	CONTRA-INDICATIONS
Tenofovir (TDF)	300mg daily	Bone density reduction, flatulence, nausea, diarrhoea, abdominal discomfort, asthenia, acute/chronic renal insufficiency, Fancony syndrome	Serum creatinine of >85µmol/L
Emitricitabine (FTC)	200mg daily	Severe skin and hypersensitivity reaction	
Lamivudine (3TC)	300mg daily	Headache and dry mouth	
Nevirapine (NVP)	200mg daily X14 days then 200mg twice daily	Hepatitis, hepatotoxicity, rash, hypersensitivity reaction, Stevens-	Avoid NVP if CD4 count is >250 cells/µL for women and >400 cells/µL for

DRUG	DOSE	SIDE EFFECTS	CONTRA-INDICATIONS
		Johnsons syndrome	men
Efavirenz (EFV)	600mg at night (400mg <40kg)	Hepatitis, persistent central nervous system toxicity (such as abnormal dreams, depression or mental confusion)	Active psychiatric illness present
Lopinavir/Ritonavir	50mg (2 tabs twice daily), preferably taken with food	Diarrhoea, nausea & vomiting, dyslipidaemia, elevation in liver function tests, test perversion	
Zidovudine (AZT)	300mg daily	Nausea, anaemia, neutropenia, myopathy, lipoatrophy, or lipodystrophy, lactic acidosis or severe hepatomegaly with steatosis	Avoid is severe anaemia (Hb<8 or <7 g/dl in pregnant women)
Stavudine (D4T)	Discontinue use	Replace with TDF	

Source: NDoH 2014:75-78; van Dyk, et al. 2017:148-155

For women of child-bearing age who are not on reliable contraception (not using dual contraception) and those who are pregnant, Nevirapine is preferred rather than Efavirenz as Efavirenz is teratogenic to the foetus, especially in the first trimester (van Dyk 2013:113-116). The first line of treatment for pregnant and breastfeeding women, as well as all other adults as recommended by the WHO (NDoH 2015:89-91), and implemented by the South African Department of Health consists of two nucleoside and nucleotide reverse transcriptase inhibitors and non-nucleoside reverse transcriptase inhibitors. Regimens that include FDCs that are taken only once daily are preferred. The favoured regimen used in the public sector for first line treatment is: TDF (tenofovir) + 3TC (lamivudine) or FTC (emtricitabine) + EFV (Efavirenz) (van Dyk, et al. 2017:155).

First line regimen includes: Tenofovir (TDF) plus Lamivudine plus Efavirenz. If a patient is contraindicated to Tenofovir due to renal disease, AZT plus 3TC and EFV or NVP can be given (van Dyk 2013:113-116).

Second line regimen includes: Failing in AZT based first line regimen may be given Tenofovir plus 3TC plus Lopinavir. Failing TDF based first line regimen may be given AZT plus 3TC and Lopinavir (van Dyk 2013:113-116).

Salvage therapy: Failing any second line regimen will require specialised care. Therefore, the patient will be referred to a specialist. Unless there are some side effects on the drugs in the first line regimen, drugs prescribed during pregnancy may be continued for life (van Dyk 2013:113-116; NDoH 2015:49-50; NDoH 2016:110-115).

Counselling on treatment adherence needs to be given to pregnant women so that the desired outcomes can be achieved. The next section that follows will be counselling and pregnant women’s adherence.

2.7 PATIENT COUNSELLING AND ADHERENCE

According to van Dyk (2013:121), an adherence level of at least 90% is necessary to sufficiently suppress the virus to avoid risks of maturation and to prevent the development of drug resistance. The adherence level can be achieved when HIV positive pregnant women disclose their HIV status to their partners and the viral load is suppressed to an undetectable level. “Undetectable” means that the viral load in the blood is lower than the bottom limit of detection for a particular test that is being used (van Dyk 2013:121). An undetectable viral load does not mean that the person is no longer infected with HIV. The virus is still in the body, but at a very low level (van Dyk 2013:121). Eliminating HIV transmission requires a multidisciplinary approach whereby the health care workers need to assist the patient to cope with the disease physically, psychologically, and spiritually (van Dyk, et al. 2017:432). Pregnant women should be counselled by the health care worker about the benefits of HIV status disclosure in collaboration with other stakeholders like psychologists, social workers, pharmacists, dieticians, medical practitioners, support groups, and supportive partners to facilitate effective care.

During pre- and post-test counselling, disclosure education is provided to all pregnant women on their first encounter with the health care worker at the health facility. Information on the benefits of testing for HIV is outlined so that the women can make informed choices. The process of HIV testing is explained to the women, they are told that they are not forced to be tested and it should be explained why they need to be tested (van Dyk 2013:269-270).

Post-test counselling provides an opportunity to discuss the importance of linking other HIV-related services. The health care worker should allow and encourage pregnant women to invite a supportive adult or a partner to support them. At the time of HIV diagnosis, the health care worker should involve the patient in the decision making process of ART initiation and the treatment plan/follow-up visit schedules during HIV counselling and testing (HCT). The health care worker should identify and address any possible barriers of linkage to care. Assessment for ART eligibility should be done by the health care worker. Where possible the mother will be introduced to post-diagnosis peer support groups. The peer support groups are led by pregnant and postpartum women, who were diagnosed with HIV, who had accepted their diagnosis and disclosed their status to their partners to help their peers in overcoming the challenges of disclosing their status to their partners so as to share their personal testimonies (NDoH 2015:33).

The health care workers should spend time with the woman and explain the disease, the goals of therapy, and the need for adherence. Discussions should be held on the role of viral load and suppression. A treatment plan should be negotiated that the woman can understand and commit to. How to avoid adverse drug-drug interactions should be explained to the woman. The woman should understand the possible consequences of mixing other prescribed or recreational drugs and substances (NDoH 2014:36). Counselling before ART initiation includes discussions on safer sex practices and reproductive health which entails: consistent condom use; family planning; contraception; pregnancy; and how to prevent MTCT. Disclosure to partners and/or other members of the household is also encouraged (van Dyk, et al. 2017:154).

The effectiveness of adherence to the treatment regimen are increased when the pregnant woman has disclosed her HIV status to her partner. The next section outlines disclosure of HIV status.

2.8 HIV DISCLOSURE

Disclosure education and HIV status disclosure is discussed next.

2.8.1 Disclosure education

Disclosure is when a person shares personal information with another person (van Dyk, et al. 2017:146). In this study, disclosure is when pregnant women disclose their HIV status to their partners. The health care workers should offer HIV-related information as disclosure education to the HIV positive pregnant women with pre-test and post-test counselling after their status is confirmed to promote/encourage HIV status disclosure to the partners. The health care workers should support all HIV positive pregnant women in disclosing their status and partner notification (NDoH 2015:45). It is vital that pre- and post-test disclosure education follows a planned process. The process of disclosure education is cyclical (like a circle); the health care workers need to re-educate community members through all forms of media and at every contact with the patients as new information or deeper levels of information are shared (NDoH 2015:45).

Firstly, the health care worker needs to do preparation and planning which include a conducive environment, documenting every process, and providing appropriate information for disclosure. After preparation and planning, assessment follows. Emotions are assessed and the type of disclosure is decided on. Assessment is then followed by disclosure and health promotion tasks: linkages of information and follow-up dates need to be given to the patient. Lastly, the disclosure and health promotion tasks are followed by support and follow-up dates. Multidisciplinary team involvement is encouraged and on-going assessment of patients' well-being is ensured (NDoH 2015:45).

According to Selebogo, van der Merwe and Smith (2014:96) in their South African study most of their respondents (73.6%) indicated that members of the community have knowledge about HIV status disclosure (although not enough) – of making their HIV status public. This statement implies that many people know that they should disclose their HIV status. The health care workers should continue to disseminate the information until HIV positive pregnant women in the community are able to disclose their status to partners.

Adherence to lifelong treatment requires a continuous process whereby more information is provided to pregnant women. Therefore, the health care workers need to assess and provide information so that the patient can make an informed decision on disclosure. Disclosing an HIV status is discussed next.

2.8.2 HIV status disclosure

The health care workers need to remember that patients should be comfortable with their diagnosis before disclosing it to others, and they should protect the patients against undue pressure to disclose their HIV status (van Dyk, et al. 2017:411). In a Tanzanian study by Yonah, Fredrick and Leyna (2014:3), most of the respondents preferred not to disclose their HIV status to their partners; 19% disclosed to parents, 50.8% to close relatives, 4% to a friend, 0.8% to others. Only 25.4% disclosed their status to their partners. Reasons given by 16.66% of respondents who did not disclose their status included fear of divorce when they disclosed their status to their partners. According to another study conducted in Tanzania, disclosure of HIV status by a pregnant woman to her family/significant other is important as they may offer her support to reduce stress. However, disclosing her status to her partner is paramount as it will protect the uninfected partner from HIV infection since adherence to safe sex practices is enhanced. This prevents re-infections, and facilitates discussions on contraceptives to prevent unintended pregnancies. It also ensures that the partner is tested and provided with treatment, enhancing adherence to treatment and preventing MTCT of HIV (Moshi, Helleve & Grandmann 2016:19). The next section centres on the benefits of disclosure.

2.8.2.1 The benefits of HIV status disclosure

According to the HBM, health-seeking behaviour is influenced by a persons' perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat (Polit & Beck 2017:124). Pregnant women should perceive the severity of the problem so that action can be taken to enhance disclosure and to ensure treatment adherence. Even though the South African government provides ARVs in public health facilities, women need to be ready to disclose their HIV status to their partners to reduce HIV transmission to their partners and to prevent MTCT.

According to Yonah, et al. (2014:4), the benefits of HIV status disclosure include: improving quality of life for people living with HIV and AIDS, freedom to use ARVs without hiding, financial and moral support, and the use of protection to prevent re-infection. According to the HBM, perceived benefits are the patients' beliefs that a given treatment will cure the illness or help prevent it. Pregnant women who perceive that ARVs may help in the prevention of MTCT and promote a healthy life will consider it beneficial to disclose their HIV positive status to their partners. Alema, et al. (2017:58) further indicate that the benefits of disclosure included on-going support whereby frequent discussions related to HIV topics are addressed, resulting in behavioural changes. As a result, individuals were able to overcome feelings of shame which related to the disclosure of their HIV positive status.

According to Selebogo, et al. (2014:105) their respondents believed that there are some benefits in disclosing one's HIV status; 92.5% indicated it prevents the spread of HIV; 91.5% indicated it decreases the HIV/AIDS mortality rate. These benefits are achieved when the pregnant woman can disclose her HIV status to her partner.

The benefits of HIV status disclosure of pregnant women also include: access to medical services, care and support, access to ART, protecting oneself and others, and openness about their HIV status which may help in negotiating safe sex practices (condom use). It may also help to reduce stigma, discrimination, and denial that surround HIV/AIDS (van Dyk 2013:298).

2.8.2.2 Availability of ARVs in the health facilities

According to the study conducted in United Kingdom (UK) by Greenhalgh, Evangeli, Frize, Foster and Fidler (2016:283), the availability of ART for children has improved survival for individuals with perinatally acquired HIV (PAH) (this is an infection that occurred at or around the time of birth) (Greenhalgh, et al. 2014:283). Within the UK, around 50% of those with PAH are now aged ≥15 years. This study confirms that the availability of ARVs in health facilities can prolong life as long as HIV positive women disclose their status to their partners. This will enable them to give treatment to their babies without fear of being seen or judged.

According to UNAIDS (2016:3), the scale-up of ART is on a fast-track trajectory (the curved path) that has surpassed expectations. Global coverage of ART reached 46% at the end of 2015. Gains were greatest in the world's most affected region, Eastern and Southern Africa. Coverage increased from 24% in 2010 to 54% in 2015, reaching a regional total of 10.3 million people.

2.8.2.3 Accessibility ARVs

According to the study by Earnshaw, Smith, Shuper, Fisher, Cornman and Fisher (2014:1510) in South Africa, increased access to ART can potentially reduce self-stigma by normalising HIV infection. This study eludes that the availability of treatment may motivate pregnant women to disclose their HIV positive status to their partners so that the partner might also have access to ARVs.

2.8.2.4 Treatment (ARVs) coverage and initiation

UNAIDS (2016:4) states that treatment coverage in Latin American and the Caribbean reached 55% in 2015. In the Asia and Pacific region, coverage more than doubled, from 19% in 2010 to 41% in 2015. Western and Central Africa and the Middle East and North Africa also made important gains but achieved lower levels of coverage in 2015, 28% and 17% respectively. In Eastern Europe and Central Asia, coverage increased by just a few percentage points in recent years to 21%; about one in five people living with HIV in the region.

The reduction in AIDS-related deaths since 2010 has been greater among adult women (33% decrease) compared with adult men (15% decrease), reflecting higher treatment coverage among women than men, 52% and 41% respectively (UNAIDS 2016:4). According to UNAIDS (2016:4), the gender gap for treatment among adults highlights the impact of gender norms that delay initiation of treatment among men, which reduce treatment adherence, blunt the preventive effects of treatment, and lead to men accounting for 58% of adult AIDS-related death. Higher treatment coverage may be linked to antenatal care and offering HIV tests during pregnancy as the women who test HIV positive is started on treatment.

According to UNAIDS (2016:3), South Africa alone had nearly 3.4 million people on treatment, more than any other country in the world. After South Africa, Kenya has the largest treatment programme in Africa, with nearly 900 000 people on treatment at the end of 2015. Botswana, Eritrea, Kenya, Malawi, Mozambique, Rwanda, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe all increased treatment coverage by more than 25 percentage points between 2010 and 2015. Even though HIV treatment is available in public health facilities, it is the responsibility of the HIV positive pregnant women to commit to lifelong treatment and to disclose their HIV status to their partners as part of the vital role to promote the health status of couples and to prevent MTCT.

2.8.2.5 Condom use

Based on the study conducted by Clum, Czaplicki, Andrinopoulos, Muessig, Hamvas and Ellen (2013:197) in Miami, New York City, and Philadelphia in the USA, women who were clear that they would not have sex without a condom were the most likely to practice safe sex. This was done to avoid disclosing their HIV positive status. Less assertive women and those who did not believe they could control condom use in partners were less likely to use condoms. For those women who consistently used condoms in the study by Clum, et al. (2013:197), condoms were utilised to avoid disclosure of HIV status.

When condoms are used consistently and correctly, latex condoms are very effective in preventing the transmission of HIV and other STIs (van Dyk, et al. 2017:116). According to a study by Grov, Agyemang, Ventuneac and Breslow (2013:77) in the USA, the majority of men (78.6%) responded that they would use condoms with their partners regardless of whether they met online or not. The predominant sentiment from these respondents was that they had made a priority decision to use condoms all the time; thus, it was not an issue for them. It seems persistent condom use may prevent the transmission of HIV among partners.

According to the Zimbabwe Demographic and Health Survey (2015:241), 14% of women and 37% of men had sexual intercourse with a non-marital, non-cohabitating partner (higher risk sexual partners) in the past 12 months. Two-thirds of women (67%) and more than 8 in 10 men (85%) used condoms at last intercourse with such a partner. The report indicates that Zimbabwean men are able to negotiate condom use during sexual relations than women. If women are not able to negotiate condom use, they should disclose their status to their partners which will create an opportunity to discuss safe sex practices to prevent re-infections and MTCT.

Jones, Peltzer, Villar-Loubet, Shikwane, Cook, Vamos and Weiss (2013:706), in contrast with Grov, et al. (2013:77), claim that HIV transmission during pregnancy is higher than among non-pregnant couples. This study identified high rates of unprotected sex during pregnancy as well as sero-conversion (the point at which a person’s HIV status converts or changes from being HIV negative to HIV positive) among the control group of women by 32 weeks pregnancy. This study by Jones, et al. (2013:706) indicates that pregnant women did not utilise protective measures such as latex condoms, which exposed them to HIV infections and increased their viral load.

According to Mbokane, et al. (2016:16), 92.0% of their respondents were shocked to be diagnosed as HIV-positive. The respondents became pregnant because they did not use condoms effectively. The health care workers need to provide information to the pregnant women on the importance of effectively and consistently using condoms. Condoms are not only used for contraception, but also for protection against STIs and re-infections, which is achievable after disclosure of HIV status to partners has taken place.

Condom use seems to be closely linked with HIV prevention and status disclosure. Some respondents in Clum, et al's. (2013:197) study negotiated condom use to avoid disclosing their HIV status to their partners. On the other hand, only 67% of respondents, according to the Zimbabwe Demographic and Health Survey (2015:241), used condoms with high risk partners. The role of condom use in safe sex practices relating to disclosure of HIV status needs to be further explored in future research.

The studies discussed indicate that pregnant women may benefit from disclosing their HIV status to their partners. They may then have improved quality of life, condoms will be used consistently to prevent re-infections, they will have freedom to use ART, receive financial and moral support from their partners, and behavioural change will take place. The benefits can be achieved if the respondents are motivated to disclose their status to their partners. The next topic is the motivating and enabling factors of disclosure.

2.8.3 The motivating and enabling factors for HIV status disclosure

Motivation is defined as to make somebody want to do something; especially something that involves hard work or an effort (Hornby 2015:979). Motivation to comply with treatment is one of the components of the HBM (Polit & Beck 2017:124).

In this study, HIV positive pregnant women need to have the motivation/desire to disclose their status to their partners and to comply with the treatment. Unless the respondents are motivated to follow the planned MTCT programme and promote their own health and that of their partners, HIV status disclosure may not be attained.

According to a study conducted by Xiao, et al. (2015:79) in China, the duty to inform/educate one's partner was the only motivating factor that was related to HIV disclosure. The duty to inform/educate one's partner was consistent with "a sense of obligation" as an important motivator for HIV disclosure in intimate relationships. In HIV status disclosure, a pregnant woman is obliged to inform her partner about her HIV status so that he can also receive treatment, to prevent re-infections and MTCT. In Mbokane, et al's. (2016:14) study, 70.5% of respondents disclosed their status to their sexual partners. One primary motivation appeared to be feelings of guilt over not disclosing sooner and a sense of moral obligation to disclose their HIV status (Clum, et al. 2013:195).

2.8.4 Factors influencing HIV status disclosure

The UNAIDS (2016:3) reports that there was a decline in new HIV infections among adults, with an estimated annual static number of nearly 1.9 million in 2015. One of the reasons why there were still a number of new infections might be challenges relating to HIV status disclosure that is detrimental to HIV prevention.

In a study conducted in Kenya by Moyer, et al. (2013:65), participants pointed out that fear of disclosure has negative consequences as living with a secret was psychologically stressful. It led to isolation and often unwarranted fear as people tend to imagine the worst reactions from family, friends and partners such as abandonment, rejection and lack of family support. Moyer, et al. (2013:65) state that some participants pointed out that fear of disclosure could interfere with treatment adherence since people who were hiding their HIV positive status were also likely to hide their medicines or stop taking them.

A study conducted in South Africa by Yako and Memeza (2013:82) indicated that 59% of respondents did not disclose as they were afraid of losing friends and popularity. Some wanted to deliberately infect others (22%), since their sexual partners had not disclosed their own positive status. They expressed their anger at not being given the opportunity by their partners to make informed decisions about practising safe sex or the continuation of the relationships. The respondents in this study were still in the grieving process as evidenced by the anger they displayed in relation to HIV status disclosure to their partners. According to Yako and Memeza (2013:82), respondents need continuous support from health care workers and support groups to help them come to terms with the new condition.

The following factors that influence disclosure will be discussed next: fear of abandonment and physical abuse, loss of economic/financial status, stigma, HIV status duration and disclosure, traditional and modern belief, breach of confidentiality, lack of on-going support, and biographic barriers.

2.8.4.1 Fear of abandonment and physical abuse

Atuyambe, Ssegujja, Ssali, Tumwine, Nekesa, Nannungi, Ryan and Wagner (2014:290), in the study conducted at Kampala, Uganda, claim that people do not want to disclose their HIV status as they fear disclosure repercussions such as violence, separations, withdrawal of support, and negative emotional reactions. Yaya, Saka, Landoh, Patchali, Patassi, Aboubakari, Makawa, N'Dri, Senanou, Lamboni, Idrissou, Salaka and Pitche (2015:6) conducted a research in Togo, and also state that 39% of respondents living with HIV/AIDS did not disclose their HIV status. The situation reflects the extent to which HIV remains a myth among populations and the factors that influence disclosure include stigma from neighbours, rejection, and physical abuse from partners. The researcher was curious if the pregnant women from the Capricorn District in Limpopo Province experience similar barriers in status disclosure to their partners.

In Tshisuyi and Davis' (2014:59) Botswana study, 65% HIV positive pregnant women reported that they were afraid that they would be blamed, 42% feared rejection, and 50% feared abuse as the reasons thought to have contributed to non-disclosure. Letsoalo and Madiba (2014:9) conducted a study on HIV positive postnatal women receiving PMTCT interventions in South Africa, and also identified similar barriers of disclosure; most women felt that their male partners might react violently and blame the women for the HIV infection. Letsoalo and Madiba (2014:9) further showed that 33.33% of HIV positive postnatal women who disclosed their HIV results were abandoned by their male partners after disclosure. According to Nyandat and van Rensburg (2015:61), 17% of HIV positive women did not disclose their status due to fear of abandonment, withdrawal of social support from partners, discrimination, and violence. These studies indicate that intimate violence, blame and abandonment/ rejection were factors that influenced HIV status disclosure.

Kiweewa, et al. (2015:4), in a study conducted at Kampala University in Uganda, showed that 38% of respondents who had not yet disclosed their HIV status to their partners also feared separation, 34% feared loss of financial support, 26% were separated or not living with the partner (not having opportunities to disclose), and 2% feared stigmatisation. Other reasons included fear of causing worry to the partners and fear of a harmful reaction from the partners. Respondents were afraid that their partners may harm themselves or become abusive, and 38% were not yet ready to disclose their HIV status.

In the study conducted by Tshweneagae, Oss and Mgutshini (2015:4) in a hospital in the Northern Cape Province, South Africa, it was found that 9 out of 13 of their participants disclosed their HIV status to their sexual partners. Three participants had not disclosed because they were not involved in relationships at the time of the study. However, these participants maintained that if they were in relationships, they would tell their partners. One did not disclose his status because he feared rejection. The majority of the study participants were females and the minority were males. This study differs from the context of the current study as it involved non-pregnant HIV positive women and HIV positive male participants. Similar to the study by Kiweewa, et al. (2015:4), fear of being rejected by the partner was considered a factor that influenced HIV status disclosure to partners.

These studies indicated the most common factors influencing HIV status disclosure included fear by the respondents relating to violence, blame and abandonment/rejection. Another factor that can influence status disclosure is loss of economical/financial status.

2.8.4.2 Loss of Economical/financial status

Tam, Amzel and Phelps (2015:447) report that respondents with low wage employment and who were financially dependent on their partners, believed that disclosure would cause divorce and loss of monetary support, and were less likely to disclose their HIV status to their partners. According to Kiweewa, et al. (2015:4), 99% of respondents had disclosed their HIV status to at least one person, while 1% had never told anyone about her status. Among the respondents who had not yet disclosed their HIV status to their partners, 34% feared separation which can result in loss of monetary or financial support. Pregnant women need their partners' financial support even if they are working, as they will have a baby to provide for in future. Therefore, it is vital to let the pregnant women compare the benefits of disclosure which will benefit the woman, partner and the baby, versus non-disclosure of the HIV status.

Kiula, et al. (2013:6-7) state that 41% of respondents – mostly married/cohabiting HIV positive pregnant women attending antenatal care in Morogoro, Tanzania – had disclosed their HIV status to their partners. Among 148 pregnant women who had not disclosed, 43% planned to disclose to their partners in the future, while 56.75% did not plan to disclose at all as they were afraid to lose financial support. Respondents who depended on their partners for food, rent, and school fees, were less likely to disclose their HIV status to their partner/spouse, than others. Other markers of low economic status such as low income and lower educational level of the woman or partner also negatively affected disclosure.

Nyandat and van Rensburg's (2015:61) study revealed that pregnant women must overcome a number of difficulties when disclosing their HIV status to their partners, including fear of a loss of economic support. Therefore, women who choose not to disclose their HIV status due to fear of financial loss, should note that secrecy has been identified as a risk for MTCT, and delays in starting ART, poor compliance, lack of postnatal infant prophylaxis, or breastfeeding.

Most of the Sub-Saharan countries, including African countries, belong to the developing world and are financially deprived. Women are mostly affected by lack of finances whereby dependency on the partner is not a choice, but a reality to abide by. This may negatively affect the motivation to disclose their HIV status due to fear of financial loss. The next section on barriers of HIV status disclosure is stigma.

2.8.4.3 Stigma

According to the study conducted in Russia by Shilovskaya (2015:11), it was indicated that the government does not provide social security for HIV positive people and they refused to accept them in open hospitals. Two-thirds (71%) of respondents were aware of what stigma is, and none of them admitted revealing their HIV positive status openly to the community, even if they were asked directly. Some of the reasons for reluctance in disclosure were: 27% feared public neglect, 27% feared negative attitudes towards their children, and 12% feared dismissal from work. Disclosure had potential risks such as discrimination, stigma, and violence from partners. Disclosure may also negatively affect the quality of family relationships.

In the Ugandan by Batte, Katahoire, Chimoyi, Ajambo, Tibingana and Banura (2015:6), in contrast to Shilovskaya’s findings, the level of stigma was low among people who disclosed their HIV positive status. It was suggested that the low level of stigma in their study was attributed to the increased awareness of HIV care which has been created by the government of Uganda and non-governmental organisations.

The primary reasons for not disclosing one’s status offered in Yako and Memeza’s (2013:84) study were also to avoid stigma and discrimination by significant others. Although HIV/AIDS was discovered in 1982 (van Dyk 2013:4-6), stigmatisation still exists. It is evident that stigma from the community, family and partners may hamper the good intension of pregnant women to protect themselves and their partners against HIV re-infection through disclosure.

Van Rooyen and Mhlongo (2015:56) also state that participants witnessed fellow community members being stigmatised when a person was identified as HIV-positive, especially females. Stigma was directly linked to public knowledge of one’s status. Consequently, disclosure of their HIV status was avoided due to witnessing the experience of stigmatisation.

2.8.4.4 The HIV status duration and disclosure

The prenatal period is also defined as the gestational process which is a period of intrauterine development from conception until the birth of an infant (Davidson, et al. 2014:8). More specifically, physicians worldwide calculate the duration of pregnancy from the first day of the last menstruation (Louw & Louw 2014:67). HCT are offered at any time the woman presents herself for antenatal clinic assessment. If the woman delivers without being tested for HIV, this can be offered in the postpartum period. Postpartum is the period from the completion of the delivery (end of third stage of labour) to the end of the first 6 weeks, during which time the woman’s body returns to the normal non-pregnancy state (Dippenaar & da Serra 2014:760). Even if the first HIV test was negative, this does not mean that the woman is immune to infection and this is the motivation behind encouraging a re-test at 3 months and continuation of condom use (NDoH 2016:111).

According to the study undertaken in China by Qiao, Li, Zhou, Shen and Tang (2016:39), the average duration since HIV diagnosis and disclosure was almost 4 years. Even 4 years after receiving their diagnosis, 50% of respondents were unable to disclose their HIV status to their partners. According to van Dyk, et al. (2017:463), disclosure is a process, not an event. Disclosure is an on-going process that may last for several years. The HIV positive pregnant women should first accept that they have the HIV infection. They should also have enough information and courage, which will enable them to deal with any negative reactions that can arise during the disclosure process before the actual disclosure.

The duration for disclosure of HIV may be limited for pregnant women as some are diagnosed late in pregnancy and may not have enough time to be able to disclose their HIV status so as to utilise MTCT preventive strategies. Pre-pregnancy HIV counselling may be enhanced for women who are planning to become pregnant so as to have ample time to come to terms with the new diagnosis, which will facilitate disclosure.

2.8.4.5 Traditional and modern belief

There are certain traditions that can be a factor in non-disclosure of HIV status. Some traditions prescribe male-dominant and female-submissive roles, therefore, traditional African beliefs and customs must be considered when developing HIV prevention programmes in Africa (van Dyk, et al. 2017:202-203). Many traditional people are especially concerned about secrecy and confidentiality where HIV and AIDS are concerned, because they fear rejection by the community if their HIV status becomes general knowledge. Even in the (modern) present time, the socio-cultural environment might not be conducive to HIV status disclosure as women are afraid they will be killed (van Dyk, et al. 2017:327). Health care workers need to acknowledge the traditional and modern beliefs of HIV positive pregnant women to be able to assist them in disclosing their status to their partners.

According to Seeling, Mavhungu, Thomas, Adelberger and Ulrichs (2014:273), in their study conducted in Namibia interference with Pentecostal churches also turned out to create a challenge for HIV status disclosure. Faith healing, including healing of diseases that are classified as incurable in scientific medicine – like HIV infection – was a challenge. An increasing number of patients defaulted treatment because some Pentecostal churches in Namibia encouraged their congregations to stop taking medications for HIV.

Tshibangu-Kalala and Mavhandu-Mudzusi (2014:41) agree that cultural beliefs are among the factors contributing to young refugee girls being vulnerable to intergenerational sexual relationships. Cultural beliefs tend to decrease young girls' ability to discuss safe sex when dealing with older men. This increases the likelihood of young refugee girls being infected with HIV. This is because dominant African cultural norms prescribe that women must be obedient to their male partners and that young people must have respect for and show obedience to older people. It is the responsibilities of the health care workers to offer holistic health care that includes cultural sensitivity and awareness without compromising confidentiality of the HIV positive pregnant women in their care. The next section will cover breach of confidentiality.

2.8.4.6 Breach of confidentiality

According to Nie, Walker, Qiao, Li and Tucker (2015:86), in their study conducted in China there was a practice of informing family members before patients are given the nature of their conditions. This practice caused potential tension between what has been called “Chinese familism” and patients’ rights to information, privacy, and independence. Many physicians experienced this tension directly in their practice. Moreover, it does not negate the importance of those other rights, and when involving families in a patient’s care, the health care workers should be alert to the possibility that the patient may need to keep some information private, or to maintain some degree of independence.

In Nie, et al’s. (2015:86) study, close to 90% of people living with HIV chose to exert their control over their private information in the form of non-disclosure of their HIV status to their partners. The common concern of the respondents was that if they disclose their HIV status to their partners, they have to reveal other secrets as well (such as sexual orientation and practices), or their partners would tell a third party about their HIV status. This finding indicates that concerns about privacy inhibit HIV disclosure to the partner (Xiao, et al. 2015:78).

Van Dyk’s (2013:52) study showed that 60% of respondents did not plan to be tested for HIV in the future as they were afraid that confidentiality would be compromised during their testing. The respondents’ concerns were fear of stigma and discrimination, the need for privacy, and confidentiality from health care workers. Respondents viewed a lack of trust in the health care workers as a factor for not being tested. The lack of trust was caused by the fear that their confidential information would be divulged. Mbokane, et al. (2016:15) also found that 33.3% of respondents indicated that other people gossiped about HIV-positive individuals. In contrast to van Dyk’s (2013:52) results, it appears that with time the respondents’ fears gradually reduced to 33.3% as indicated in the study by Mbokane, et al. (2016:15). Continued engagement with community members may win the trust of HIV positive pregnant women and enable disclosure to partners to occur. The next section focusses on a lack of on-going support as a factor for non-disclosure.

2.8.4.7 Lack of on-going support

Being HIV positive affects people psychologically, emotionally, socially, and spiritually (van Dyk, et al. 2017:432). While the health care workers' focus is on providing support to the patient, the patient should still receive specialised treatment from suitably trained professionals. Counselling and casework management should, when indicated, include identifying and making referrals to third parties who can best assist the patient (van Dyk, et al. 2017:432). Lack of on-going support may prolong the disclosure process of respondents to their partners.

Selebogo, et al. (2014:91) investigated the non-disclosure of HIV status of pregnant women at primary health care clinics in the West Rand Health Region, South Africa. The results indicated that 46.2% of the respondents claimed that HIV positive women could not rely on the support of their partners. This study revealed that the respondents were likely not to disclose their HIV status to their partners as they could not count on their partners' support.

Social support gives pregnant women hope that at least somebody cares and it reduces depression. Support can also facilitate disclosure to the partner. Biographic barriers will be discussed in the next section.

2.8.4.8 Biographic barriers

Tam, et al. (2015:447) claim that factors that influenced disclosure were: nulliparous (never having given birth to a baby before), disclosure to a female relative was associated with lower disclosure to partners, a need for approval from partners before testing, being married or co-habiting <2 years or >2 years (as compared to married >2 years). Tam, et al. (2015:447) further state that respondents believed disclosure would cause divorce, low wage employment, financial dependence on a partner, living with extended family or own family without a partner, a lack of coping behaviour, and having a co-spouse (a person in a group marriage who shares a spouse in common with another person in that group marriage). HIV positive pregnant women who belong to this type of marriage are associated with a lower likelihood to disclose their HIV status to their partners.

According to the Zimbabwe Demographic and Health Survey (2015:277), the following HIV prevalence was identified: 58% of women were married and living with HIV, 28% were divorced or separated, and 15% of women were never married but have had sex with someone who was HIV positive in 2015. These are some of the biographical factors that may hinder the disclosure of HIV status to the partners. HIV prevalence was slightly lower (14.7%) among women who reported that they were currently pregnant compared with 16.8% of those who said that they were not pregnant or not sure.

Polit and Beck’s (2017:124) HBM model states that modifying factors that have been identified are personality variables and socio-demographic characteristics. The personality variables and the socio-demographic characteristics may affect the disclosure rate of HIV positive pregnant women to their partners, either positively or negatively. For example, the personality variables and the socio-demographic characteristics in Tam, et al. (2015:447) and the Zimbabwe Demographic and Health Survey (2015:277) associated with a low rate of disclosure of HIV status to the partners were: young age, unemployed, low parity, being submissive to the partner, group marriage, and having low family support. The next section will address the impact/consequences of disclosure.

2.8.5 The impact/consequences of disclosure

Literature indicated positive and negative consequences of disclosure.

2.8.5.1 Positive consequences of disclosure

According to a study by Law, Gogolishvili, Globerman and Rueda (2013:1), the following positive consequences of disclosure were identified: higher quality social support, stronger family cohesion and relationships, reductions in anxiety and depression, and improvements in physical health. These possible outcomes are conducive for HIV positive pregnant women to disclose their status to their partners.

Longinetti, et al. (2014:6) found another positive consequence was that individuals on ARTs who disclosed their status to family members, demonstrated good adherence to treatment. Letsoalo and Madiba (2014:19) further reported that condom use and couple counselling was viewed as positive consequences after status disclosure. Couple counselling and testing increased the acceptance of condom use by couples, which will prevent re-infections and unwanted pregnancies. According to Atuyambe, et al. (2014:276), in Kampala, Uganda, HIV disclosure was necessary for critical public health benefits such as HIV prevention advocacy, HIV testing, protection from infection, and early enrolment on ARTs and adherence to medications. These studies indicate the positive outcomes of disclosure that can be achieved by HIV positive pregnant women if they disclose their status to their partners.

Support from their partners was identified as another positive consequence of HIV status disclosure (Kiweewa, et al. 2015:4). In Uganda, 38% of respondents disclosed their HIV status to their partners, 67% received support from partners, and 9% of their partners subsequently underwent HIV testing as a result of disclosure. Forty-six point one five percent (46.15%) of Tshweneagae, et al.'s (2015:5) participants also stated that they received support from their partners after disclosure. Although the partners had an initial negative reaction to the news, they later accepted the information and offered their support.

These studies reveal that disclosure enhanced positive consequences such as stronger family cohesion and relationships, social support, and adherence to treatment regimens. This may reduce stressors/depression and encourage partners to receive HIV testing, which may contribute to the reduction of HIV transmission. The HBM indicate that the positive consequences/the modifying factors that have been identified were socio-demographic factors. A conducive environment enables the respondents to be able to recover from the burden of HIV infection, thus facilitating disclosure to partners. Despite the positive consequences, negative consequences of disclosure were also identified in literature.

2.8.5.2 Negative consequences of disclosure

The negative outcomes which were found in a review by Law, et al. (2013:1) included: rejection, abuse, violence, stigma, and discrimination. The negative attitudes may hamper individuals' lives by delaying the HIV positive pregnant woman from seeking treatment and using preventive measures which may prolong her life and prevent MTCT.

According to a study conducted in the Netherlands by Stutterheim, Brands, Baas, Lechner, Kok and Bos (2017:6-8), health care workers living with HIV reported experiences whereby they felt that their colleagues and management had reacted poorly upon discovering that they had HIV. Two of the ten participants reported management wanting to inform other employees about their HIV status due to perceived risks to employees and patients. Other negative reactions included restrictions placed on work duties, gossiping, hurtful and judgemental comments made, and difficulties in acquiring work. Stutterheim, et al's. (2017:6-8) study highlights the negative reactions that were encountered by participants, which led to non-disclosure of the HIV status.

Letsoalo and Madiba (2014:19) confirm negative consequences of disclosure were that women living with HIV and AIDS were abandoned and rejected by their significant others after disclosing their status. Women are social beings; abandonment and rejection may add additional stress to an individual who is trying to cope with the symptoms of HIV infection and pregnancy.

There were also negative consequences of prolonged non-disclosure to children who were born HIV positive from mothers in the study conducted in Botswana. These children were rebellious, they refused to take medications, and angry confrontations with parents emerged (Lowenthal, Jibril, Sechele, Mathuba, Tshume & Anabwani 2014:48). According to Madiba and Mokgatle (2017:179), some of the caregivers were afraid to disclose the HIV status to the child as they feared that the child could harm him/herself by committing suicide.

Kiweewa, et al. (2015:4) found that 8% of the women who disclosed their HIV status to their partners in Uganda were neglected and separated from their partners, 5% lost monetary support, and 9% received negative reactions such as violence, stigmatisation, and confidants telling others. This is supported by Letsoalo and Madiba (2014:19), who also reported that women living with HIV and AIDS were abandoned and rejected by their significant others after disclosing their status. Seventy-two percent (72%) of their respondents disclosed their status to their male partners.

The HBM indicates that even though one recognises susceptibility, action will not occur unless the individual perceives the severity to be high enough to have serious implications. Rewards from the HIV status disclosure to the partner outweigh obstacles, and they need to possess the skills required to perform and maintain the behaviour. Health care workers need to enhance self-efficacy by instilling confidence in the HIV positive pregnant women with the belief that they can disclose their status to their partners and overcome the anxieties related to non-disclosure. The predictors of HIV disclosure are discussed next.

2.8.6 The predictors of HIV disclosure

Deterioration of health was identified as a predictor of HIV status disclosure in South Africa (Mamogobo, et al. 2013:43). Similar to the study by Mamogobo, et al. (2013:43), Longinetti, et al. (2014:4-6) state that an advanced HIV stage was a predictor of disclosure to sexual partners. Since it is evident that the women were showing signs of HIV infection, there was a need to seek social support. The time of HIV diagnosis significantly influenced HIV disclosure to partners. Length of time since diagnosis had an impact as an individual had enough time to come to terms with the diagnosis. Like other previous studies, Longinetti, et al. (2014:6) further report that advanced HIV status, stage, and length of time since diagnosis had an impact in the number of confidants informed. Ill health/advanced HIV status was a predictor of HIV status disclosure as the participants felt that they had nothing to hide.

According to Kiula, et al. (2013:9-7), women who had discussed HIV testing with their partners before undertaking the HIV test, were seven times more likely to disclose their status to their partners than those who did not. The involvement of a partner before HIV testing provides an opportunity for the pregnant woman to disclose her status to the partner.

Kiweewa, et al. (2015:4) found that women with HIV-infected babies, who was a house wife, with low educational level, and who were married, were likely to disclose their status. Thus, women who were depending on partners were likely to disclose their HIV status to their partners.

Obtaining demographic information and assessing pregnant women’s health problems may assist health care workers with the HIV disclosure process. Self-efficacy is discussed next.

2.8.6.1 Self-efficacy

Self-efficacy is the belief in ones’ ability to perform a desired behaviour, for instance, to insist on condom use or to adhere to ART (van Dyk, et al. 2017:189). The respondents are required to have a strong belief in their ability to negotiate condom use and to disclose their HIV status to their partners without fear to enhance safe sex practices.

Pregnant women are provided with information that ART is lifelong and 100% adherence is important to prevent drug resistance as resistance to one drug, specifically the non-nucleoside reverse transcriptase inhibitors (NNRTIs), could lead to resistance to other drugs in the same class. These resistant viruses could be transmitted to other people (van Dyk, et al. 2017:154-164).

According to Alemayehu, et al. (2014:5), in their study conducted in Northern Ethiopia, 66.7% respondents used condoms while 33.3% did not use condoms during sexual relations. Sixty-four point six percent (64.6%) indicated that they always use condoms, while 35.4% stated that they sometimes used condoms. This information suggests that the respondents did not believe in their own capacity or have the motivational readiness or self-efficacy to adhere to consistent condom use.

2.9 SUMMARY

The development of the questionnaire was aided by the literature reviewed and the HBM to identify the relevant information and establish content validity. In this chapter, the literature presented the historical background of AIDS, the epidemiology of HIV in South Africa, signs and symptoms of HIV, a diagnosis of HIV, the benefits of disclosure of HIV, the motivating factors, barriers, the positive and negative consequences, and predictors of disclosure. Chapter 3 will present the research methods and design.

CHAPTER 3
RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In Chapter 2, a detailed literature review of HIV status disclosure to sexual partners was conducted. This chapter elaborates on aspects of the research methodology such as the research design, population, settings, sample and sampling techniques, data collection and analysis, as well as ethical considerations. A quantitative, descriptive, exploratory, and cross-sectional research design was used to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.

3.2 RESEARCH DESIGN

A research design is the architectural backbone of the study (Polit & Beck 2017:56). It provides the structure for the research methods and design decisions that must be taken to plan the study (Botma, et al. 2016:108).

A quantitative, explorative, descriptive, and cross-sectional research design was used to address the objectives of this study. The objectives were to explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province and to make recommendations on disclosure education for health care workers performing VHCT to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings.

3.2.1 Quantitative research

Quantitative research is defined as the inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers, and analysed with statistical procedures to determine whether the predictive generalisations of the theory hold true (De Vos, et al. 2017:64). Creswell (2014:4) defines ‘quantitative research' as an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures (Creswell 2014:4). The researcher used the numerical information on the survey instrument (questionnaire) to answer the study's research questions. Quantitative research is an essential tool for generating knowledge in nursing science and for providing evidence for nursing practice, education, and management (Botma, et al. 2016:82).

The HIV positive pregnant women might find it challenging to disclose their status to their partners and may not be willing to discuss their status with a researcher face-to-face; therefore, they may feel more comfortable to report on a questionnaire. Thus, this method was chosen to obtain information from the respondents without the barriers of face-to-face reporting, to aid in making recommendations on disclosure education to health care workers to enhance these women's self-efficacy to disclose their HIV status to their partners.

3.2.2 Exploratory research

An exploratory research is defined as a study that explores the dimensions of a phenomenon or that develops or refines hypotheses about relationships between phenomena (Polit & Beck 2017:728). The researcher was interested in investigating and exploring the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.

3.2.3 Descriptive research

Polit and Beck (2017:726) define 'descriptive research' as research that typically has the accurate portrayal of people's characteristics or circumstances and/or the frequency with which certain phenomena occur as its main objective. Descriptive research presents a picture of the specific details of a situation, social setting, or relationship (De Vos, et al. 2017:96).

This descriptive research study gathered information from representative respondents through utilisation of a questionnaire to present a picture on the perceived barriers of HIV status disclosure of pregnant women to their partners in Capricorn District, Limpopo Province.

3.2.4 Cross-sectional research

A cross-sectional design involves obtaining data from a cross section of the population at a point in time and indicating that the data are gathered once from a specific sample (Botma, et al. 2016:113). It is cost and time effective as a large amount of data are collected at one point and makes results more readily available. A comprehensive in-depth study of the specific phenomenon takes place. The status of the phenomenon or relationships among phenomena at a given time is investigated (Polit & Beck 2017:168-170).

In this study, HIV positive pregnant women from three hospital ARV clinics were involved during data collection at a specific time. The researcher visited the ARV clinics to identify HIV positive pregnant women who fit the inclusion criteria, and invited them to participate in the study. Data were collected from 1st February to 3rd May 2017 at three hospital ARV clinics in the Capricorn District, Limpopo Province. Questionnaires were given to the respondents at one point in time and no follow-up information was obtained.

3.3 RESEARCH METHODOLOGY

The research methodology is the techniques used to structure, gather and analyse information in a systematic fashion in a study (Polit & Beck 2017:743). It covers the study setting, study population, sample and sampling, data collection, validity and reliability, and data analysis.

3.3.1 Study setting

A study setting is the overall location for the research; it could be an entire community or an institution like a hospital (Polit & Beck 2017:47). The study was conducted in three public hospitals' ARV clinics in Capricorn District, Limpopo Province. One tertiary, one regional, and one district hospital was chosen so that the sample of the population was represented, and were accessible and convenient to the researcher. The hospitals were chosen as large numbers of HIV positive pregnant women are referred from five districts of Limpopo province for specialised care. The tertiary hospital is situated in an urban setting while the other two hospitals are situated in rural settings. The ARV clinics in these hospitals operate during the week from 07h30 – 16h30, Mondays to Fridays. The health care workers working in the ARV clinics have specialised training on ARV/ART and nurse-initiated management of antiretroviral therapy (NIMART), and they do not rotate. There are 123 ARV/ART clinics in Capricorn District; 9 clinics are in hospitals, while 114 are in local areas.

The rationale for choosing ARV clinics in hospitals was that more women are referred for high risk antenatal care to hospitals from local clinics/hospitals to make a booking for delivery. District hospitals render services such as trauma and emergency care, in-patient and out-patient visits, paediatric and obstetric care (NDoH 2016:18). District hospitals employ specialists including obstetricians/gynaecologists and paediatricians (NDoH 2016:18). Regional hospitals render services at a general specialist level, receive referrals from district hospitals, and they serve as a platform for training and research. They may also provide some district services within the local sub-district. Experienced specialists lead the teams and the medical disciplines include general surgery, general medicine, paediatrics, obstetrics and gynaecology, and anaesthetics (NDoH 2015:21). Tertiary hospitals render specialist and sub-specialist care to a number of regional hospitals and serve as a platform for training health care workers and research. They may also render some regional services (NDoH 2015:22). Therefore, a higher number of pregnant women are referred from different levels of care to the ARV clinics in these hospitals.

3.3.2 Study population

A population is all the individuals or objects with common, defining characteristics (Polit & Beck 2017:56). According to De Vos, et al. (2017:223), a population is the totality of persons, events, organisation units, case records or other sampling units with which the research problem is concerned. The study population comprises of accessible and target population.

3.3.2.1 Accessible and target population

The accessible population is the aggregate of cases that conform to designated criteria and are accessible for the study. The target population is the aggregate of cases about which the researcher would like to generalise (Polit & Beck 2017:249). A target population might consist of all diabetic people in New York, but the accessible population may comprise of all patients with diabetes who attend a particular clinic (Polit & Beck 2017:249). The target population is the entire set or aggregation of objects, persons, behaviour or events, or any other single units of a study, sometimes called elements, that meet the sampling criteria (Botma, et al. 2016:124). In this study, the target population was all HIV positive pregnant women who were attending ARV clinics in the Capricorn District, Limpopo Province. The accessible population comprised of all the HIV positive pregnant women who were attending ARV clinics in three identified hospitals in the Capricorn District, Limpopo Province (more details follow under Section 3.3.3). The rationale for choosing three out of nine hospital was that they were accessible to the researcher and two of the three hospitals are referrals therefore large patient numbers of HIV positive pregnant women are seen.

3.3.3 Sample and sampling

A sample consists of elements or subsets of the population considered for actual inclusion in the study, or it can be viewed as a subset of measurement drawn from a population in which the researcher is interested. Sampling is studied to understand the population from which it was drawn (De Vos, et al. 2017:223-224). There are two types of sampling: probability and non-probability sampling methods (Botma, et al. 2016:124-125). Probability sampling is defined as the selection of sampling elements from a population using random procedures while non-probability sampling is the selection of sampling units from the population using non-random procedures (Polit & Beck 2017:736;740). In this study, non-probability, purposive and convenience sampling methods were used to sample both the three hospitals with ARV clinics and the respondents.

Purposive sampling is a non-probability sampling method in which the researcher selects participants based on personal judgement about which ones will be informative to the research topic (Polit & Beck 2017:741). In this study, respondents who were HIV positive and faced with the choice to share/not share their status with their partners were purposefully selected as they were viewed as experts at being pregnant women who are HIV positive. Polit and Beck (2017:724) define ‘convenience sampling’ as the selection of the most readily available persons as participants in a study. De Vos, et al. (2017:232) define ‘convenient sampling’ as accidental, availability or haphazard sampling which utilises respondents that are usually nearest and most easily available for the study. The hospitals were chosen as they had ARV clinics and the women were referred for high risk antenatal care in hospitals from local clinics/hospitals to make a booking for delivery as district hospitals provide specified services. These hospital ARV clinics have large patient numbers with HIV.

The chosen sample was convenient for the researcher as all three hospitals were geographically close to the researcher and financially viable. In this study, HIV positive pregnant women aged 18-40 years were conveniently sampled as they were available at the time of data collection at the ARV clinics in the identified hospitals.

All the respondents in this study were selected since the convenience sampling method was used. The topic under discussion is sensitive, and many people do not want to share their private life with anyone. Therefore, anyone who met the study criteria at the specified ARV clinics, who was willing to participate, was invited.

The USA’s child-bearing age was 13-46 years (Davidson, et al. 2014:87). According to Statistics South Africa (NDoH 2017: 7), the reproductive age is 15-49 years. The inclusion criteria for this study were HIV positive pregnant women in the age range of 18-40 years who were attending ARV clinics at the specified hospitals, during the period of data collection and willing to participate in this study. HIV positive pregnant women who had undergone counselling and testing at least one month prior to the study formed part of the respondents and signed an informed consent form to participate in the study. Exclusion criteria were pregnant women who tested HIV positive but who were younger than 18 or older than 40 years of age, and those who received their HIV test results less than a month before recruitment for the study. The HIV positive pregnant women who were younger than 18 and older than 40 years were excluded from this research, since few women deliver in this age group, even though they received their HIV test results more than a month before recruitment for the study.

3.3.4 Sample size

Polit and Beck (2017:258) state that the larger the sample is, the more representative of the population it will likely be. According to ARV clinic registers of the three hospital ARV clinics in the Capricorn District, Limpopo Province, 356 HIV positive pregnant women were seen at the facilities from January to June 2015 (ARV Clinic hospital records 2015). A total of 186 respondents were invited to participate in the study as sampled using the sample size calculator (Raosoft 2004). This sample size was calculated by the Raosoft calculator with the assistance of a statistician from the University of Limpopo. According to the Raosoft calculator, if the total population is 356, the sample size should be 52% of the total population. Therefore, 52% of 356 is equal to 185.12 which is approximately 186. Out of 186 respondents, 171 completed the questionnaire and one was discarded as it was incomplete. The response rate was 170/186 x 100 = 91.39%. This number represented the population to allow for reliable statistical inferences to be made about the study population.

3.3.5 Data collection methods and procedures

Data gathering is the precise and systematic gathering of information to be able to resolve the research purpose. The data are usually numerical (Polit & Beck 2017:725; Botma, et al. 2016:131). A pre-existing questionnaire with the permission from the original researchers/developers (Deribe, et al. 2008:4-7) (Annexure E) was adapted to fit the context of this study, and was used as a data collection instrument.

Refer to Section 1.9.6 for the rationale for using a questionnaire for this study. A pre-test was also conducted, which is further explained under Section 3.3.6.

The researcher visited the ARV clinics at the three selected hospitals from the 1st of February to the 3rd of March 2017 and provided information on the aim and objectives of the study through information leaflets to potential respondents. The HIV positive pregnant women who met the inclusion criteria were invited to participate in the study. The researcher was available to answer questions from the respondents during the data collection period.

A private room was used to collect data and a "Do not disturb" sign was put up to avoid disturbance. An informed consent form was signed by respondents who were willing to take part in the study, to indicate that they voluntarily agreed to participate and there was no coercion. Questionnaires were given to the respondents who were available and willing to take part in the study. The respondents who were able to read and write completed the questionnaires on their own. There were 8 out of 170 (4.70%; f=8) respondents who could not read or write; they were assisted by the researcher to complete the questionnaire. The information was read back to them to ensure it captured the meaning they intended. The researcher provided the respondents with a sealed box for completed questionnaires to be returned. The box was kept under lock and key in the ARV clinics and was collected by the researcher on the same day.

As mentioned, one hundred and eighty-six (186) questionnaires were handed out; 171 were returned and one was incomplete and discarded, resulting in 170 respondents (N=170). The questionnaire took 20-25 minutes to complete (Annexure G). The questions on the questionnaire were written in English, and consisted of structured and open-ended questions to enhance the depth of the data. The questions were divided into four sections: Section A: socio-demographic characteristics of the respondents, Section B: sexual and reproductive health information, Section C: the motivating and enabling or modifying factors, and Section D: the challenges/barriers of HIV status disclosure (Refer to Table 3.1).

Table 3.1: Sections of the questionnaire

SECTION	MAIN-HEADING	SUB-HEADING
Section A	Socio-demographic characteristics	The age, religion, marital status, current partner, number of children, period of pregnancy, place of origin, employment status, level of education, head of household, and knowledge of anyone who is HIV positive.
Section B	Sexual and reproductive health information	The diagnosis, disclosure of HIV status, the use of condoms, and CD4 cell count.
Section C	The motivating and enabling or modifying factors	The knowledge of HIV transmission, ARVs, and disclosure.
Section D	The challenges/barriers of HIV status disclosure	The barriers of HIV status disclosure of pregnant women to their partners.

3.3.5.1 Refinement of the questionnaire

The researcher adapted the questionnaire from the developers (Deribe, et al. 2008:4-7) for the context of this study. Permission to use the questionnaire was granted by the researchers who developed the questionnaire (Annexure E). A literature review was conducted to ensure that all the relevant aspects were covered in the questionnaire and the HBM was used as a theoretical framework to develop the instrument. The literature reviewed and the HBM aided in ensuring that the questionnaire covered all the components of the model desired to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. The questionnaire was re-structured with the assistance of the supervisor and the statistician, and changes were made according to their recommendations (Annexure G). Two health professionals/field experts who had undergone training on HIV management and who work at the ARV clinics also reviewed the instrument to enhance the validity and to ensure clarity of the questions. A pre-test was used to ensure the questions were clear and easy to understand. The questionnaire was adjusted according to the feedback received from the pre-test.

3.3.6 Pre-test

Botma, et al. (2016:275) define a ‘pre-test’ as a small-scale version of the study which is carried out with a few participants that meet the inclusion criteria, but who will not form part of the sample. Data collected during this process are not included in the main study. The purpose of the pre-test is to determine whether the potential participant will understand what needs to be done, and to check if the instructions are clear.

In this study, the researcher pre-tested the questionnaire with five HIV positive pregnant women at one of the ARV clinics (not part of those chosen for the study) before actual data collection took place (Annexure F). The five HIV positive pregnant women were randomly selected to participate in the pre-test and were not included in the main study. The respondents met the inclusion criteria of HIV positive pregnant women attending specified ARV clinics in the age range of 18-40 years. The respondents were diagnosed with HIV one month prior to taking part in the pre-test. The facility that participated in the pre-testing was chosen based on the convenience for the researcher in terms of accessibility, money, and time. The ARV clinic that participated in the pre-test was not included in the main study. The feedback from the respondents in the pre-test led to some adjustments to the questionnaire. Minor technical aspects were addressed and changes were made in consultation with the supervisor and statistician. The pre-test also assisted the researcher in determining the estimated time required to complete the questionnaire.

3.4 VALIDITY AND RELIABILITY

Quantitative researchers use several criteria to assess the quality of a study. Two especially important criteria that will be discussed are validity and reliability (Polit & Beck 2017:175).

3.4.1 Validity

Validity is a quality criterion referring to the degree to which inferences made in a study are accurate and well-founded, in measurement and the degree to which an instrument measures what it is intended to measure (Polit & Beck 2017:747). Validity indicates whether the conclusions of the study are justified based on design and interpretation (Botma, et al. 2016:174). In this study, the pre-test was used to evaluate the validity and reliability of the instrument. The types of validity included in this study were content, face, and construct validity.

3.4.1.1 Content validity

Polit and Beck (2017:310) define ‘content validity’ as the extent to which an instrument’s content adequately captures the construct, that is, whether an instrument has an appropriate sample of items for the construct being measured. The main aim is to evaluate individual items of the instrument, and to assess whether individual items are relevant and appropriate in terms of the construct (Polit & Beck 2017:310). The researcher adapted a pre-existing questionnaire that was used in a previous study by Deribe, et al. (2008:4-7).

The HBM was used to structure the questionnaire because it focuses on patient compliance and preventive health care practices. The supervisor and statistician were requested to evaluate the items on the instrument. The UNISA and Mankweng librarians assisted the researcher in the literature search on information related to HIV status disclosure. The researcher extensively reviewed the literature which deals with HIV disclosure to refine the instrument.

The data collection instrument was tested with a pre-test on a small number of respondents from the population, to investigate the feasibility of the proposed study and to test the data collection instrument prior to the main research. The pre-existing questionnaire enhanced validity as it was previously implemented and tested. The supervisor and two field experts assisted the researcher in the refinement of the instrument.

3.4.1.2 Face validity

Face validity refers to whether the instrument looks like it is measuring the target construct (Polit & Beck 2017:310). The researcher constructed the questionnaire in such a way that it identified and described the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. Two field experts who worked in the ARV clinics were asked to review the instrument used in the study, to determine whether the questionnaire measured what it was supposed to measure. Based on their feedback, the questionnaire was refined. They recommended that two questions: “have you ever experience sexual assault” and “do you drink alcohol?” should be removed as they were not associated with HIV status disclosure.

3.4.1.3 Construct validity

Construct validity is defined as the degree to which evidence about a measure scores in relation to other scores support the inference that the construct has been appropriately represented. Construct validity occurs when investigators use adequate definitions and measures of variables. Construct validity is especially relevant for abstract constructs that are measured either by self-report or through observational methods, but may also be relevant for performance tests (Polit & Beck 2017:315).

The research instrument measured feelings such as anxiety related to fear of rejection or discrimination, grief related to abandonment by a partner and in relation to the topic under study. The questionnaire covered these emotions in detail. The researcher also obtained information from the HBM regarding perceived susceptibility, perceived severity, perceived benefits and costs, motivation, and enabling or modifying factors. Self-efficacy was ensured as components of the HBM were covered in the questionnaire. Literature, the two field experts who were offering their services to the HIV positive pregnant women who are on ART, and the researcher’s supervisor, also assisted in ensuring construct validity.

3.4.2 Reliability

Reliability is the extent to which a measurement is free from error, more broadly, the degree to which scores for people who have not changed are the same for repeated measurements; statistically, the proportion of total variance in a set of scores that is attributable to true differences among those being measured (Polit & Beck 2017:742). It indicates whether scores to items on an instrument are internally consistent, stable over time, and whether there was consistency in test administration and scoring (Creswell 2014:247). It means that a reliable measurement procedure will produce identical or nearly identical measures if the same variable is measured under the same conditions. The questionnaire was tested for reliability, and specifically for internal consistency during the pre-test. Reliability was enhanced as components of the instrument were adapted from previous studies where it was implemented and tested. The instrument was structured in such a way that only data necessary to achieve research objectives was collected. Chronbach's alpha co-efficient was used by the original developers of the questionnaire (De Vos, et al. 2017:177-178). Data were entered into an Excel spreadsheet and SPSS 24 was utilised to analyse data.

In this study, short and close-ended questions, as well as structured and open-ended questions were prepared by the researcher in English for accuracy and consistency of information gathered. Respondents who were unable to read and write were assisted by the researcher. The researcher re-read the information provided by the respondents to make sure that the information written was the respondents' words. The researcher was always available to provide clarity to respondents if required to increase response rate. During the instrument's development phase, the following steps were taken to ensure that only relevant information was considered: stability of the research instrument, internal consistency, and equivalence reliability. Internal consistency addresses the extent to which all reliability was appropriate when the instrument is examining one concept at a time, for example, "disclosure" (Botma, et al. 2016:177).

The instrument was consistent as it enabled the researcher to analyse the collected data, and it illustrated similarities and differences.

3.5 DATA ANALYSIS

In data analysis, the researcher observes patterns in data, asks questions about those patterns, forms conjectures, confirms or refutes conjectures, collects data from specific individuals on targeted topics, continuously analyses data, asks additional questions, seeks more data, and does further analysis by sorting, questioning, thinking about, and constructing and testing conjectures (Botma, et al. 2016:221). According to De Vos, et al. (2017:249), quantitative data analysis can be regarded as the techniques by which researchers convert data to numerical form and subject it to statistical analysis. The purpose of analysis is thus to reduce data to an intelligible and interpretable form so that the relations of research problems can be studied and tested, and conclusions drawn.

The collected data were transformed or coded into numbers before data analysis was done. A data set was obtained followed by statistical analysis. Coded data were entered into an Excel spreadsheet to create a data set and wild codes were verified by the researcher. Data were captured and analysed using the SPSS version 24 computer software program, with the assistance of a statistician. Descriptive statistics were used to describe and summarise data by converting and condensing the collected data into an organised, visual representation or picture in the form of percentage and frequency. Thematic coding was done to analyse open-ended questions. It was used to provide depth to the quantitative data as it focused on motivators and challenges of disclosure, as well as its benefits and disadvantages.

Studies that involve human beings need to observe certain ethical standards, to protect and promote the well-being of the individual. The next topic will explain ethical principles in detail.

3.6 ETHICAL CONSIDERATIONS

The previous section elaborated on criteria for evaluating an instrument. This section will explain ethical aspects relating to this study. Prior to the beginning of the study, the researcher needed to consider codes of ethics. Therefore, the researcher applied to the institutional review board of the college and university campuses, got respondents to sign an informed consent form agreeing to the study before they provided data, obtained necessary permissions, and selected a site without vested interests (Creswell 2014:95-96). According to the guidelines set by the NHREC (2015: 10 Section1.4), all research involving human participants in South Africa must be reviewed by an accredited research ethics committee (Botma, et al. 2016:12).

Research that involves humans as subjects should comply with the basic ethical principles when generating or refining knowledge, including protecting human rights, understanding informed consent, understanding institutional review of research, and examining the balance between the benefits and risks of the study. According to Polit and Beck (2017:137), the following codes of ethics were observed in this study: permission to conduct the study, ethical principles for protecting respondents, right to privacy, beneficence, justice, and confidentiality and anonymity.

3.6.1 Permission to conduct the study

The researcher obtained ethical approval from the Higher Degrees Committee of the Department of Health Studies at UNISA (Reference number HSHDC/484/2015) (Annexure A). Approval was obtained from the Limpopo Department of Health (Annexure C), three hospital ARV clinic units' managers/facility supervisors (Annexure D), the developers of the questionnaire (Annexure E), and respondents gave informed consent (Annexure H). Respondents signed an informed consent form as an indication that they received the relevant information and voluntarily participated in the study before completing the questionnaire.

3.6.2 Ethical principles for protecting respondents

Polit and Beck (2017:727) define 'ethics' as a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal, and social obligations to study participants. Creswell (2014:97-98) states that there are fundamental ethical principles that guide researchers during the data collection process. To that end, the researcher discloses the purpose of the study, respects the site, disrupts as little as possible, and makes sure that all participants receive the benefits, avoids deceiving participants, respects potential power imbalances, avoids exploitation of participants, and avoids collecting harmful information. These principles are based on the human rights that need to be protected in research, namely the right to respect human dignity and privacy, anonymity and confidentiality, fair treatment, and being protected from discomfort and harm.

3.6.3 Right to privacy

Research with humans involves intrusions into personal lives. Researchers should ensure that their research is not more intrusive than it needs to be and participants' privacy is maintained. Botma, et al. (2016:277) state that privacy must be respected and risks to participants should be minimal. Respondents have the right to expect that their data will be kept in the strictest confidence (Polit & Beck 2017:141). The researcher respected the privacy of the respondents during the data collection session; only one respondent was allowed in the private room without distractions during the time it took to complete the questionnaire. The information provided by the respondents was not linked to them personally as the data were combined to form a bigger picture about status disclosure to partners. A message was posted on the door: “do not disturb, interview in progress”.

The researcher explained the nature and purpose of the study, and assured respondents that the results might contribute to assist health care workers with disclosure education to enhance status disclosure by HIV positive pregnant women to their partners in future.

3.6.4 Beneficence

Beneficence imposes a duty on researchers to minimise harm and maximise benefits (Polit & Beck 2017:139). The topic under discussion is a sensitive one; therefore, the researcher offered respondents information about the purpose of the research to give them an opportunity to consider if they were willing to take part. The researcher provided debriefing sessions for the respondents to express their feelings and ask questions. A private room at the ARV clinic away from the public was utilised by the researcher to prevent stigmatisation. None of the respondents experienced a need or wished to be referred to the psychologist (free of charge) for emotional support. The respondents were told that participation in this study was voluntary, and that they could terminate at any point in time without losing treatment benefits and no incentive was given. Respondents would not benefit from the study directly, but pregnant women who need to disclose their HIV status to their partners in future might benefit as barriers of disclosure would be explored. The researcher is a trained health professional who could identify respondents who could not cope during the study to refer them to a psychologist for follow-up. The researcher's contact details were provided if support was needed at a later stage or if questions arose.

3.6.5 Principle of justice

The principle of justice means that participants should be treated fairly. The researcher should adhere to the information given in the information leaflet (Botma, et al. 2016:19-20). Respondents who complied with the inclusion criteria and who were at the ARV clinic during the data collection period were chosen. The time that the respondents took to answer the questionnaire did not exceed the estimated time. No follow-up of respondents was done after the data were collected.

3.6.6 Confidentiality and anonymity

Polit and Beck (2017:147) define 'confidentiality' as the pledge that the information participants provide will not be publicly reported in a manner that identifies them. Confidentiality can be viewed as a continuation of privacy, which refers to agreements between persons that limit others' access to private information (De Vos, et al. 2017:119). The respondents were given the questionnaires to complete in a quiet private room at the ARV clinics, and they were assured that the information collected would be kept in the strictest confidence; no names were linked with the information obtained.

Anonymity is defined as the protection of participants' confidentiality to such a degree that even the researcher cannot link individuals with the data they provided (Polit & Beck 2017:719). The respondents were informed not to write their names on the questionnaires. They were notified that raw data would be entered into the computer using codes. They were assured that their names or that of the hospital would not appear on the research report as an HIV positive status is highly confidential. The respondents were assured that the questionnaires were not made available to anyone who was not directly involved in the study. Those who were involved signed a confidentiality agreement. A locked box was provided in the room where the questionnaires were completed to return the completed questionnaires, so that respondents did not feel that they would be seen by others who participated in the study when they return the questionnaires and thereby know their status. The researcher collected the box on the same day of data collection. The box was kept under lock and key, and only the researcher had access to the completed questionnaires.

3.6.7 Respect for human dignity

The principle of respect for human dignity includes the right to self-determination and the right to full disclosure.

3.6.7.1 The right to self-determination

Humans should be treated as autonomous agents, capable of controlling their actions. Self-determination means that prospective participants can voluntarily decide whether to take part in a study, without risk of prejudicial treatment. It also means that people have the right to ask questions, to refuse to give information, and to withdraw from study (Polit & Beck 2017:140). The respondents were provided with an information leaflet and made aware that they would sign an informed consent form if they agreed to participate in the study and to indicate that there was no coercion. Participation in the study was not compulsory, therefore, respondents were told that they could terminate their participation at any time without losing benefits. It was made clear that if respondents withdrew from the study, they would not be affected in terms of the treatment they receive at the ARV clinics or hospitals. The researcher’s contact number was given to the respondents in the event of further questions, comments, and complains. The respondents voluntarily completed the questionnaire at the ARV clinics.

3.6.7.2 Right to full disclosure

Full disclosure means that the researcher has fully described the study, the person's right to refuse participation, the researcher's responsibilities, and the likely risks and benefits (Polit & Beck 2017:140). The researcher provided the respondents with a written information leaflet which was comprehensive regarding the purpose, objectives and process of the research; no information was withheld. The researcher was available to answer any questions from respondents.

3.6.8 Informed consent

Informed consent is an ethical principle that requires researchers to obtain peoples' voluntary participation, after informing them of possible risks and benefits (Polit & Beck 2017:731). Respondents were informed about the purpose of the study and that they could participate in the study by answering the questionnaire if they so wished. The respondents were told that they could withdraw from taking part without losing treatment benefits and no incentives were given for participating in the study. There were no risks for participating in the study and none of the respondents required to be referred to the psychologist for emotional support. The study may benefit future HIV positive pregnant women who have barriers of disclosing their status to their partners. Respondents completed the consent form before participating in the study.

3.6.9 Significance of the study

The significance or value of the study often refers to the influence on clinician practice, the influence on programmes, methods or interventions, what will improve, and how it should be implemented (Botma, et al. 2016:281). Creswell (2014:248) states that the significance of the study in an introduction conveys the importance of the problem for different audiences that may profit from reading and using the study. The perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province were investigated. The identification and knowledge of perceived barriers of HIV status disclosure could enlighten society and reduce new infections. Adherence to treatment will be enhanced while MTCT may be reduced, lowering morbidity and mortality in the entire society.

The proposed results of the research might contribute to the already existing knowledge in the Capricorn District and improvements in quality of life for the pregnant women with HIV upon disclosure of their status to their partners. The findings of the study might strengthen the accessibility and availability of disclosure education and improve the current practice. The results of the study will lead to the development of guidelines which will assist health care workers with disclosure education to enhance status disclosure of HIV positive pregnant women to their partners. This can assist practitioners to improve the practice and inform policy makers to address challenges related to barriers of status disclosure of HIV positive pregnant women to their partners in the Capricorn District, Limpopo Province.

3.7 SUMMARY

This chapter discussed the research methodology, including the research design, population, settings, sample and sampling techniques, data analysis, as well as ethical considerations to meet the research objectives. Quantitative, descriptive, exploratory and cross-sectional research designs were also outlined. In the next chapter, the study findings will be analysed.

CHAPTER 4

ANALYSIS, PRESENTATION AND DESCRIPTION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

The previous chapter reflected on the research process. Chapter 4 will focus on the analysis of data and the presentation thereof in tables and figures. The purpose of this chapter is to present and describe the empirical findings of this research. The aim of the study was to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province, to enhance status disclosure to partners through disclosure education by health care workers.

The objectives of the study were to:

- Explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.
- Make recommendations on disclosure education to health care workers performing VHCT to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings.

Data were collected from the 1st February to the 3rd of May 2017 from respondents that were conveniently sampled. One hundred and eighty-six (186) questionnaires were handed out, 171 questionnaires were returned, and one (1) was discarded (N=170).

During the description of the findings, the immediate results were translated into integrated and meaningful statistics and findings. The findings were proved to be related to the objectives of the research. The success of this study was assured through the data analysis and description of findings which were carried out in an orderly manner.

4.2 DATA MANAGEMENT AND ANALYSIS

This section presents the research results, discussions and conclusion. The findings were supported, interpreted and integrated with literature. Data were manually coded and recorded in an Excel spreadsheet with the assistance of a statistician. The symbol ‘N’ will refer to the total number of subjects (respondents), while the symbol ‘n’ will refer to the number of subjects (respondents) in a subgroup of the study (Polit & Beck 2012:loc 24262b, Polit & Beck 2017:358). The term ‘respondent’ will refer to a pregnant woman who is HIV positive, who meets the inclusion criteria, and who attended the ARV clinic at the identified hospitals. Where applicable, the researcher rounded the percentages off to the 100th after the decimal. If the number was more than 5, one was added to the digit. If it was less than 5, it remained unchanged (Taylor-Powell n.d.).

4.2.1 Response rate, results and discussions

The results are illustrated with tables, graphs, and charts. This chapter reveals the responses on a question-by-question basis. Results from all sections of the questionnaire are also compared to existing empirical evidence to assess consistency. Table 4.1 shows the statistics on the response rate of questionnaires provided to pregnant women on HIV status disclosure to their partners in the Capricorn District, Limpopo Province.

Table 4.1: Response rate (N=170)

Sample	Total	Percentage
Original sample	186	100%
Not returned	15	8.06%
Returned	171	91.93%
Discarded	1	0.58%
Response rate	170	91.40%

Table 4.1 illustrates that a total of 186 questionnaires were provided to respondents and 171 questionnaires were returned. Of the returned questionnaires, one (1) was

incomplete and discarded. Thus, 170 questionnaires were analysed (N=170). This gave a 91.40% response rate which is high enough to guarantee accurate results. The response rate is defined as the rate of participation in a study, calculated by dividing the number of people participating by the number of people sampled (Polit & Beck 2017:743). Polit and Beck (2017:256) further state that a well-designed study normally achieves response rates of 80% to 90%.

4.2.2 Statistical analysis

Statistical analysis is the organisation and analysis of quantitative data using statistical procedures, including both descriptive and inferential statistics (Polit & Beck 2017:725a).

4.2.2.1 Statistical software

Data analysis enables the researcher to organise and communicate numeric information (Polit & Beck 2012:379a).

A statistician from the University of Limpopo was consulted and the software program SPSS version 24 was used to analyse data obtained from the questionnaires (Annexure G).

4.2.2.2 Descriptive statistical analysis

Data were summarised and presented by making use of descriptive statistics. Tables, charts, graphs and percentages were used in the presentation of the frequencies and percentages of the findings. The mean, standard deviation, minimum and maximum values for all scaled questions were also computed and used in the explanation of the findings.

4.2.2.3 Inferential statistical analysis

A Chi-squared test is a distribution-free or non-parametric test used to test hypotheses when the data are presented in a contingency table. It tests for differences between observed and expected values (Botma, et al. 2016:172-173). A Chi-squared test was performed to respond to the research question: 'What are the perceived barriers of HIV status disclosure of pregnant women to their partners?' The interpretation was reflected in tables and is illustrated as specified values, bar charts, and multiple bar charts. In addition, pie charts and percentage component bar charts were used to indicate proportions. The next section outlines the research results.

4.3 RESEARCH RESULTS

The results are presented in four sections: Section A: Socio-demographic characteristics of respondents; Section B: Sexual and reproductive health information; Section C: The motivating and enabling/modifying factors; and Section D: Challenges/Barriers of HIV status disclosure.

4.3.1 Section A: Socio-demographic characteristics of respondents

The researcher required respondents' personal information. This included age, religion, marital status, period with the current partner, number of children alive and deceased, duration of pregnancy, educational status, employment status, and head of household. Demographic information was useful in determining and comparing patterns among different categories of the research respondents. Some of the calculations are based on the number of respondents who answered the question.

Table 4.2: Frequency distribution: Demographic characteristics of the study respondents

Demographic characteristics	HIV positive pregnant women	
Age (N=170)	**Frequency**	**Percentage**
18 – 20	7	4.12%
21 – 35	132	77.65%
36 – 40	31	18.23%
Total	170	100%

Demographic characteristics	HIV positive pregnant women	
Religion (n=160)	**Frequency**	**Percentage**
Christian	157	98.13%
Hindu	1	0.62%
Muslim	2	1.25%
Total	160	100%
Did not indicate	10	6.25%
Relationship Status (N=170)	**Frequency**	**Percentage**
Married	34	20,00%
Single	94	55.29%
Separated	1	0.59%
Widowed	2	1.18%
Cohabiting	39	22.94%
Total	170	100%
Duration with current partner (N=170)	**Frequency**	**Percentage**
≤ 1 year	31	18.24%
2-5 years	69	40.59%
6-10 years	42	24.70%
> 10 years	28	16.47%
Total	170	100%
Number of children alive (n=152)	**Frequency**	**Percentage**
1	49	32.24%
2	49	32.24%
3	35	23.03%
4	10	6.57%
5	7	4.60%
6	1	0.66%
7	1	0.66%
Total	152	100%
Not indicated	18	10.58%

Demographic characteristics	**HIV positive pregnant women**	
Number of children deceased (N=170)	**Frequency**	**Percentage**
1	23	13.53%
2	4	2.36%
3	2	1.17%
5	1	0.58%
Not deceased	140	82.36%
Total	170	100%
Period of pregnancy (N = 170)	**Frequency**	**Percentage**
≤ 3 months	1	0.59%
4-6 months	9	5.30%
> 6 months	160	94.11%
Total	170	100%
Place of origin (N=170)	**Frequency**	**Percentage**
Rural	163	95.88%
Urban	7	4.12%
Total	170	100%
Employment status (N=170)	**Frequency**	**Percentage**
Employed: Part-time	16	9.41%
Full-time	26	15.29%
Self-employed	7	4.12%
Unemployed	121	71.18%
Total	170	100%
Level of education (N=170)	**Frequency**	**Percentage**
No education	1	0.58%
Primary school	7	4.12%
Secondary school	118	69.42%
College	40	23.52%
University	4	2.36%
Total	170	100%

Demographic characteristics	HIV positive pregnant women	
Partner's level of education (n=163)	**Frequency**	**Percentage**
No education	2	1.23%
Primary school	2	1.23%
Secondary school	107	65.64%
College	31	19.02%
University	21	12.88%
Total	163	100%
Not indicated	7	4.11%
Head of household (N=170)	**Frequency**	**Percentage**
Father	22	12.94%
Mother	50	29.42%
Brother	5	2.95%
Sister	6	3.52%
Husband	68	40,00%
Self	19	11.17%
Total	170	100%

4.3.1.1 Age of respondents (in years)

The age distribution enabled the researcher to be aware of the respondents' age intervals. The most represented age group was 21-35 years. The researcher was interested in respondents' age ranges between 18-40 years. The respondents in this age group were included in this study as the majority of them delivered their babies during this period. The minimum age of the respondents was 18 years, while the maximum age was 39 years old, and the average age was 30 years old. One hundred and thirty-two (132) out of 170 (77.65%; *f*=132) respondents were between 21-35 years, while 31 out of 170 (18.24%; *f*=31) respondents were aged 36-40 years. Only 7 out of 170 (4.12%; *f*=7) respondents were between 18-20 years (Refer to Table 4.2). Table 4.2 shows that most respondents delivered their babies between the ages of 21 and 35 years.

4.3.1.2 Religion affiliation of respondents

The religious affiliation of respondents is discussed to identify the beliefs and practices regarding the perceived barriers the respondents have in disclosure of their HIV status to their partners.

One hundred and sixty (160) respondents answered this question. Of all of the respondents who answered this question, 157 (98.13%; *f*=157) were Christians, 10 (5.88%; *f*=10) did not indicate their religion, 1 (0.62%; *f*=1) was Hindu, and 2 (1.25%; *f*=2) were Muslims. Therefore, in this study, the majority of HIV positive pregnant women were Christians (Refer to Figure 4.1).

The Christian, Hindu and Muslim religious groups were represented in the study. Only 10 out of 160 (5.88%; *f*=10) respondents did not wish to report their religious affiliation. This needs to be taken into account when interpreting religious affiliation data.

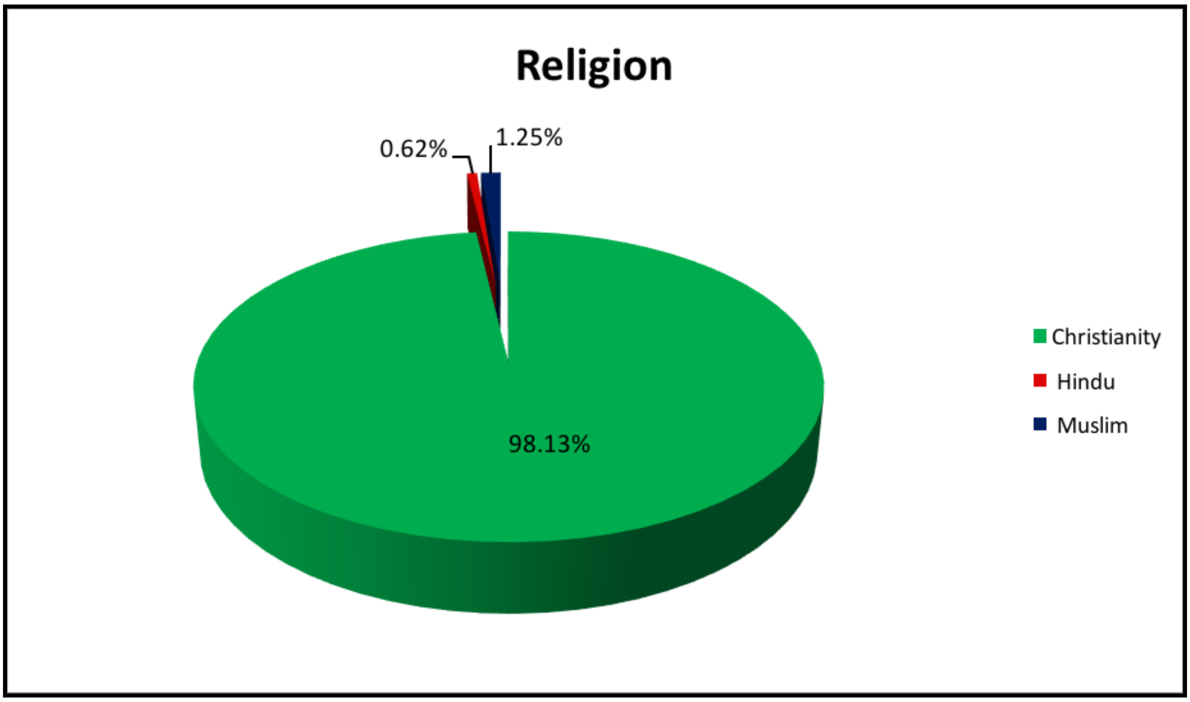
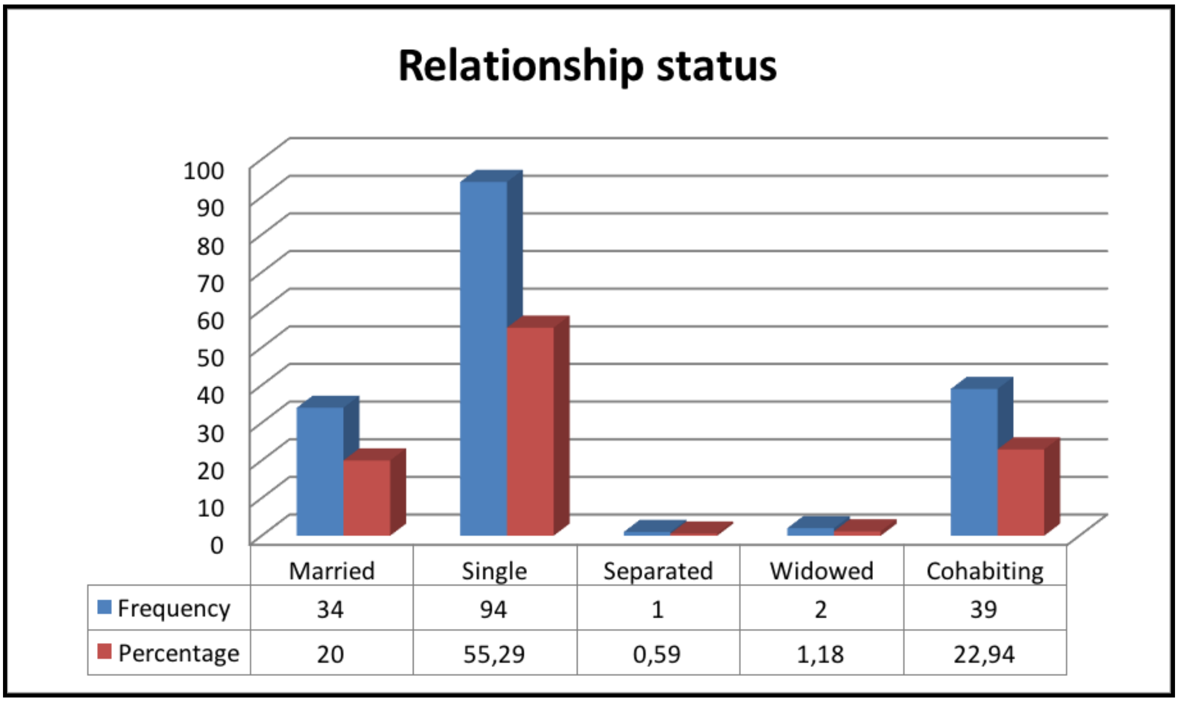


Figure 4.1: Religion affiliation of respondents (n=160)

4.3.1.3 Relationship status

Marital status was one of the demographic variables of the sample which was used to determine and compare patterns among different categories of the research respondents whereby they were to indicate: married, single, separated, widowed, and cohabiting. The categories were required to determine conditions/situations which are favourable for the respondents to disclose their HIV status to their partners.

All of the respondents answered this question (N=170). Table 4.2 indicates that 94 out of 170 (55.29%; *f*=94) respondents were single (not married), 34 (20%; *f*=34) respondents were married, only 1 (0.59%; *f*=1) respondent was separated from her husband, 2 (1.18%; *f*=2) respondents were widows, and 39 (22.94%; *f*=39) respondents were cohabiting (living together without being married).



	Married	Single	Separated	Widowed	Cohabiting
🟦 Frequency	34	94	1	2	39
🟥 Percentage	20	55,29	0,59	1,18	22,94

Figure 4.2: Relationship status of respondents (N=170)

Figure 4.2 shows a graphical representation of both the frequency and percentages of marital status of all 170 respondents. Based on these study findings, 94 out of 170 (55.29%; *f*=94) respondents were single (not married).

4.3.1.4 Duration or period with current partner

All of the respondents answered this question (N=170). The duration of a relationship with the current partner ranged from less than one year to more than 10 years. Thirty-one (31) (18.24%; *f*=31) respondents were in their relationship less than a year, 69 (40.59%; *f*=69) respondents were in their relationship between 2-5 years, 42 (24.70%; *f*=42) respondents were in their relationship between 6-10 years, and 28 (16.47%; *f*=28) respondents were in their relationship more than 10 years. The shortest relationship period was less than a year (< 12 months) and the longest relationship was more than 10 years.

4.3.1.5 Number of children alive

This question focused on the number of children still alive for each individual respondent. The numbers of children still alive ranged from 1 to 7. As indicated in Table 4.2, 152 out of 170 (89.41%; *f*=152) respondents answered this question and 18 out of 170 (10.58%; *f*=18) did not indicate the number of their children that are alive because it was their first pregnancy. Forty-nine (49) out of 152 (32.24%; *f*=49) respondents had only 1 child alive, 49 out of 152 (32.24%; *f*=49) respondents had 2 children alive, 35 out of 152 (23.03%; *f*=35) respondents had 3 children alive. Ten (10) out of 152 (6.57%; *f*=10) respondents had 4 children alive, 7 out of 152 (4.60%; *f*=7) respondents had 5 children alive, 1 (0.66%; *f*=1) respondent had 6 children alive, and 1 (0.66%; *f*=1) respondent had 7 children alive.

4.3.1.6 Number of children deceased

This is one of the variables which is sensitive, but it was used in this research study to display the impact that non-disclosure of HIV status to the partner has. This question focused on the number of children deceased for each individual respondent. The numbers of children deceased ranged from 1 to 5. On average, each respondent had 2 children who were deceased.

Table 4.2 shows that 23 out of 170 (13.53%; *f*=23) respondents had lost 1 child, 4 (2.36%; *f*=4) respondents lost 2 children, 2 (1.17%; *f*=2) respondents lost 3 children, and 1 (0.58%; *f*=1) respondent lost 5 children. The table further indicates that 140 (82.36%; *f*=140*)* respondents did not have any deceased children.

4.3.1.7 Period of pregnancy

Respondents indicated the period of pregnancy according to specific intervals. The intervals were as follows: ≤ 3 months, 4-6 months, and > 6 months (Refer to Table 4.2 and Figure 4.3).

Table 4.2 indicates that 1 (0.59%; *f*=1) respondent was less than 3 months pregnant, 9 (5.30%; *f*=9) respondents were 4-6 months pregnant, while 160 (94.11%; *f*=160) respondents were more than 6 months pregnant during the data collection period. Figure 4.3 shows the percentage representation of pregnancy intervals for the 170 respondents.

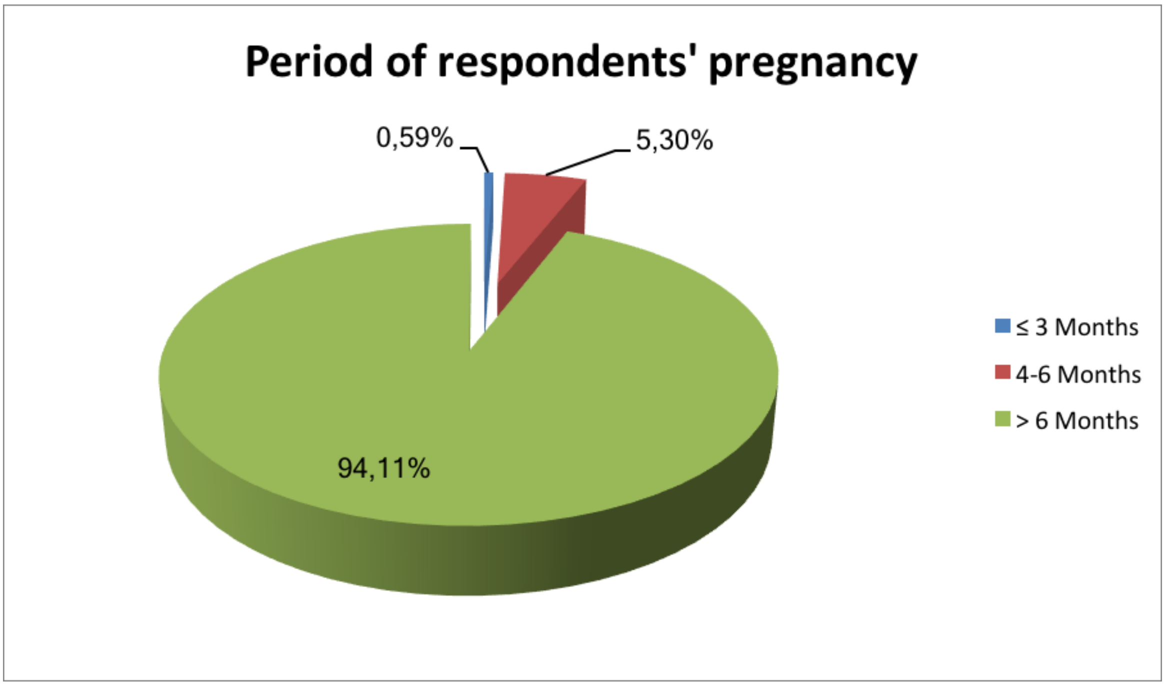


Figure 4.3: Period of respondents' pregnancy (N=170)

4.3.1.8 Place of origin

Place of origin referred to where respondents grew up, and was subdivided into two categories: rural and urban. All respondents answered this question (N=170) and the results in Table 4.2 illustrate that 163 (95.88%; *f*=163) respondents grew up in rural areas while only 7 (4.12%; *f*=7) respondents grew up in urban areas. Most respondents grew up in rural villages (Refer to Figure 4.4).

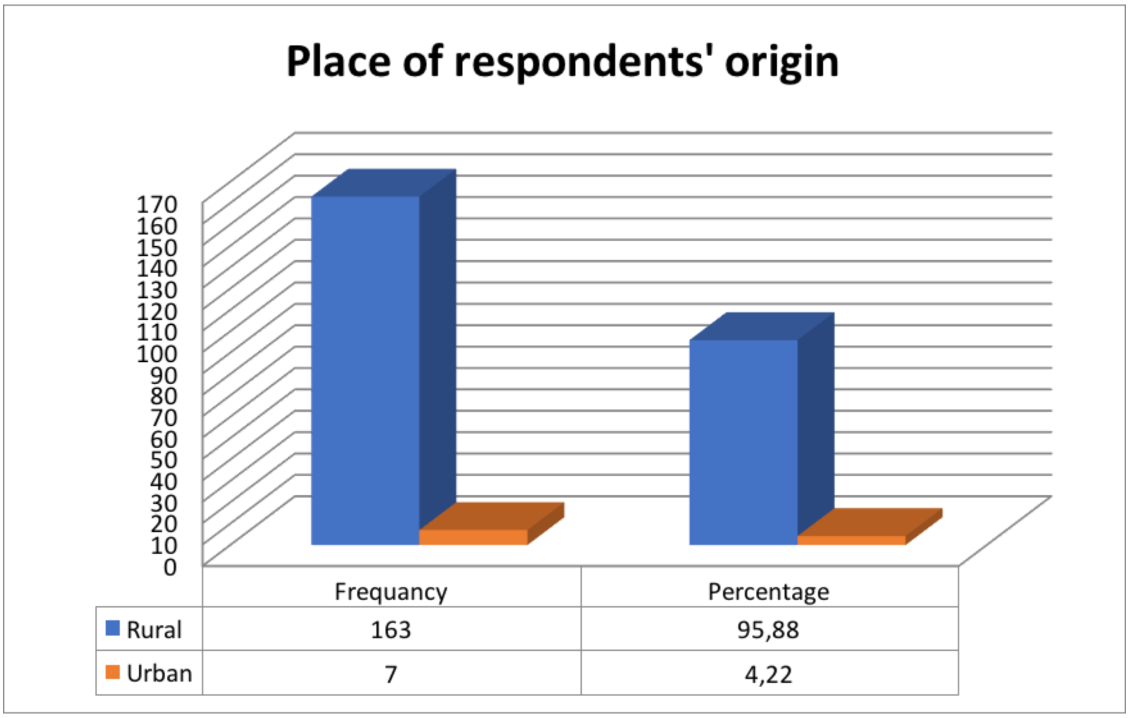


Figure 4.4: Place of respondents' origin (N=170)

4.3.1.9 Employment status

The researcher wanted to explore the correlation between employment status and the rate of HIV infection. Respondents' employment status was categorised into the following groups: employed, self-employed, full-time, part-time, and unemployed. All 170 respondents answered this question (N=170).

According to Table 4.2, 16 (9.41%; *f*=16) respondents were employed part-time, 26 (15.29%; *f*=26) respondents were employed full-time, 7 (4.12%; *f*=7) respondents were self-employed, and 121 (71.18%; *f*=121) respondents were unemployed (Refer to Figure 4.5).

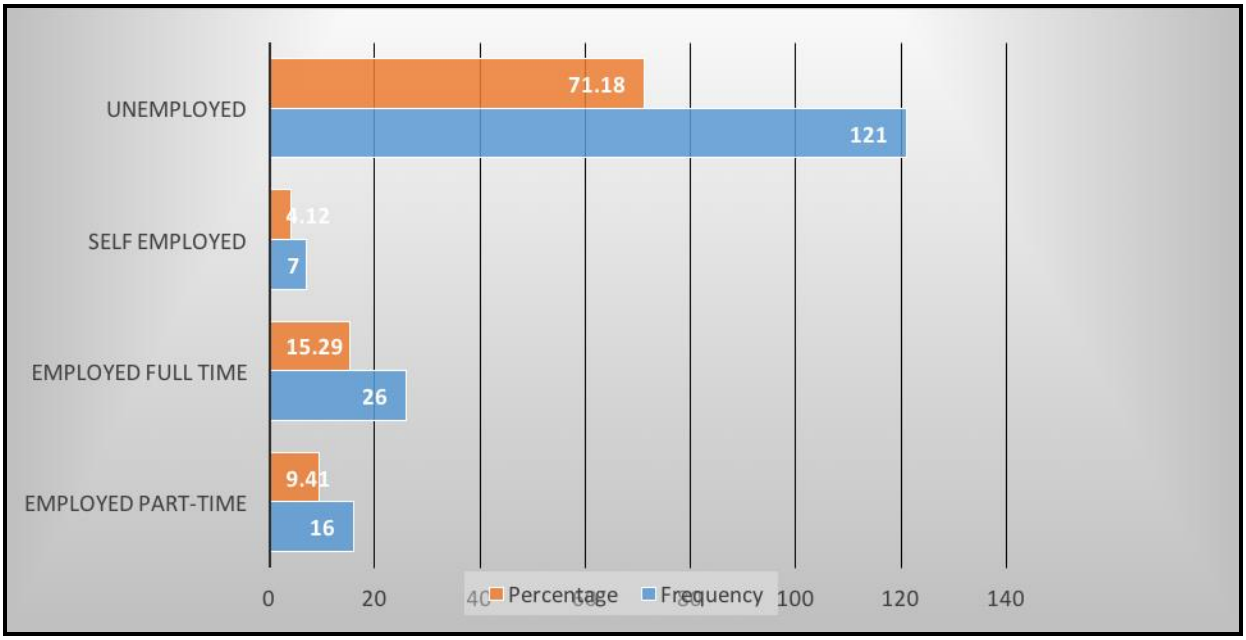


Figure 4.5: Employment status of respondents (N=170)

4.3.1.10 Respondents' level of education

All respondents answered this question (N=170). The level of education was divided into the following categories: No education, primary school, secondary school, college, and university.

As indicated in Table 4.2, 1 out of 170 (0.58%; *f*=1) respondents did not attend any formal school, 7 out of 170 (4.12%; *f*=7) respondents attended up to primary level, 118 out of 170 (69.42%; *f*=118) respondents attended secondary school, 40 out of 170 (23.52%; *f*=40) respondents attended up to college level, and only 4 out of 170 (2.36%; *f*=4) respondents attended up to university level.

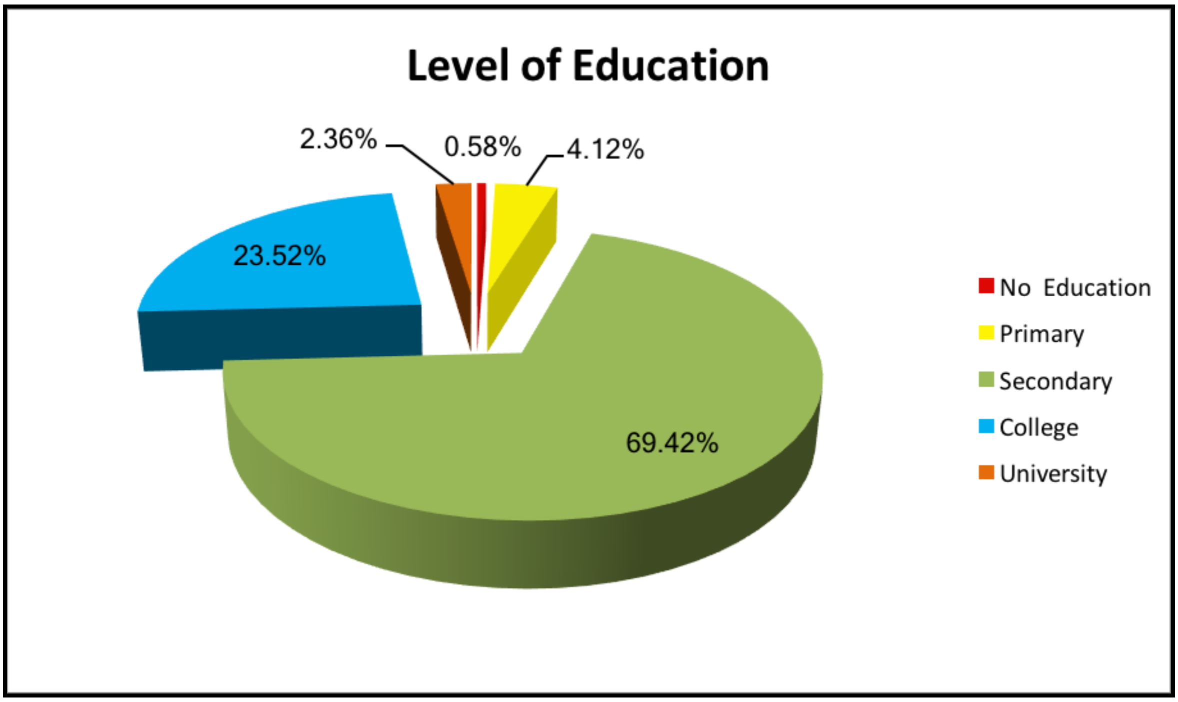


Figure 4.6: Respondents' level of education (N=170)

The results in Figure 4.6 portray that most of the respondents' (69.42%) level of education was secondary.

4.3.1.11 Partner's level of education

The partners' level of education was categorised into the following five groups: no education, primary school, secondary school, college, and university. Table 4.2 shows that 7 out of 170 (4.11%; *f*=7) respondents did not answer the question. The calculations were thus based on the 163 respondents who answered the question.

Table 4.2 indicates that 2 (1.23%; *f*=2) respondents' partners did not attend any formal school, 2 (1.23%; *f*=2) respondents' partners attended primary level, 107 (65.64%; *f*=107) respondents' partners went up to secondary school level, 31 (19.02%; *f*=31) respondents' partners attended up to college level, and 21 (12.88%; *f*=21) respondents' partners attended up to university level.

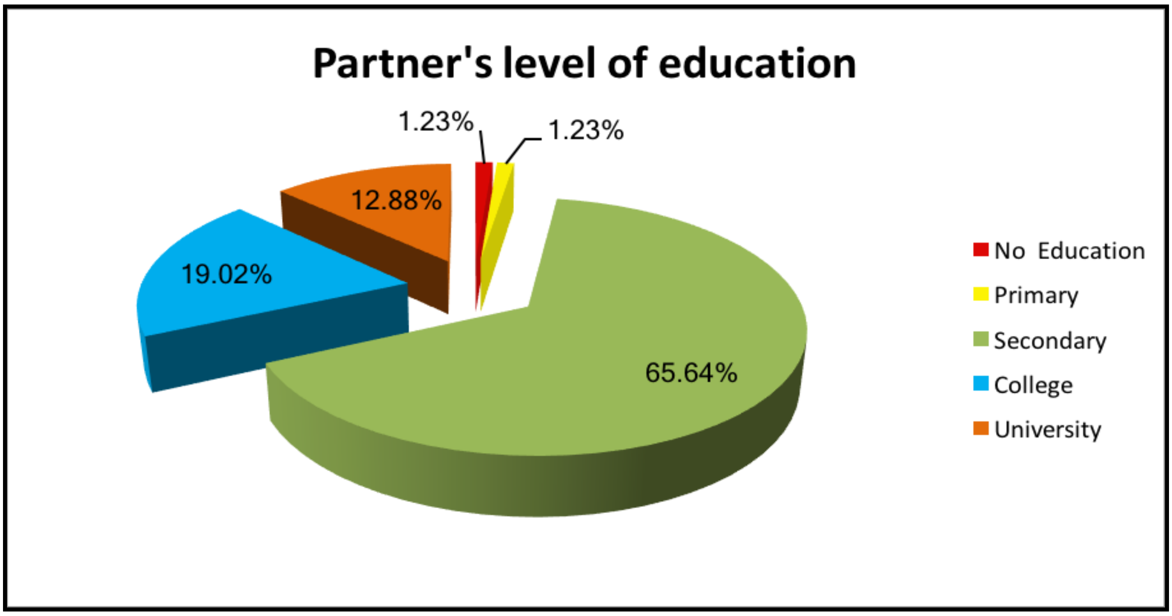


Figure 4.7: Partner's level of education (n= 163)

The results in Figure 4.7 shows that most respondents' partners' level of education was secondary school as indicated by 107 out of 163 (65.64%; *f*=107) respondents. Figure 4.8 displays the comparison of respondents and their partners' level of education.

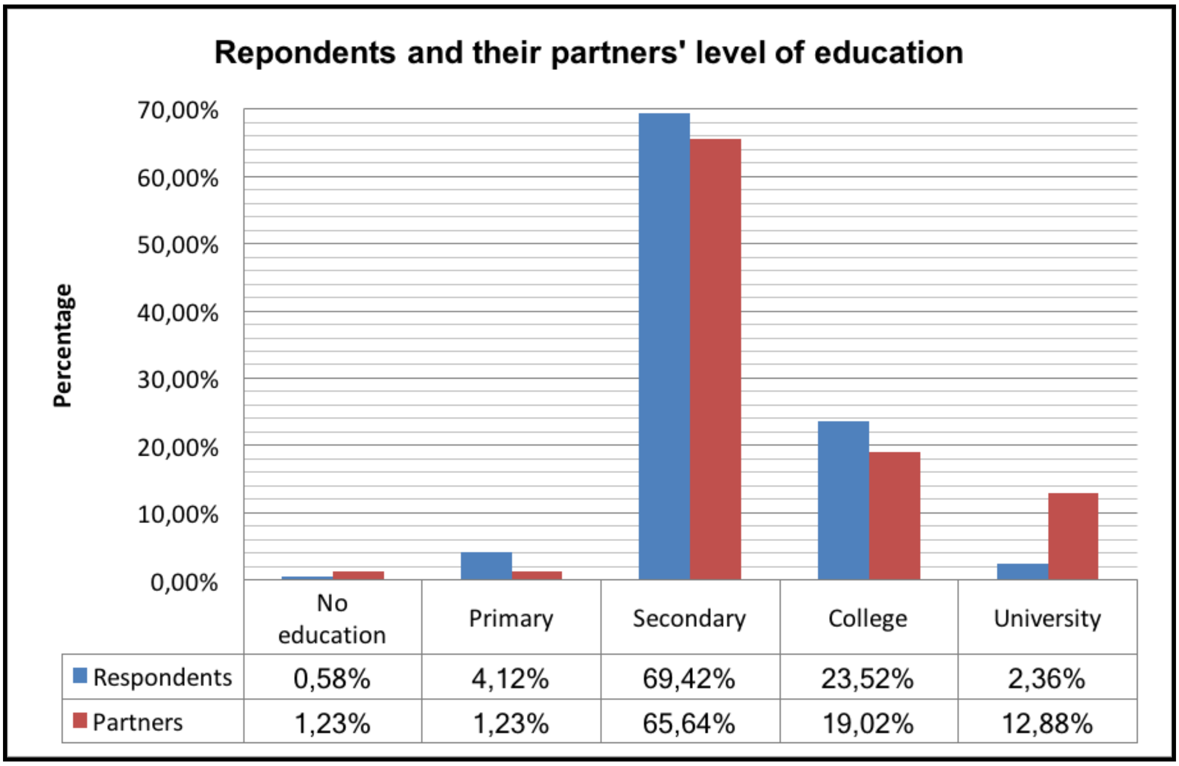


Figure 4.8: Respondents and their partners' level of education

Figure 4.8 shows that the respondents had higher levels of education at primary, secondary and college level, while at university level the partners' level of education was higher than that of the respondents.

4.3.1.12 Head of the household

Head of the household was categorised as follows: father, mother, brother, sister, husband, and self. Frequency and percentages are represented in Table 4.2. whereby 22 out of 170 (12.94%; *f*=22) respondents indicated that their families were headed by their fathers, 50 (29.42%; *f*=50) respondents stated the household was headed by their mothers, 5 (2.95%; *f*=5) respondents reported that the household was headed by their brothers, 6 (3.52%; *f*=6) respondents indicated the head of the household was their sisters, 68 (40%; *f*=68) respondents indicated their husbands as the head of the household, and 19 (11.17%; *f*=19) respondents reported their households were headed by themselves. Refer to Figure 4.9 for a visual representation of the information.

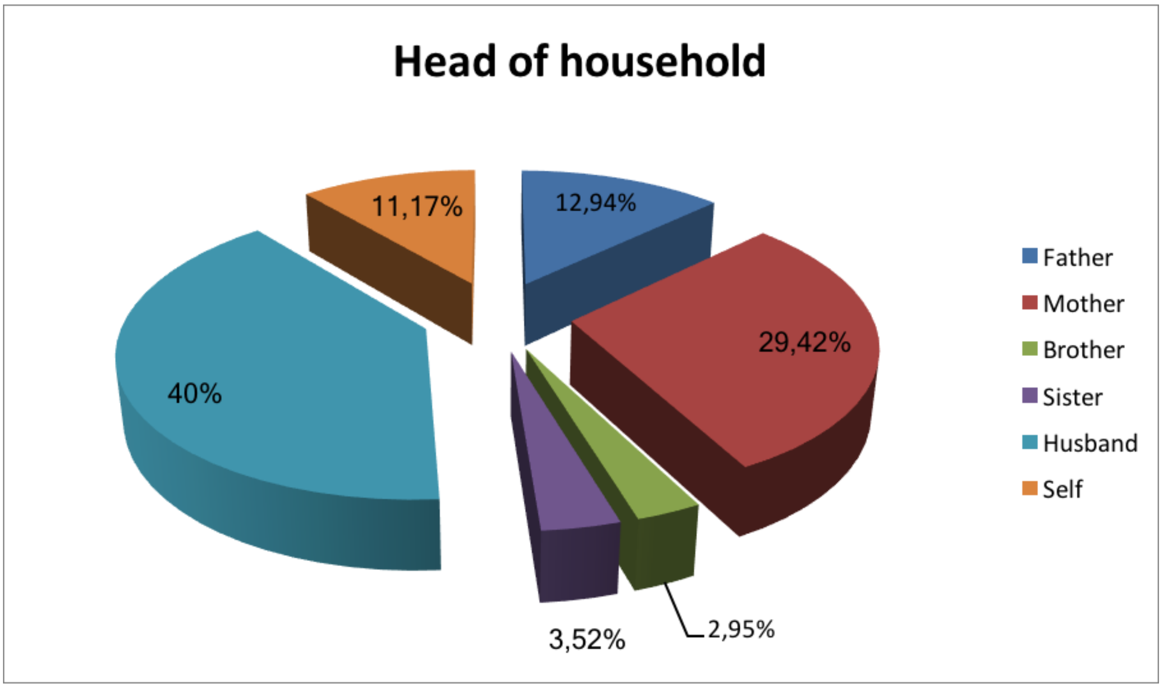


Figure 4.9: Head of the household of respondents (N=170)

Section A provided an overview of the demographic characteristics of the respondents and Section B will outline the sexual and reproductive health information obtained from respondents.

4.3.2 Section B: sexual and reproductive health information

The following topics are discussed in this section: respondent's period/duration diagnosed with HIV, knowledge of anyone who is HIV positive, disclosure of HIV status after diagnosis, partner's reaction to status disclosure, respondents' knowledge of their partner(s) HIV status, number of sexual partners respondents had in the last 3-6 months, number of sexual partners respondents' partner had in the last 3-6 months, and condom use.

4.3.2.1 Respondent's period/duration diagnosed with HIV (N=170)

The question was developed to determine the period/duration since respondents' initial diagnosis with HIV. Table 4.3 presents the respondents' answers. Based on the answers provided by the respondents, the researcher decided to group them according to the following intervals: < 1 year, 1-3 years, 4-6 years, 7-9 years, and ≥ 10 years.

Table 4.3: Respondent's period/duration diagnosed with HIV for the first time (N=170)

Duration since initial diagnosis	Frequency	Percentage
< 1 year	68	40.00%
1-3 years	44	25.88%
4-6 years	27	15.88%
7-9 years	29	17.06%
≥ 10 years	2	1.18%
Total	170	100%

All respondents answered this question (N=170). According to Table 4.3, 68 (40%; *f*=68) respondents had been diagnosed < 1 year, 44 (25.88%; *f*=44) respondents had been diagnosed for 1-3 years, 27 (15.88%; *f*=27) had been diagnosed for 4-6 years, and 29 (17.06%; *f*=29) respondents had been diagnosed for 7-9 years. Two (2) (1.18%; *f*=2) respondents had been diagnosed for ≥ 10 years. Sixty-eight (68) (40%; *f*=68) respondents were diagnosed less than 1 year ago, which might denote that the majority of women are diagnosed with HIV during pregnancy.

4.3.2.2 Knowledge of anyone who is HIV positive

The following two questions were asked with regard to respondents' knowledge of anyone who is HIV positive: "Do you know of anyone who is HIV positive?" and "Did the person you know (who is HIV positive) disclose her/his status to you?"

- **Do you know of anyone who is HIV positive? (n=154)**

Respondents had to indicate either Yes or No to this question. Answers are provided in Table 4.4. Figure 4.10 graphically depicts the frequency and percentages of respondents who knew anyone who is HIV positive.

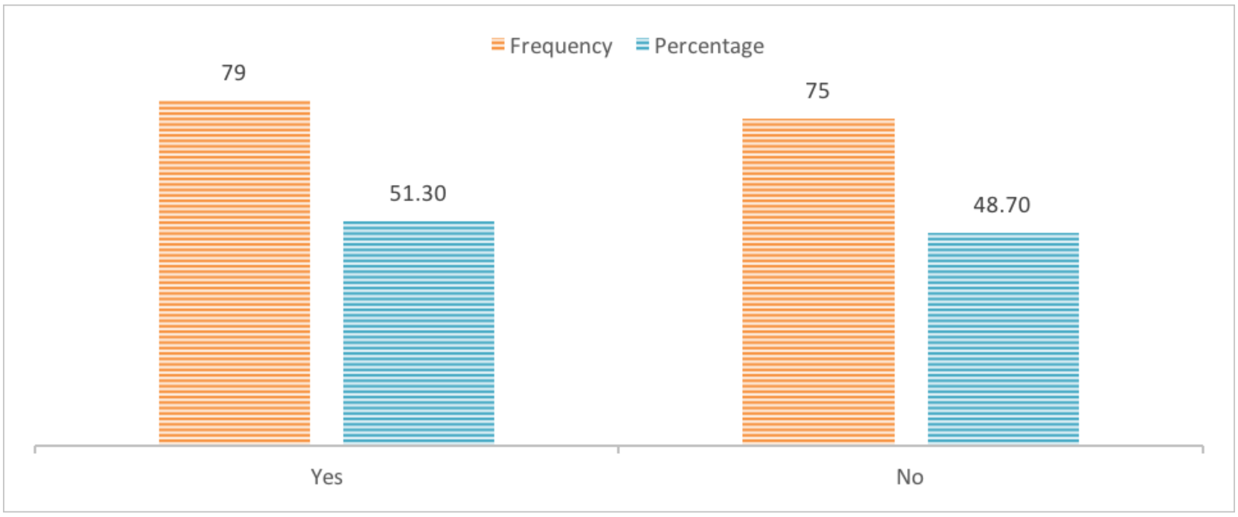


Figure 4.10: Knowledge of anyone who is HIV positive (n=154)

The results in Figure 4.10 indicates that 79 out of 154 (51.30%; *f*=79) respondents knew someone who is HIV positive, and 75 out of 154 (48.70%; *f*=75) respondents did not know anyone who is HIV positive. Sixteen (16) respondents did not answer this question.

4.3.2.3 Disclosure of HIV status after diagnosis

Table 4.4 indicates the frequency and percentages related to: knowledge of anyone who is HIV positive, disclosure education received, number of days/months/years taken to disclose the diagnosis, disclosure of HIV status after diagnosis, person to whom HIV positive status was disclosed, person who performed the disclosure education, advice by the health care worker to disclose the status, disclosure of HIV positive status to the partner, and anyone who disclosed her/his status to the respondents.

Table 4.4: Disclosure of HIV status after diagnosis

Knowledge of anyone who is HIV positive (n=154)	**Frequency**	**Percentage**
Yes	79	51.30%
No	75	48.70%
Total	154	100%
Not indicated	16	9.41%
Disclosure education received (N=170)	**Frequency**	**Percentage**
Yes	149	87.64%
No	21	12.36%
Total	170	100%
Number of days/months/ years taken to disclose the diagnosis (n=153)	**Frequency**	**Percentage**
< 1 month	96	62.77%
1-12 months	52	33.98%
1-5 years	3	1.95%
> 5 years	2	1.30%
Total	153	100%
Not yet disclosed	17	10%

Did you disclose your status after diagnosis (N=170)	**Frequency**	**Percentage**
Yes	153	90.00%
No	17	10.00%
Total	170	100%
Person to whom HIV positive status was disclosed (n=150)	**Frequency**	**Percentage**
Partner	85	56.66%
Family member	62	41.34%
Other	3	2.00%
Total	150	100%
Not indicated	20	11.76%
Person who performed the disclosure education (n=151)	**Frequency**	**Percentage**
Health professionals	151	100%
Not indicated	19	11.17%
Where you advised by the health care worker to disclose the status? (N=170)	**Frequency**	**Percentage**
Yes	152	89.40%
No	18	10.60%
Total	170	100%
Disclosure of HIV positive status to the partner (N170)	**Frequency**	**Percentage**
Yes	136	80.00%
No	34	20.00%
Total	170	100%

Is there anyone who disclosed her/his status to you? (n=161)	**Frequency**	**Percentage**
Yes	84	52.17%
No	77	47.83%
Total	161	100%
Not indicated	9	5.29%

- **Did you disclose your status after diagnosis (N=170)**

All the respondents answered this question (N=170). The respondents had to indicate either Yes or No to answer this question.

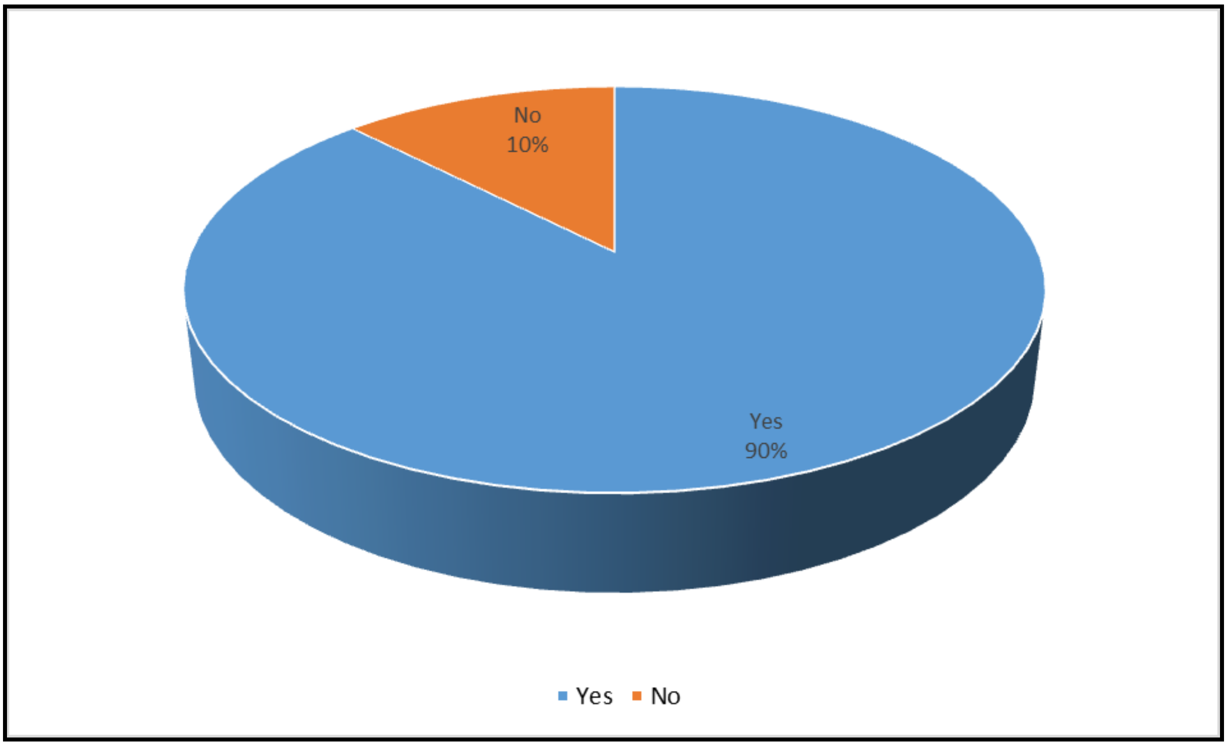


Figure 4.11: Disclosure of HIV status after diagnosis (N=170)

Figure 4.11 shows that 153 (90%; *f*=153) respondents disclosed their HIV status to someone, while 17 (10%; *f*=17) respondents did not disclose their HIV status to anyone.

- **Disclosure education received (N=170)**

All the respondents answered this question (N=170). The question was developed to ascertain if respondents received any form of disclosure education from health care workers. The respondents had to indicate either Yes or No to answer this question, as reflected in Table 4.4. The results show that 149 (87.64%; *f*=149) respondents received disclosure education, while 21 (12.36%; *f*=21) respondents did not receive disclosure education.

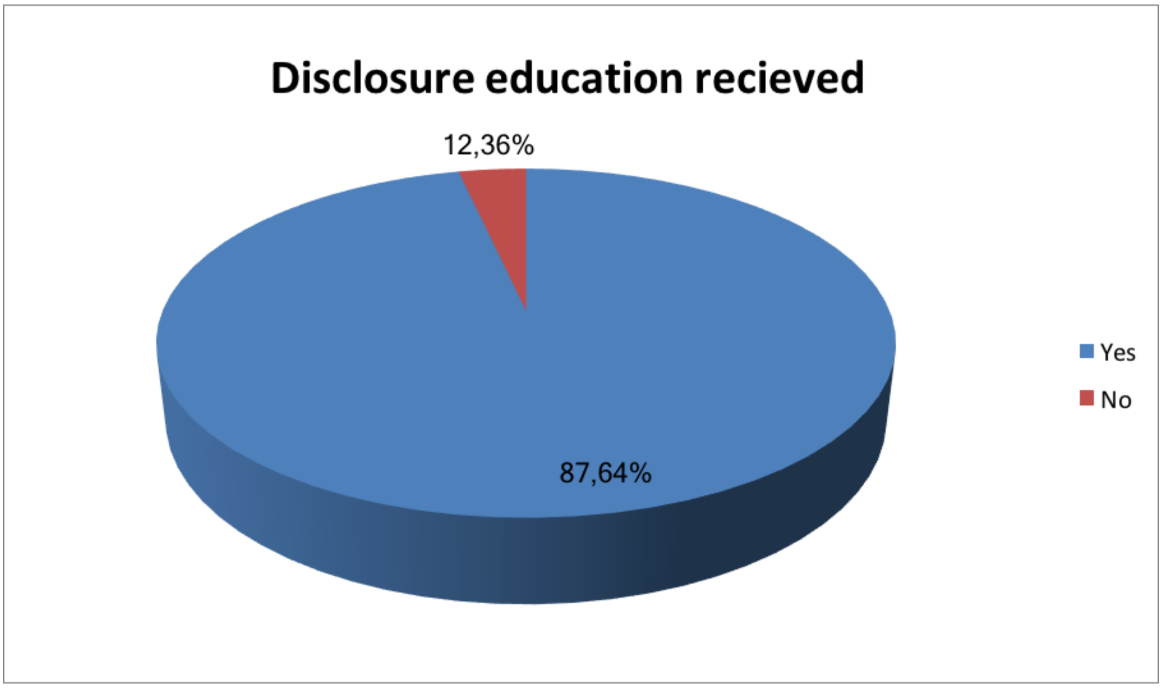


Figure 4.12: Disclosure education received by respondents (N=170)

Figure 4.12 illustrates disclosure education received in percentages. Most of the respondents (87.64%) received disclosure education.

- **Number days/months/years taken to disclose the diagnosis (n=153)**

Responses indicated that 96 out of 153 (62.77%; *f*=96) respondents disclosed their status within the first month after the diagnosis, while 52 out of 153 (33.98%; *f*=52) respondents took 1-12 months to disclose their HIV positive status. Three (3) out of 153 (1.95%; *f*=3) respondents took 1-5 years to disclose their HIV positive status, and 2 out of 153 (1.30%; *f*=2) respondents took more than 5 years to disclose their

HIV positive status. Seventeen (17) out of 170 (10%; *f*=17) respondents did not disclose their HIV status.

- **Person to whom HIV positive status was disclosed (n=150)**

The person to whom respondents disclosed their HIV positive status is presented in tabular form. Each respondent indicated the person to whom her HIV status was disclosed: 147 out of 150 (98%; *f*=147) respondents stated family members, 3 out 150 (2%; *f*=3) respondents indicated others, while 20 out of 170 (11.76%; *f*=20) respondents did not indicate at all.

- **Person who performed the disclosure education (n=151)**

The person who performed the disclosure education is presented in Table 4.4. The results in Table 4.4 indicate that 151 out of 151 (100%; *f*=151) of those who indicated that they received disclosure education, received the education from health care workers. There were 19 out of 170 (11.17%; *f*=19) respondents who did not indicate whether they have received disclosure education.

- **Where you advised by the health care worker to disclose the status? (N=170)**

All respondents answered this question (N=170). The question was developed to determine if the respondents were advised by health care workers to disclose their HIV status. The respondents had to indicate either Yes or No to answer this question. Table 4.4 shows that 152 (89.40%; *f*=152) respondents indicated that they were advised by health care workers to disclose their status, while 18 (10.60%; *f*=18) respondents indicated that they were not advised by the health care workers to disclose their status. Eighty-nine point four zero (89.40%) of the respondents who received disclosure advice correlates with the 80% who disclosed their status to their partners. Therefore, the recommendations of this study are crucial to enhance disclosure education provided by health care workers.

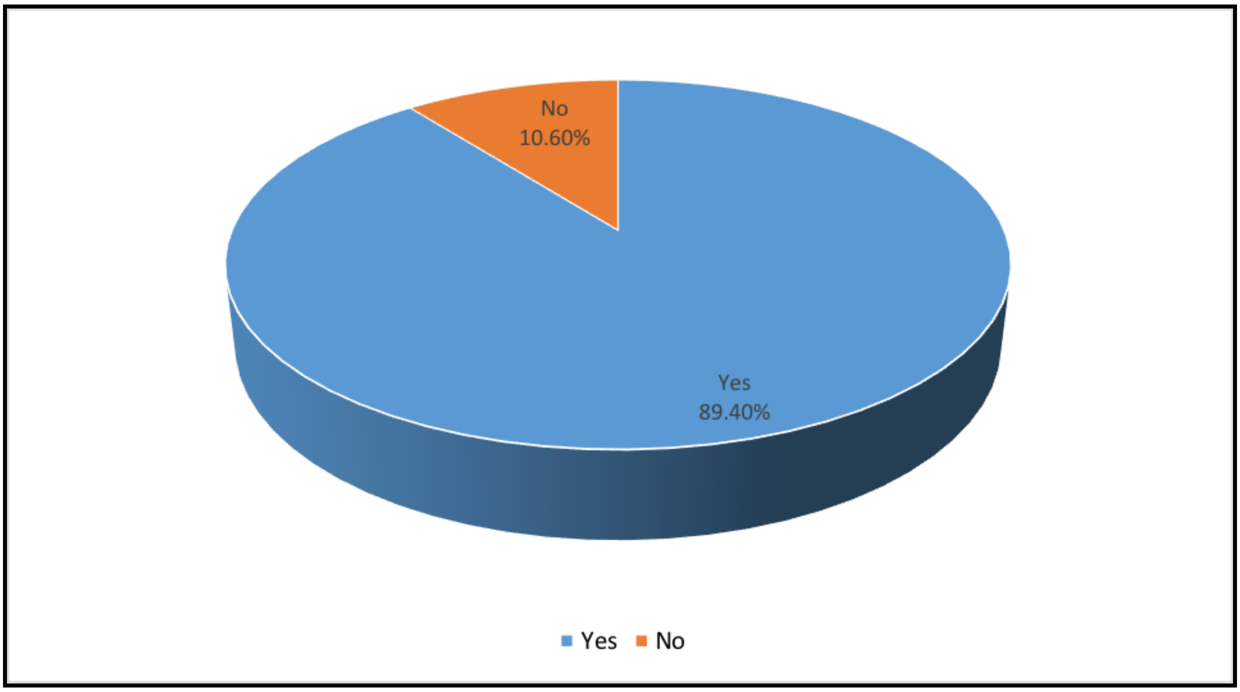


Figure 4.13: Health care worker advised you to disclose the status (N=170)

Figure 4.13 illustrates the respondents who were advised by the health care worker to disclose their status in percentages. Most of the respondents (89.40%) were advised by the health care worker to disclose their HIV status.

- **Disclosure of HIV positive status to the partner (N=170)**

Table 4.4 and Figure 4.14 demonstrate the number of respondents who disclosed their HIV status to their partners. The respondents had to indicate either Yes or No to answer this question. All respondents answered this question (N=170). One hundred and thirty-six (136) (80%; *f*=136) respondents indicated that they disclosed their HIV status to their partners, while 34 (20%; *f*=34) respondents did not disclose their status to their partners (Refer to Figure 4.14).

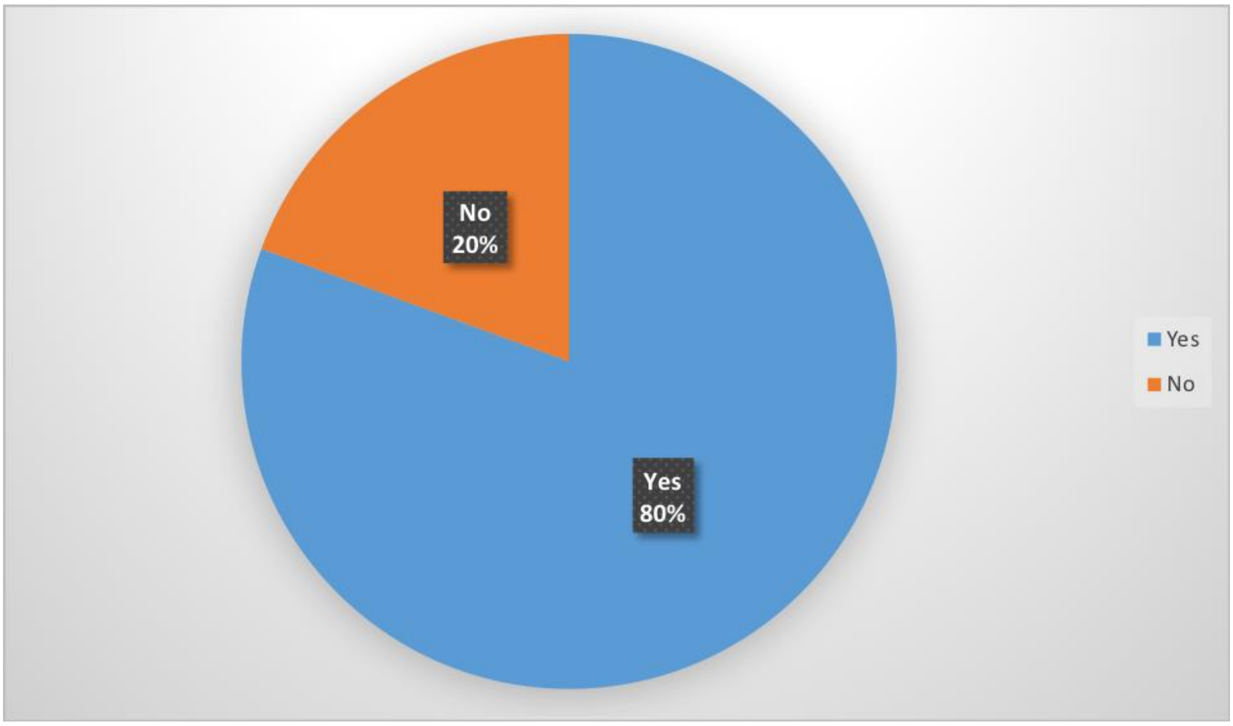


Figure 4.14: Disclosure of HIV positive status to the partner as indicated by respondents (N=170)

The majority of respondents (80%) disclosed their HIV status to their partners. Partners' reactions to respondents' HIV status will be discussed in the next section.

- **Did the person the respondent knows (who is HIV positive) disclose her/his status to you? (n=161)**

Table 4.4 demonstrates the number of people who disclosed their HIV status to the respondents. The respondents had to indicate either Yes or No to answer this question.

The results in Table 4.4 indicate that 84 out of 161 (52.20%; *f*=84) respondents knew people who disclosed their HIV status to them, while 77 out of 161 (47.80%; *f*=77) respondents indicated that no one disclosed his/her HIV status to them. Nine (9) out of 170 (5.29%; *f*=9) respondents did not indicate if there was anyone who disclosed their HIV status to them.

4.3.2.4 Partner's reaction to your status

Table 4.5 presents the partners' reactions to respondents' HIV status disclosure. The respondents had to indicate "strongly agree", "agree", "uncertain", "disagree" and "strongly disagree" according to a Likert scale. The total number of respondents who answered a specific question in Table 4.5 will differ between each question asked.

The results in Table 4.5 indicate that 102 out of 135 respondents' partners (75.56%; *f*=102) were not disappointed with the respondents' HIV status. One hundred and seventeen (117) out of 134 (87.31%; *f*=118) disagreed that their partners were judgemental towards their HIV positive status, 126 out of 136 (92.65%; *f*=126) respondents' partners were supportive and caring, and 127 out of 135 (94.07%; *f*=127) of respondents' partners accepted their HIV status. One hundred and twenty-six (126) out of 133 (94.74%; *f*=126) respondents disagreed that their partners rejected them, and 127 out of 134 (94.78%; *f*=127) respondents disagreed that their partners ignored them.

Table 4.5: Partner's reaction to HIV positive status

Items	**Strongly agree**		**Agree**		**Uncer-tain**		**Disagree**		**Strongly disagree**		**Did not answer**	
	n	%	n	%	n	%	n	%	N	%	n	%
Disappointed in me	4	2.96	26	19.26	3	2.22	88	65.19	14	10.37	35	20.59
Judgemental towards me	5	3.73	11	8.20	1	0.75	100	74.63	17	12.69	36	21.18
Caring and supportive towards me	28	20.59	98	72.06			6	4.41	4	2.94	34	20
Accepted me	27	20	100	74.07			6	4.44	2	1.49	35	20.59
Rejected me	1	0.75	6	4.51			94	70.68	32	24.06	37	21.76
Ignored me	4	2.98	3	2.24			94	70.15	33	24.63	36	21.18

The next section considers the respondents' knowledge of their partners' HIV status.

4.3.2.5 Respondents’ knowledge of their partner(s) HIV status

The question was developed to determine if the respondents knew the HIV status of their partners. The respondents had to indicate “strongly agree”, “agree”, “uncertain”, “disagree” and “strongly disagree” according to the Likert scale. The number of respondents who answered each specific question in Table 4.6 will differ between each question asked.

Table 4.6: Respondents’ knowledge of their partner’s HIV status

Items	**Strongly agree**		**Agree**		**Uncertain**		**Disagree**		**Strongly disagree**		**Did not answer**	
	n	%	n	%	n	%	N	%	n	%	N	%
I know the HIV status of my partner	22	13.02	85	50.29	5	2.96	50	29.59	7	4.14	1	0.59
My partner (s) know my HIV status	25	14.79	111	65.68	1	0.59	29	17.16	3	1.78	1	0.59
It is the right of my partner(s) to know my HIV status	28	16.57	126	74.56	1	0.59	14	8.28			1	0.59
I have a right to know the HIV status of my partner(s)	24	14.29	129	76.79	2	1.19	11	6.54	2	1.19	2	1.18
I do not think it is important that my	7	4.14	17	10.06	1	0.59	105	62.13	39	23.08	1	0.59

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		Did not answer	
	n	%	n	%	n	%	N	%	n	%	N	%
partner(s) know my HIV status												
I do not think it is important that I know my partner(s) HIV status	3	1.79	17	10.12	1	0.59	106	63.10	41	24.40	2	1.18

Table 4.6 indicates that 107 out of 169 (63.31%; *f*=107) respondents agreed that they know the HIV status of their partners, while 136 out of 169 (80.47%; *f*=136) respondents indicated that their partners know their HIV status. This correlates with the 80% respondents who disclosed their HIV positive status to their partners. One hundred and fifty-four (154) out of 169 (91.12% *f*=154) respondents agreed that it is the right of their partners to know their HIV status, while 153 out of 168 (91.07%; *f*=153) respondents agreed that they have the right to know the HIV status of their partners. One hundred and forty-four (144) out of 169 (85.21%; *f*=144) respondents disagreed with the question which indicated that it is not essential for their partners to know their HIV status, and 147 out of 168 (87.5%; *f*=147) respondents disagreed that they do not think it is important that they know their partners' HIV status. The majority, 154 out of 169 (91.12% *f*=154) respondents, agreed that it is their partner's right to know the respondent's HIV status, and 153 out of 168 (91.07%; *f*=153) respondents stated that they also have the right to know their partners' HIV status.

4.3.2.6 Number of sexual partners respondents had in the last 3-6 months (N=170)

All the respondents answered this question (N=170). Table 4.7 indicates the number of sexual partners the respondents had in the last 3-6 months.

Table 4.7: Number of sexual partners respondents had in the last 3-6 months (N=170)

Number of sexual partners	Frequency	Percentage
0	3	1.76%
1	162	95.30%
2	3	1.76%
3 and above	2	1.18%
Total	170	100%

The results in Table 4.7 and Figure 4.15 indicate that 3 (1.76%; *f*=3) respondents had no sexual partners, 162 (95.30%; *f*=162*)* respondents had 1 sexual partner, 3 (1.76%; *f*=3) respondents had 2 sexual partners, and 2 (1.18%; *f*=2) respondents had 3 sexual partners in the last 3-6 months.

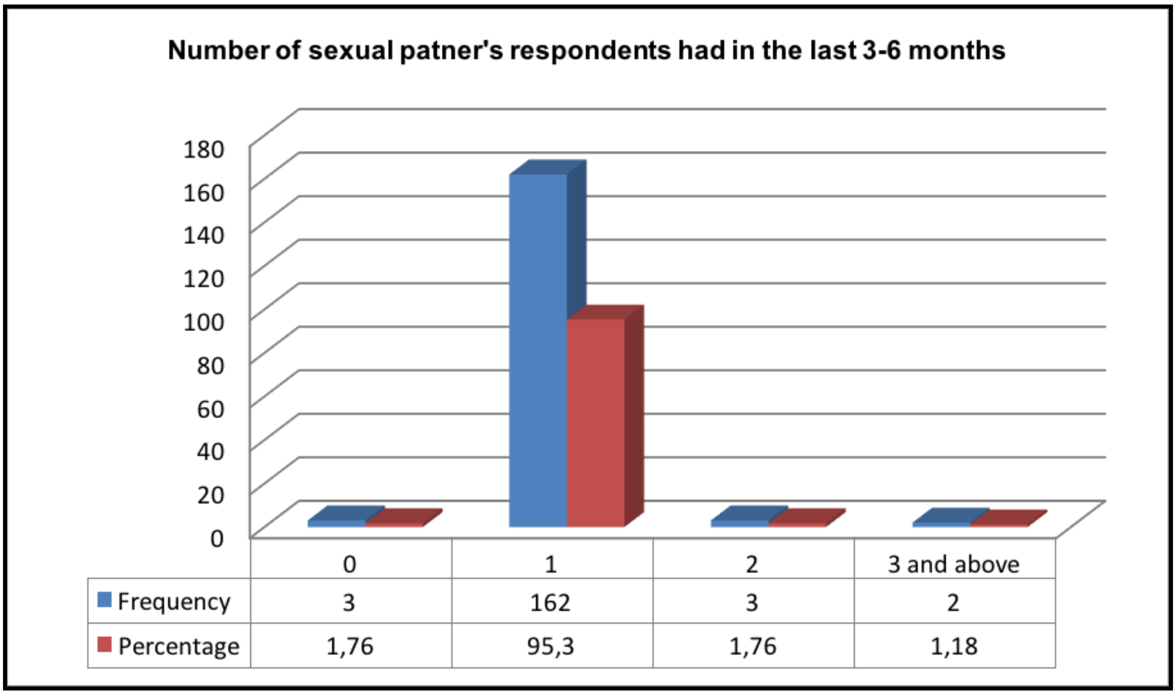


Figure 4.15: Number of sexual partners respondents had in the last 3-6 months (N=170)

Figure 4.15 and Table 4.7 illustrate that most of the respondents (95.30%) had only one sexual partner in the last 3-6 months

4.3.2.7 Number of sexual partners your partner had in the last 3-6 months (N=170)

All the respondents answered this question (N=170).

Table 4.8: Number of sexual partners your partner had in the last 3-6 months (N=170)

Number of sexual partners	Frequency	Percentage
None	7	4.11%
1	148	87.06%
2	13	7.65%
4	1	0.59%
5 and more	1	0.59%
Total	170	100%

Table 4.8 and Figure 4.16 indicate that 7 (4.11%; *f*=7) respondents' partners had no sexual partner in the last 3-6 months, 148 (87.06%; *f*=148) of the respondents' partners had 1 sexual partner in the last 3-6 months, 13 (7.65%; *f*=13) respondents' partners had 2 sexual partners in the last 3-6 months, 1 (0.59%; *f*=1) respondent's partner had 4 sexual partners in the last 3-6 months, and 1 (0.59%; *f*=1) respondent's partner had 5 sexual partners in the last 3-6 months.

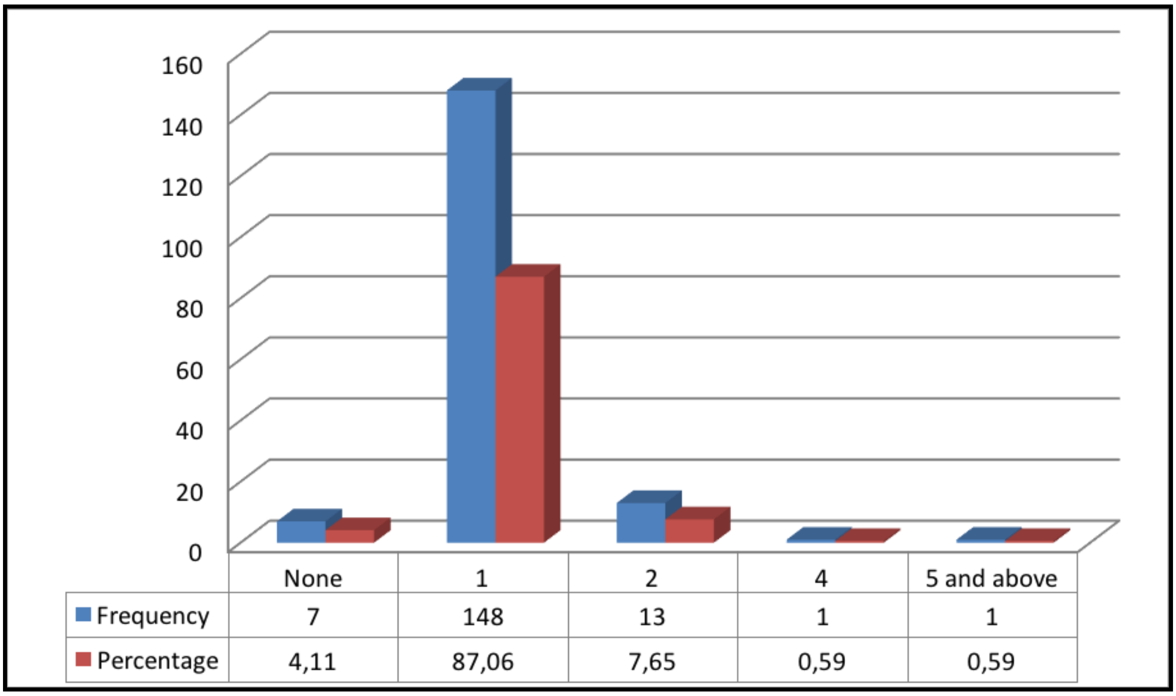


Figure 4.16: Number of sexual partners your partner had in the last 3-6 months (N=170)

The results in Figure 4.16 illustrate that most of the respondents' sexual partners (87.06%) had only 1 sexual partner in the last 3-6 months.

4.3.2.8 Condom use (N=170)

All respondents answered this question (N=170). This question was developed with the aim of determining how often the respondents used condoms according to a Likert scale. Respondents had to indicate whether they "never", "rarely", "sometimes", "most of the time" or "always" use a condom. Answers are provided in Table 4.9.

Table 4.9: Condom use (N=170)

Condom usage	Frequency	Percentage
Never	24	14.12%
Rarely	8	4.71%
Sometimes	80	47.06%
Most of the time	25	14.70%

Condom usage	Frequency	Percentage
Always	33	19.41%
Total	170	100%

According to Table 4.9 and Figure 4.16, 24 (14.12%; *f*=24) respondents never use condoms, 8 (4.71%; *f*=8) respondents rarely use condoms, and 80 (47.06%; *f*=80) respondents indicated that they sometimes use condoms. Twenty-five (25) (14.70%; *f*=25) respondents use condoms most of the time, and 33 (19.41%; *f*=33) respondents indicated that they always use condoms.

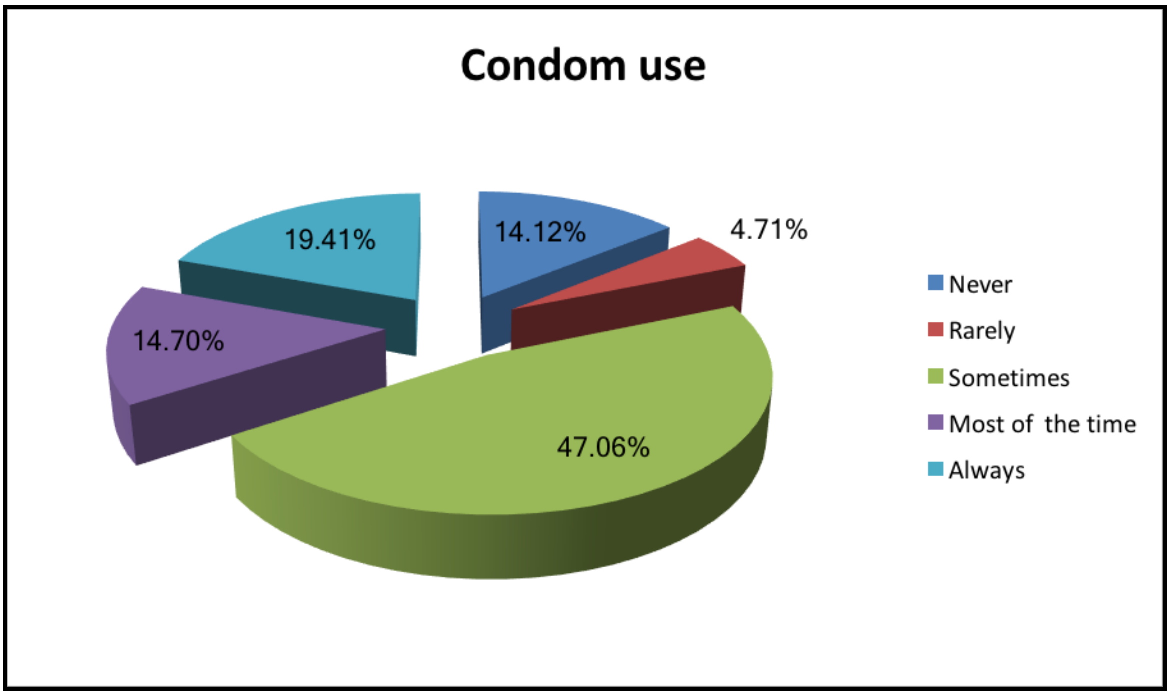


Figure 4.17: Condom use according to respondents (N=170)

Most of the respondents (47.06%) sometimes use condoms while only 19.41% always use condoms. It is crucial to highlight condom use as part of the recommendations of this study to enhance disclosure education and ensure a lower MTCT rate and viral load. More details will follow in Chapter 5.

4.2.3.9 Number of pregnancies respondents had while HIV positive (n=136)

Table 4.10 shows the number of pregnancies the respondents had while being HIV positive. The respondents had to indicate how many times they fell pregnant while

HIV positive; whether it was one time, two times, three times, or more than three times. Thirty-four (34) out of 170 (20%; *f*=34) respondents did not answer this question. The calculations are thus based on the respondents (n=136) who did answer the question.

Table 4.10: Number of pregnancies respondents had while being HIV positive (n=136)

Number of pregnancies while being HIV positive	**Frequency**	**Percentage**
One time	79	58.09%
Two times	36	26.47%
Three times	20	14.70%
More than three times	1	0.74%
Total	136	100%
Not indicated	34	20%

As indicated in Table 4.10, 79 out of 136 (58.09%; *f*=79) respondents were pregnant once while being HIV positive, 36 out of 136 (26.47%; *f*=36) were pregnant twice while being HIV positive, and 20 out of 136 (14.70%; *f*=20) were pregnant three times while being HIV positive. One (1) respondent was pregnant more than three times while being HIV positive, and 34 out of 136 (20%; *f*=34) did not indicate, as they were pregnant for the first time.

4.3.2.10 Number of the last CD4 cell count (n=95)

The question was developed to determine if respondents knew the result of their last CD4 cell count. The respondents were to indicate if the CD4 cell count results were < 300 cells/mm^3, from 300 cells/mm^3 to 500 cells/mm^3, and > 500 cells/mm^3. Table 4.11 indicates that 75 out of 170 (44.12%; *f*=75) respondents did not answer the question. The calculations are thus based on the respondents (n=95) who did answer the question.

Table 4.11: Number of the last CD4 cell count (n=95)

CD4 cell count	Frequency	Percentage
< 300 cells/mm^3	23	24.21%
From 300 cells/mm^3 to 500 cells/mm^3	27	28.42%
> 500 cells/mm^3	45	47.37%
Total	95	100%
No respond	75	44.12%

Table 4.11 and Figure 4.18 illustrate the respondents' CD4 cell count in percentages. Twenty-three (23) out of 95 (24.21%; *f*=23) respondents had a CD4 cell count of less than 300 cells/mm^3, 27 out of 95 (28.42%; *f*=27) respondents had CD4 cell count of 300 cells/mm^3 to 500 cells/mm^3, and 45 out of 95 (47.37%; *f*=45) respondents had more than 500 cells/mm^3 CD4 cell count. Seventy-five (75) out of 170 (44.12%; *f*=75) respondents did not answer this question.

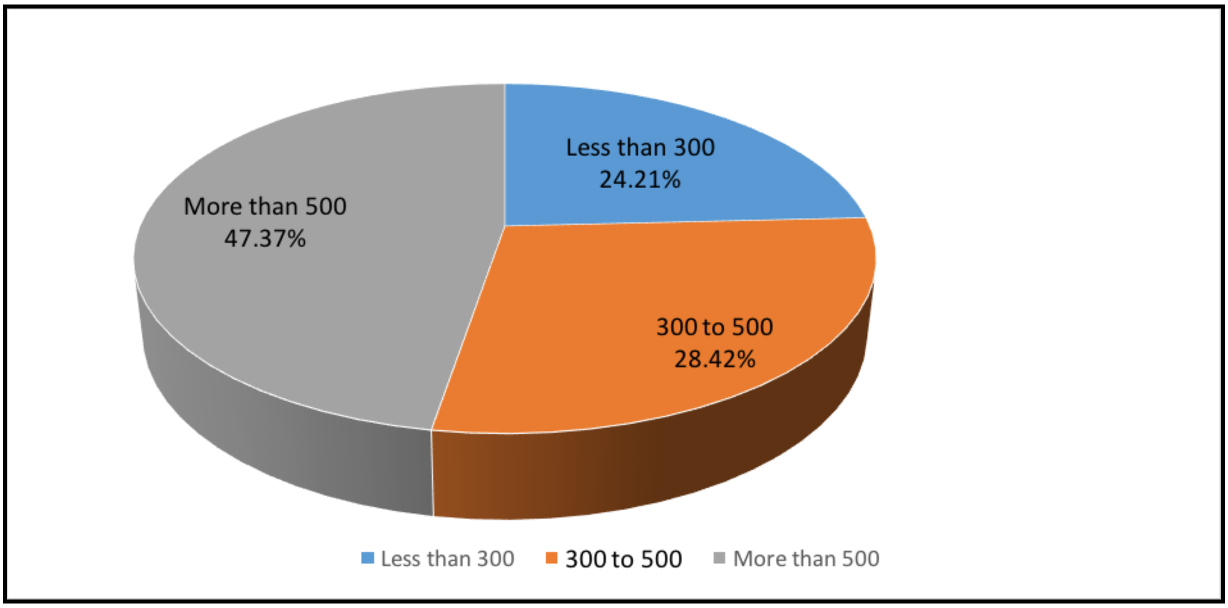


Figure 4.18: Number of CD4 cell count of respondents (n=95)

Sub-section B provided respondents' sexual and reproductive health information. The next section will focus on one of the components of the HBM which is the motivating factors of HIV status disclosure to partners (Polit & Beck 2017:124). The relationship between age, relationship status, employment status, level of education, and status disclosure to partners is discussed in the next section.

4.3.3 Relationship/correlation/association between age, relationship status, employment status, level of education, disclosure education received and disclosure of their HIV status to partners

Table 4.12 compares the p-values between two variables. Statistical significance shall be discussed in Chapter 5.

Table 4.12: Relationship of the following: age, relationship status, employment status and level of education, and disclosure of HIV status to partners (N=170)

Variable: Disclosure to partner	Disclosed (N=170)	Did not disclosed (N=170)	Chi-Square	P-Value
Age:				
• 18-30yrs	70 (41.18%)	19 (11.18%)	0.10	0.71
• 31-40yrs	66 (38.82%)	15 (8.82%)	0.11	0.71
Relationship status:				
• In relationship	68 (40%)	5 (2.94%)	7.89	0.01
• Single	68 (40%)	28 (16.47%)	5.04	0.03
• Separated	00 (0.00%)	01 (0.59%)	4.0	0.04
Employment status:				
• Employed	37 (21.76%)	12 (7.06%)	0.57	0.51
• Unemployed	99 (58.24%)	22 (12.94%)	0.23	0.65
Level of education:				
• ≤ Secondary	102 (60.00%)	24 (14.12%)	0.07	0.81
• Tertiary	34 (20.00%)	10 (5.88%)	0.20	0.70
Disclosure education:				
• Received	131 (77.06%)	18 (10.59%)	5.84	0.02
• Not received	05 (2.94%)	16 (9.41%)	41.44	0.000

As indicated in Table 4.12, 41.18% of HIV positive pregnant women who were between 18-30 years, and 38.82% who were between 31-40 years, were able to discloses their HIV status to their partners. Both the chi-squares and p-values are more or less the same ($x^2 = 0.1$, p-value = 0.71). P-values of the age interval were > 0.05.

Table 4.12 indicates that 40% of those respondents who were in relationships disclosed their HIV status to their partners, 40% of those who were single and 0.59% of those who were separated reported to have disclosed to their previous partners. The chi-square of those in a relationship was ($x^2 = 7.89$, p-value = 0.01), for those who were single it was ($x^2 = 5.04$, p-value = 0.03), and for separated respondents it was ($x^2 = 4.0$, p-value = 0.04). All p-values were < 0.05.

According to Table 4.12, 58.24% of the unemployed HIV positive pregnant women disclosed their HIV status to their partners ($x^2 = 0.23$, p-value = 0.65) while 21.76% of those who were employed ($x^2 = 0.57$, p-value = 0.51) disclosed their status. Both p-values were > 0.05.

As indicated in Table 4.12, 60% of HIV positive pregnant women who schooled up to secondary level disclosed their HIV status to their partners ($x^2 = 0.07$, p-value = 0.81), and 20.00% of HIV positive pregnant women who schooled up to tertiary level disclosed their HIV status to their partners ($x^2 = 0.20$, p-value = 0.71). Both p-values were > 0.05.

From Table 4.12 it is evident that 77.06% of respondents who received disclosure education were reported to have disclosed their HIV status to their partners, while 2.94% of those who did not receive disclosure education disclosed. The chi-square of those who received disclosure education was ($x^2 = 5.84$, p-value = 0.02), and those who did not receive disclosure education was ($x^2 = 41.44$, p-value = 0.000). Both p-values were < 0.05. A more comprehensive discussion follows in Chapter 5.

4.3.4 Section C: Motivating/enabling or modifying factors for disclosure

In Section C of the questionnaire, the following topics were addressed: motivating/enabling or modifying factors, and the benefits of HIV status disclosure.

4.3.4.1 Motivating/enabling or modifying factors for disclosure

The question was developed to determine factors that motivated the respondents to disclose their HIV status, so as to comply with the planned treatment protocols which are in line with the HBM (Polit & Beck 2017:124). The respondents had to indicate “strongly agree”, “agree”, “uncertain”, “disagree” and “strongly disagree” according to the Likert scale. The number of respondents who answered the questions in Table 4.13 will differ from one sub-question to another.

Table 4.13: Motivating/enabling or modifying factors for disclosure

Motivating factors	**Strongly agree**		**Agree**		**Uncertain**		**Disagree**		**Strongly disagree**		**Did not answer**	
	n	%	n	%	n	%	n	%	n	%	N	%
ARVs are available at the health facility	31	18.35	135	79.88	2	1.18	1	0.59			1	0.59
ARVs cure HIV	7	4.14	82	48.53	14	8.28	54	31.95	12	7.10	1	0.59
Someone who is on ARVs can transmit HIV	15	8.82	78	45.88	33	19.41	36	21.18	8	4.71		
You and your partner should adhere to safer sex practices i.e. condom use	25	14.71	135	79.41	1	0.59	8	4.70	1	0.59		
Female condom is available at the health	27	15.98	138	81.66	1	0.59	3	1.77			1	0.59

Motivating factors	**Strongly agree**		**Agree**		**Uncertain**		**Disagree**		**Strongly disagree**		**Did not answer**	
	n	%	n	%	n	%	n	%	n	%	N	%
facilities												
You can still have another baby after delivery	10	5.88	62	36.47	11	6.47	69	40.59	18	10.59		
Disclosure is important to you and your partner	24	14.12	130	76.47	3	1.76	12	7.06	1	0.59		

Table 4.13 indicates that the majority of respondents, 166 out of 169 (98.22%; *f*=166), agreed that ARVs are available in their health facilities. Eighty-nine (89) out of 169 (52.66%; *f*=89) agreed that ARVs cure HIV. Ninety-three (93) out of 170 (54.71%; *f*=93) respondents agreed that someone on ARV treatment can transmit HIV. One hundred and sixty (160) out of 170 (94.12%; *f*=160) respondents agreed that they should adhere to safer sex practice, for instance with the use of condoms, and 165 out of 169 (97.63%; *f*=165) agreed that female condoms are available in their health facilities. One hundred and fifty-four (154) out of 170 (90.59%; *f*=154) respondents agreed that HIV status disclosure is important for them and their partners. There were 87 out of 170 (51.18%; *f*=87) respondents who disagreed that they can have another baby after delivery.

According to information in Table 4.13, 166 out of 169 (98.22%; *f*=166) respondents indicated that condoms are available at health facilities, while 165 out of 169 (97.63%; *f*=165) reported that female condoms are available in their health facilities.

4.3.4.2 Any other factors that motivated the respondents to disclose their status

Respondents were requested to indicate what motivated them to disclose their HIV status to their partners. Table 4.14 shows the motivating factors for respondents' disclosure of their HIV status to their partners. Ninety-three (93) out of 170 (54.71%; *f*=93) respondents did not answer the question. The following calculations are thus based on respondents (n=77) who did answer the question.

Table 4.14: Any other motivating/enabling or modifying factors for status disclosure to their partners (n=77)

Motivating factors	Frequency	Percentage
To know my status	25	32.47%
To get support from partners	47	61.04%
Ill health	5	6.49%
Total	77	100%
Not indicated	93	54.71%

Table 4.14 indicates what motivated the respondents to disclose their HIV status: 25 out of 77 (32.47%; *f*=25) respondents were interested in knowing their status, 47 out of 77 (61.04%; *f*=47) respondents needed support from their partners, and 5 out of 77 (6.49%; *f*=5) respondents were motivated by ill health. Ninety-three (93) out of 170 (54.71%; *f*=93) respondents did not indicate what motivated them to disclose their status to their partners. According to the HBM, respondents who perceive that there are benefits and who believe that treatment may cure the illness or help prevent it, may be encouraged to disclosure their HIV status to their partners. Table 4.15 analyses the benefits of HIV status disclosure.

4.3.4.3 Benefits of disclosure

Respondents were requested to indicate the benefits of HIV status disclosure. Table 4.15 indicates that 110 out of 170 (64.71%; *f*=110) respondents did not answer the question. The calculations are based on the respondents (n=60) who did answer the question.

Table 4.15: The benefits of disclosure according to respondents (n=60)

Benefits of disclosure	Frequency	Percentage
Freedom from secrets	9	15.00%
Support from partners	29	48.33%
Improving health status	18	30.00%
Encouraging partner testing	4	6.67%
Total	60	100%
Not indicated	110	64.71%

The results in Table 4.15 indicate that 9 out of 60 (15%; *f*=9) respondents needed to feel free, 29 out of 60 (48.34%; *f*=29) respondents' benefits of disclosure was to get support from their partners, 18 out of 60 (30%; *f*=18) respondents benefited from good health, and 4 out of 60 (6.67%; *f*=4) respondents reported that their disclosure prompted partner testing. One hundred and ten (110) (64.71%; *f*=110) respondents did not indicate the benefits of HIV status disclosure. In the next section, the challenges of HIV status disclosure will determine the challenges/barriers/ disadvantages of HIV status disclosure.

4.3.5 Section D: The challenges/barriers of disclosure

Under Section D of the questionnaire the challenges/barriers and the disadvantages of disclosure were addressed.

4.3.5.1 The challenges/barriers of disclosure

The question was developed to determine challenges/barriers that prohibited the respondents to disclose their HIV status. The HBM identified the following disclosure challenges: complexity, duration, and accessibility of treatment. The respondents had to indicate "strongly agree", "agree", "uncertain", "disagree" and "strongly disagree" according to the Likert scale. The calculations in Table 4.16 are based on the number of respondents who answered the sub-question, and will differ from one sub-question to another.

Table 4.16: Challenges or barriers of disclosure according to respondents

Items	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		Did not answer	
	n	%	n	%	N	%	n	%	n	%	N	%
I am afraid of accusations of infidelity	5	3.13	48	30	4	2.5	87	54.37	16	10	10	5.88
I am afraid that my partner will abandon me	4	2.44	41	25	5	3.05	97	59.15	17	10.36	6	3.53
My partner will beat me	1	0.61	17	10.43	4	2.45	119	73.01	22	13.50	7	4.12
I am not working so my partner will no longer finance me	1	0.61	27	16.46	4	2.44	111	67.69	21	12.80	6	3.53
My partner will throw me out of the house			16	13.01	7	5.69	80	65.04	20	16.26	47	27.65
My partner works far	3	1.85	42	25.93	2	1.23	97	59.88	18	11.11	8	4.71
My partner may tell others	1	0.61	22	13.41	9	5.49	112	68.29	20	12.20	6	3.53
I do not know that I should tell my partner	5	3.07	19	11.66	2	1.23	114	69.93	23	14.11	7	4.12

According to Table 4.16, 53 out of 160 (33.13%; *f*=53) respondents were afraid of accusations of infidelity, and 45 out of 164 (27.44%; *f*=45) were fearful that their partners would abandon them. Eighteen (18) out of 163 (11.04%; *f*=18) respondents were worried that their partners would beat them. Twenty-eight (28) out of 164 (17.07%; *f*=28) agreed that their partners would no longer finance them if they disclosed their status. Sixteen (16) out of 123 (13.01%; *f*=16) agreed that their partners would throw them out of the house. One hundred and fifteen (115) out of 162 (70.99%; *f*=115) respondents' partners work far from home, making disclosure difficult, and 23 out of 164 (14.02%; *f*=23) agreed that their partners may tell others.

One hundred and thirty-seven (137) out of 163 (84.05%; *f*=137) respondents agreed that they know that they should tell their partners, while 24 out of 163 (14.72%; *f*=24) respondents indicated that they do not know whether they should tell their partners.

4.3.5.2 Any other challenges/barriers/disadvantages not mentioned (n=40)

Respondents were requested to indicate any other challenges/barriers/ disadvantages of disclosure that were not mentioned previously. Table 4.17 indicates that 130 out of 170 (76.47%; *f*=130) respondents did not answer the question. The calculations are based on the respondents (n=40) who answered the question.

Table 4.17: Any other challenges/barriers/disadvantages not mentioned (n=40)

Challenges/disadvantages	Frequency	Percentage
Fear of rejection	19	47.50%
Violent behaviour/violence by partner	07	17.50%
Projection of blame by partner	04	10.00%
Fear of stigmatisation	10	25.00%
Total	40	100%
Not indicated	130	76.47%

The results in Table 4.17 indicate the challenges/barriers/disadvantages that prohibited the respondents from disclosing their HIV positive status to their partners include: 19 out of 40 (47.50%; *f*=19) feared rejection from partners, 7 out of 40 (17.50%; *f*=7) indicated violent behaviour/violence by their partners, 4 out of 40 (10.00%; *f*=4) indicated projections of blame by their partners, and 10 out of 40 (25.00%; *f*=10) feared stigmatisation. One hundred and thirty (130) out of 170 (76.47%; *f*=130) of the respondents did not answer this question.

4.4 OVERVIEW OF RESEARCH FINDINGS

In this chapter the findings were presented, analysed and described using tables and graphs. The findings reflected perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. It was supported by 34 out of 170 (20%; *f*=34) of the respondents who did not disclose their HIV status to their partners. One hundred and seventy (170) out of 186 (91.40%; *f*=170) respondents participated in the study. One hundred and thirty-two (132) (77.65%; *f*=132) respondents were between 21-35 years of age, 157 (92.35%; *f*=157) were Christians, and 94 (55.29%; *f*=94) respondents were single. Sixty-nine (69) (40.59%; *f*=69) respondents were in a relationship for 2-5 years with their current partner. Forty-nine (49) out of 152 (32.24%; *f*=49) respondents had only 1 child alive, 49 out of 152 (32.24%; *f*=49) respondents had 2 children alive, while 23 out of 152 (13.53%; *f*=23) respondents had lost 1 child. One hundred and sixty-three (163) (95.88%; *f*=160) respondents lived in rural areas, and 121 (71.18%; *f*=121) were unemployed. One hundred and eighteen (118) (69.41%; *f*=118) respondents had secondary levels of education, and 107 out of 163 (65.64%; *f*=107) respondents' partners went up to secondary school level.

Sixty-eight (68) (40%; *f*=68) respondents were diagnosed for less than 1 year; the respondents might have been diagnosed with HIV during the current pregnancy. Seventy-nine (79) out of 154 (51.30%; *f*=79) respondents knew someone who is HIV positive, and 84 out of 161 (52.17%; *f*=84) respondents knew people who disclosed their HIV status to them. One hundred and forty-nine (149) (87.64%; *f*=149) respondents received disclosure education, and 96 out of 153 (62.75%; *f*=96) took less than a month to disclose their diagnosis to their partners. One hundred and two

(102) out of 135 (75.56%; *f*=102) respondents' partners were not disappointed with respondents' HIV status, and 126 out of 136 (92.65%; *f*=126) respondents' partners were supportive and caring. One hundred and sixty-two (162) (95.29%; *f*=162) respondents had 1 sexual partner in the last 3-6 months, while 148 out of 170 (87.06%; *f*=148) of the respondents' partners had 1 sexual partner in the last 3-6 months. Eighty (80) (47.06%; *f*=80) respondents sometimes used condoms, and 21 out of 136 (15.44%; *f*=21) fell pregnant three times or more while being HIV positive. Forty-five (45) out of 95 (47.37%; *f*=95) respondents had a CD4 cell count of more than 500 cells/mm^3.

Ninety-three (93) out of 170 (54.71%; *f*=93) respondents agreed that someone on ARVs can transmit HIV to their sexual partner. Forty-seven (47) out of 77 (61.04%; *f*=47) of the respondents needed support from their partners, and 29 out of 60 (48.33%; *f*=29) got support from their partners. Fifty-three (53) out of 160 (33.13%; *f*=53) respondents were afraid of accusations of infidelity, while 45 out of 164 (27.44%; *f*=45) were afraid that their partners would abandon them. Ten (10) out of 40 (25.00%; *f*=10) respondents' barriers/challenges/disadvantages of HIV status disclosure to the partner was stigmatisation.

This data assisted the researcher to reach the objectives of the study which were to explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. A number of HIV positive pregnant women (34 out of 170 (20%; *f*=34)) indicated that they were unable to disclose their HIV status to their partners, which has the potential to increase as respondents are still sexually active and pregnant. Even though resources are available to help the respondents and the community to understand HIV/AIDS through many forms of media, it is still a challenge for HIV positive pregnant women to disclose their HIV status to their partners in the Capricorn District, Limpopo Province.

4.5 CONCLUSION

In this chapter, data were collected from 170 HIV positive pregnant women (N=170). The researcher analysed the data using SPSS version 24, and presented the research findings in tables, graphs, and figures.

The data obtained serves to confirm that women who are socio-economically vulnerable, with lower levels of education, who are single and unemployed, and who grew up in rural areas, tended to have barriers of HIV status disclosure. Statistics indicated that 136 out of 170 (80%; *f*=136) respondents reported that they disclosed their HIV status, while 34 out of 170 (20%; *f*=34) did not disclose their status to their partners. Chapter 5 will present the summary, interpretation of the research findings, the limitations, conclusions, and recommendations of this study.

CHAPTER 5
FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Effective management of disclosure barriers/challenges enhances the prevention of HIV transmission by pregnant women and their partners. In Chapter 4, data were presented and the data analysis was done. The aim of this study was to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. The researcher used the HBM as a theoretical framework for this study, which includes perceived susceptibility, perceived severity, perceived benefits, barriers and costs, motivation and enabling or modifying factors (Polit & Beck 2017:124). These aspects will be applied in this chapter.

The research objectives were as follows:

Objective one:

- Explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.

A literature review was conducted to adapt and develop an existing questionnaire (with permission from developers) to meet this objective. Chapter 3 focused on the methodology of the research. In Chapter 4, 136 out of 170 (80%; *f*=136) respondents indicated that they disclosed their HIV status to their partners. Therefore, 80% of the respondents did not experience barriers of HIV disclosure as they did disclose their status to their partners. Despite the absence of barriers in HIV status disclosure, fears that could create barriers of disclosure were identified. These fears related to their partner's reaction to their HIV status disclosure, and included accusations of infidelity, fear of abandonment, and loss of financial support. Table 4.15 indicated that 53 out of 160 (33.13%; *f*=53) respondents feared accusations of infidelity, 45 out of 164 (27.44%; *f*=45) feared their partners would abandon (reject) them, and 28 out of 164 (17.07%; *f*=28) feared loss of financial support from their partners after disclosure.

Objective two:

- Make recommendations on disclosure education to health care workers performing VHCT to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings.

Self-efficacy refers to HIV positive pregnant women's belief that they are able to disclose their status to their partner. Motivating or enabling factors enhanced their belief in status disclosure to their partners.

Table 4.13 indicates that 166 out of 169 (98.22%; *f*=166) respondents agreed that ARVs are available in their health facilities. One hundred and sixty (160) out of 170 (94.12%; *f*=160) respondents agreed that they should adhere to safer sex practices, for instance, using condoms, and 165 out of 169 (97.63%; *f*=165) agreed that female condoms are available in their health facilities.

The factors that motivated the respondents to disclose their HIV status in Table 4.14 were: 25 out of 77 (32.47%; *f*=25) respondents were interested in knowing their status, and 47 out of 77 (61.04%; *f*=47) needed support from their partners. The HBM, according to Polit and Beck (2017:124), indicates that respondents who perceive that there are benefits, and who believe that the treatment may cure the illness or help prevent it, may be encouraged to disclosure their HIV status to their partners.

Figure 4.12 illustrates that 149 out of 170 (87.64%; *f*=149) respondents received disclosure education. One hundred and fifty-four (154) out of 170 (90.59%; *f*=154) respondents agreed that HIV status disclosure is important for them and their partners (Refer to Table 4.13). Although HIV status disclosure is vital to the respondents and their partners, only 4 out of 60 (6.67%) respondents indicated the benefits of disclosure as encouragement for their partners to go for HIV testing.

Table 4.15 further shows that 29 out of 60 (48.33%; *f*=29) respondents' benefits of disclosure was to get support from their partners, and 18 out of 60 (30%; *f*=18) wanted to maintain good health.

The respondents need to have self-efficacy to be able to disclose their HIV status to their partners. The disclosure education received by respondents, the availability of ARVs and female condoms in their health facilities, the need to get support from their partners, and a need to maintain good health, might encourage them to disclosure their HIV status to their partners. Self-efficacy and the belief that they can disclose their status to their partners through disclosure education can enhance status disclosure to partners.

Recommendations to clinical practice on disclosure education and in-service training of the health care workers and future research were proposed to enhance the pregnant women's HIV status disclosure to their partners. The components of the HBM were used to investigate factors that may contribute to respondents' self-efficacy to disclose their status to their partners and the realisation of the sexually risky behaviour that needed to change. It was recommended that the health care workers should also disseminate the disclosure information to community members through awareness campaigns.

5.2 RESEARCH DESIGN AND METHOD

An explorative, descriptive and cross-sectional quantitative research design was used to explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province. The research was conducted in three hospitals that were purposively and conveniently sampled in the specified district. One hospital was situated in an urban area, while two of these hospitals were in the rural area. The three ARV clinics are in hospitals that pregnant women are referred to for high risk antenatal care from local clinics/hospitals as they need to make hospital bookings for delivery. Therefore, ARV clinics in these hospitals were selected for this study as a vast number of pregnant women visit them.

Data were collected from HIV positive pregnant women who were purposively and conveniently sampled and who met the inclusion criteria, which was discussed in detail in Chapter 3. A questionnaire was utilised as a data collection instrument. The instrument was adapted from an existing questionnaire (with the permission of the developers), combined with a literature search and the HBM as theoretical framework. The questionnaire consisted of structured and open-ended questions and took 20-25 minutes to complete. The following headings were covered in the data collection instrument: the socio-demographic characteristics, sexual and reproductive health information, the motivating and enabling/modifying factors, and the challenges/barriers of HIV status disclosure. The structured questions were analysed with descriptive statistics (SPSS version 24), and open-ended questions were analysed using thematic coding (Refer to Chapter 4 for details).

One hundred and eighty-six (186) respondents were invited to take part in the study and 171 respondents completed the questionnaires. Of the returned questionnaires, 1 was incomplete and discarded. The response rate was 91.40% (calculated from 170, as the incomplete questionnaire was discarded thus not used during data analysis). The response rate was discussed with the statistician who agreed that it was high enough to guarantee accurate results.

5.3 INTERPRETATION OF THE RESEARCH FINDINGS

As indicated in Chapter 4, the interpretation of the research findings was presented in four sections: Section A: Socio-demographic characteristics of respondents, Section B: Sexual and reproductive health information, Section C: The motivating and enabling/modifying factors, and Section D: Challenges/Barriers of HIV disclosure.

5.3.1 Section A: Socio-Demographic characteristics of respondents

Section A dealt with respondents' biographic data including age, religion, marital status, duration with current partner, number of children alive and deceased, employment status, level of education, period of pregnancy, and place of origin.

Employment status, respondents' partners' level of education, and head of the household were also included.

The inclusion criteria in Chapters 1 (Refer to Section 1.9.4) and 3 (Refer to Section 3.3.3) included HIV positive pregnant women within the age range from 18-40 years who were on ARTs for at least one month prior to the study. The reason behind the period of one month prior to participating in this study was to give the HIV positive pregnant women time to disclose their status to their partners. The results indicated that 139 out of 170 (81.76%; *f*=139) respondents were between 18-35 years old (Refer to Table 4.2). This age group represents the child-bearing age for women who are sexually active, and 31 out of 170 (18.23%; *f*=31) respondents were between 36-40 years of age. The youngest respondent was 18 years old, while the oldest respondents were 39 years old. The mean age was 30 years (Refer to Table 4.2). In contrast to this study, a study by Shamu, Zarowsky, Shefer, Temmerman and Abrahams (2014:2) in Harare, Zimbabwe indicated that the youngest women who attended a postpartum clinic were 15 years old. According to another study conducted in Botswana, 56.4% respondents were 21-25 years old, 15.4% were 26-30 years old, 12.8% were 31-35 years old, and 15.4% of the respondents were older than 35 years (Tshisuyi & Davis 2014:28). Letsoalo and Madiba (2014:14) found that participants aged 18-40 years took part in their study; the age range of their participants is thus similar to the respondents' age in the current study. According to Statistics South Africa (NDoH 2017:7), the reproductive age is 15-49 years. The age group 18-40 years in this study falls within the South African reproductive age.

Based on Table 4.2, 157 out of 160 (98.13%; *f*=157) respondents indicated that they were Christians. The results of the study conducted in Botswana showed 24 out of 37 (64.86%; *f*=24) respondents' religious affiliation was also Christian (Tshisuyi & Davis 2014:29). Batte, et al. (2015:4) concur with this study that 88.4% of their Ugandan participants were Christians. The result in the South African study on non-disclosure of HIV status at primary health care clinics in the West Rand shows that 100 out of 106 (94.34%; *f*=100) respondents were Christians, thus proving similar results to this study (Selebogo, et al. 2014:76). According to Statistics South Africa (NDH 2015), 86% of people belong to a Christian religion in South Africa. Christianity per province is found to be: 79.9% Limpopo, 92.2% Mpumalanga, 87.1% Gauteng, 87.8% Western Cape, 83.5% Eastern, 98.4% Northern Cape, 97.7% Free State, 78.5% KwaZulu-Natal, and 93.3% North West (NDoH 2015). This study was conducted in Limpopo Province and respondents were predominantly Christian (98.12%) which is higher than that 79.9% of Limpopo Province (Statistics South Africa 2015). However, it correlates well with other studies mentioned as most respondents belonged to the Christian religion.

Table 4.2 reported that 94 out of 170 (55.29%; *f*=94) respondents were single, which concurs with the study by Selebogo, et al. (2014:76) which also had 71 out of 106 (66.98%; *f*=71) of their South African respondents listed as unmarried. Letsoalo and Madiba's (2014:14) study further indicates that 28% of participants in their study were married. Alemayehu, et al. (2014:3) also state that 44.1% of respondents in their Ethiopian study were married. In contrast, 78% of the respondents in the study conducted in China were married (Qiao, et al. 2016:39). The findings from this study fit well with studies from Africa, as most respondents were not married.

In the current study, 31 out of 170 (18.24%; *f*=31) respondents were with their current partner for less than a year, 69 out of 170 (40.59%; *f*=69) respondents were with their current partner between 2-5 years, and 42 out of 170 (24.70%; *f*=42) respondents were in their current relationship between 6-10 years. One hundred and thirty-nine (139) out of 170 (81.76%; *f*=139) respondents were in their current relationships for more than a year. The duration in the relationship with the current partner of less than a year as indicated by 31 out of 170 (18.24%; *f*=31) respondents might have contributed to non-disclosure of HIV status, as 34 out of 170 (20%; *f*=34) respondents did not disclose their status to their partners. According to the study by Batte, et al. (2015:6), women who were in an unstable relationship were associated with non-disclosure of HIV status to their partners.

Forty-nine (49) out of 152 (32.24%; *f*=49) of the respondents had only 1 child alive and 49 out of 152 (32.24%; *f*=49) respondents had 2 children alive. According to Table 4.2, 23 out of 170 (13.53%; *f*=23) respondents had lost 1 child. According to Walcott, et al. (2013:3), 53% of their respondents had 3 or more children alive. The findings in this study differ from the study by Walcott et al (2013:3) as 32.24% respondents had 1 child, and 32.24% respondents had 2 children alive. Ten (10) out of 49 (20.41%; *f*=10) of the respondents had 2 children alive in the age group 18-25, while 32 out 49 (65.31; *f*=32) had 2 children alive. The result may indicate that younger women had 1 child alive while older ones had 2 children alive.

Table 4.2 reported that 1 (0.59%; *f*=1) respondent was ≤ 3 months pregnant, 9 (5.30%; *f*=9) respondents were 4-6 months pregnant. One hundred and sixty (160) (94.11%; *f*=160) respondents were > 6 months pregnant during the data collection period. In contrast to the current study, Jones, et al. (2013:703), in their study conducted in South Africa, 239 out of 478 (50%; *f*=239) respondents who enrolled in their study were from 24-30 weeks' gestation (from 6-7 months).

One hundred and sixty-three (163) out of 170 (95.88%; *f*=163) respondents grew up in rural areas, while only 7 out of 170 (4.12%; *f*=7) grew up in urban areas. In contrast with these findings, 82% respondents from Aregay, et al's. (2014:2) study were urban dwellers, while 18% were from rural areas. The study conducted in Mpumalanga Province, South Africa by Jones, et al. (2013:705) concurs with the findings in this study, with 100% of their respondents being primarily rural. Qiao, et al. (2016:39) indicated that 83% of their respondents lived in rural areas. Two hospital ARV clinics are situated in the rural area while one hospital ARV clinic is in an urban area. This might have influenced the findings to represent a more rural population. However, it correlates well with the statement of the Department of Health of South Africa (2016), which indicates that approximately 80% of the population in Limpopo Province is based in rural areas.

One hundred and twenty-one (121) out of 170 (71.18%; *f*=121) respondents in this study were unemployed. The study conducted in Botswana by Tshisuyi and Davis (2014:44) had similar results, with 26 out of 39 (66.67%; *f*=26) of their respondents being unemployed. According to Habedi, et al's. (2015:68) study, 90% of their North West Province participants were unemployed. Dlamini and Mokoboto-Zwane (2015:49) also support this study's finding with 63 out of 90 (70%; *f*=63) of their respondents being unemployed. In China, Qiao, et al. (2016:77) indicate that 17.20% of respondents were unemployed, while 82.43% of the respondents were employed, which is in contrast to this study's findings. China had a lower unemployment rate of 4.11% in 2017 while 26.7% South African population was unemployed in 2017

(NDoH 2017). In Ethiopia, Gatta, Limando and Thupayagale-Tshweneagae (2015:71) found 76.7% of employed respondents were able to discuss the risk of HIV transmission with their partners. The unemployment status in this study can thus influence the HIV positive pregnant women’s decision to disclose their HIV status to their partner. Fifty percent (50%) of the female youth in the 20-24 years age group were not in employment, education or training (Statistics SA 2017:11).

One hundred and eighteen (118) out of 170 (69.42%; *f*=118) respondents had secondary education and 44 out of 170 (25.88%; *f*=44) had tertiary education. One hundred and seven (107) out of 163 (65.64%; *f*=107) respondents’ partners attended secondary school, and 52 out of 163 (31.90%; *f*=52) respondents’ partners attended up to tertiary education. There was a higher percentage of respondents’ partners who had tertiary education; 31.90% as compared to 25.88% of respondents who had tertiary education. Tshisuyi and Davis (2014:28) had similar findings; 28 out of 39 (71.79%; *f*=28) pregnant women in their study had secondary education, and 9 out of 39 (23.07%; *f*=9) had tertiary education. According to Madiba and Mokgatle (2017:176), 14.8% of their respondents had no formal education, 24.1% had primary education, 40.2% secondary education, 17% completed Grade 12, and 3.9% had tertiary education. Madiba and Mokgatle’s (2017:176) findings are in contrast to this study, as 69.42% respondents from this study had secondary education and 25.88% had tertiary education, while 40.2% in their study had secondary education, and 3.9% had tertiary education. According to Statistics South Africa (NDoH 2016), 1 244 208 learners are registered for Grade 1, yet only 687 230 complete Grade 12. About 150 000 (22%) pass matric, and 1 in 5 makes it to Higher Education Institutions. Looking at it a little differently, only 12% (or around 1 in 9) of schoolchildren entering Grade 1 will make it to Higher Education Institutions. Higher levels of education, such as secondary and tertiary education, can have an influence in the decision making process such as disclosure of HIV status to the partner.

Sixty-eight (68) out of 170 (40%; *f*=68) respondents indicated that their households were headed by their husbands. In Hlabisa District in KwaZulu-Natal, South Africa, the majority of participants lived with their families: parents, grandparents, and siblings (Van Rooyen & Mhlongo 2015:52). Section B will provide the sexual and reproductive health information of the respondents.

5.3.2 Section B: Sexual and reproductive health information

Section B analysed the sexual reproductive health information of respondents. The following topics were covered: respondents' period/duration diagnosed with HIV for the first time, knowledge of anyone who is HIV positive, disclosure of HIV status, and duration the respondents took to disclose their HIV status. To whom the HIV status was disclosed, disclosure education received, and who performed the disclosure education was also addressed, as well as: Did the person the respondents know disclose her/his status? Did the respondents disclose their HIV status to their partner? Partners' reactions to the respondents' positive status, and partners' HIV status were explored. The number of sexual partners respondents had in the last 3-6 months, the number of sexual partners the respondents' partner(s) had in the last 3-6 months, and the use of condoms also formed part of the questions respondents were asked. The number of pregnancies respondents had while HIV positive and their last CD4 cell count results were also considered under Section B of the questionnaire (Annexure G).

5.3.2.1 Respondent's period/duration diagnosed with HIV for the first time

This portion explored the diagnosis and disclosure practices of respondents.

- **Respondent's period/duration diagnosed with HIV for the first time (N=170)**

Respondents indicated in Table 4.3 that 68 out of 170 (40%; *f=68*) respondents had been diagnosed with HIV for less than a year, while 44 out of 170 (25.88%; *f*=44) were diagnosed 1-3 years ago. Twenty-nine (29) out of 170 (17.06%; *f*=29) respondents were diagnosed 7-9 years ago, and 2 out of 170 (1.18%; *f*=2) respondents were diagnosed more than 10 years ago. The Tanzanian study by Kiula, et al. (2013:5) states that knowledge of the woman's HIV status before current pregnancy positively influenced HIV disclosure to the partner. This is consistent with this study as 41.76% respondents were diagnosed more than 1-6 years ago, and 80% respondents disclosed their HIV status to their partners. The findings from Tshisuyi and Davis' (2014:30) study indicated that 69.23% respondents knew their HIV status for more than one month, and in this study 41.76% had known about their diagnosis for 1-6 years. The longer the duration of knowledge of HIV status and the availability and accessibility to ART may have increased the likelihood of disclosure (Longinetti, et al. 2014:4). According to Qiao, et al. (2016:39), the average duration since the respondents were diagnosed with HIV was 4 years, and 205 out of 405 (50.62%; *f*=205) disclosed their status to their partners. Shiyoleni and Thomson (2013:28) reported that 56% of their respondents had known their HIV status for 2 years or less. According to the literature mentioned, it seems as if most of the women were diagnosed between 1-6 years ago and disclosed their HIV status. This is in contrast to the findings of this study whereby 41.76% were diagnosed 1-6 years ago and 80% disclosed their HIV status to their partners. Thus, according to the literature it seems more likely for HIV positive pregnant women to disclose their status after being diagnosed between 1-6 years.

- **Knowledge of anyone who is HIV positive and the person you know disclosed her/his status to you (n=154)**

Seventy-nine (79) out of 154 (51.30%; *f*=79) respondents knew someone who was HIV positive and 75 out of 154 (48.70%; *f*=75) respondents did not know any person who was HIV positive (Refer to Table 4.4). According to the Northern Ethiopian study, women who had seen an HIV positive person disclosing his/her status to the community had double the odds of disclosing their HIV status to their partners (Alemayehu, et al. 2014:3). It appears that knowing and witnessing someone disclosing his or her HIV positive status to someone, can motivate disclosure of her/his own status.

- **Disclosure education received (N=170)**

One hundred and forty-nine (149) out of 170 (87.64%; *f*=149) respondents reported that they received disclosure education, while 21 out of 170 (12.36%; *f*=21) respondents indicated that they did not receive disclosure education (Refer to Table 4.4). Disclosure education entails providing information before and after an HIV test by the health care workers to the patient. For health care workers, post counselling after a positive or negative HIV test entails making sure you have the right results, you understand what the results mean, you have time to spend with the patient, and you are emotionally ready to give the results to the patient personally (van Dyk 2013: 275). According to Katirayi, Namadingo, Phiri, Bobrow, Ahimbisibwe, Berhan, Buono, Moland and Tylleskar (2016:1), before receiving their first supply of ART, participants received general group counselling, followed by individual counselling. Women received monthly adherence counselling for the next 6 months followed by a general adherence counselling session to transition to three-monthly follow-up visits. Selebogo, et al. (2014:78) concur, as 93.39% of their respondents received health education on disclosure of HIV/AIDS. Alemayehu, et al. (2014:3) found that pre-test counselling was also positively associated with HIV status disclosure. Compared to this study, fewer rates were reported in the study conducted in Botswana by Tshisuyi and Davis (2014:38), where 23.1% respondents were offered health education, and 30.8% received couple counselling and testing, which assisted with HIV status disclosure. Respondents are given time to decide when to disclose their HIV status. The next section will outline the average time taken to disclose an HIV positive status.

- **Number of days/months/years taken to disclose the status**

This question referred to disclosing in general; not specifically to the partner. The findings reported on the number of days/months/years the HIV positive pregnant women took to disclose their status. Respondents in Table 4.4 indicated that 52 out of 153 (33.98%; *f*=52*)* disclosed their HIV status after a year, 96 out of 153 (62.77%; *f*=96*)* disclosed in less than a month, and 17 out of 170 (10%; *f*=17) did not disclose their HIV diagnosis to anyone, including their partners. This can be associated with the unemployment rate in this study of 121 out of 170 (71.18%; *f*=121) while 49 out of 170 (28.82%; *f*=49) respondents were employed. Genet, et al. (2015:5) state that 58% respondents delayed their status disclosure until one month after initial diagnosis, 28% disclosed their HIV positive status within 1-2 months, while 13.4% of their respondents disclosed after 6 months. Alema, et al. (2017:54) found that 67% of respondents disclosed their HIV positive status after one month, and as with Genet, et al's. (2015:5) study, 13.4% disclosed after 6 months. In contrast to the current study, Tshisuyi and Davis (2014:34) reported that 62.2% disclosed their HIV status to another person the same day of diagnosis, 10.8% disclosed in less than a week, 10.8% disclosed after a week, 2.7% disclosed after a month, 5.4% disclosed after 3 months, and 8.1% disclosed after a year. As many as 12% of Tshisuyi and Davis' (2014:34) respondents had never disclosed their HIV-positive status to others, even though these interviews were conducted 6-14 weeks after their babies' births. Mbokane, et al. (2016:14) stated that 65.3% respondents disclosed their HIV status within one week after their diagnosis, 21.6% did so within one month of their diagnosis, 8% waited 6 months before disclosure, and 5.1% only did so after a year. The results are consistent with the findings by Tshisuyi and Davis (2014:34) whereby the duration from diagnosis to disclosure differed from less than a month to a year. In the current study, 160 out of 170 (94.11%; *f*=160) respondents were more than 6 months pregnant during the data collection period and 62.77% disclosed their status in less than a month. The period of pregnancy is 9 months; therefore, pregnant women are encouraged to disclose their HIV status to their partners as soon as possible to comply with PMTCT. The next section will discuss whether the respondents disclosed their HIV status after diagnosis.

- **Did you disclose your HIV status after diagnosis?**

This question referred to disclosing in general and not specifically to the partner. Results in Table 4.4 indicated that 153 out of 170 (90%; *f*=153) respondents disclosed their HIV status after diagnosis, while 17 out of 170 (10%; *f*=17) respondents did not disclose their HIV status to anyone after diagnosis, not even their family members or friends. Findings of Alema, et al's. (2017:54) study indicate 80.1% HIV status disclosure among respondents. The findings in this study are similar to Dima, Stutterheim, Lyimo and De Bruin (2014:170) which stated that 94.3% respondents disclosed their HIV status. Similarly, 94.7% of Tshisuyi and Davis's (2014:56) respondents disclosed their HIV status to someone. According to Mbokane, et al. (2016:14), 124 out of 176 (70.45%; *f*=124) women had disclosed their HIV status to others. These results show that disclosure of HIV status after diagnosis ranges from 70.5% to 94.7%. Disclosure to someone is also encouraged during counselling sessions, even though it may not reduce MTCT of HIV while disclosure to a partner may reduce MTCT.

- **Person to whom HIV positive status was disclosed (n=150)**

The results in Table 4.4 shows that 62 out of 150 (41.34%; *f*=63) respondents disclosed to their family members and 3 out of 150 (2%; *f*=3) disclosed their HIV status to others who were not their family members. Therefore, there was a higher incidence of disclosure to family member in comparison to others. This correlates with Alema, et al's. (2017:54) findings which indicated that 35.18% respondents preferred to disclose their HIV status to their parents. The lack of disclosure to the partners does not aid in the reduction of new infections, as the partners will continue to infect others unknowingly. The immune system may not be able to keep up the fight against the HIV infections as a higher viral load is associated with lower CD4 cell count as the virus lowers the CD4 cells (van Dyk 2013:62). According to Tshisuyi and Davis (2014:32), 66.7% of their respondents disclosed their HIV status to their boyfriend, 41% disclosed to a family member, 23% to friend, 7.7% to their spouse, 5.1% to their casual sex partner, 2.6% to a colleague, and 2.6% to their neighbour. Mbokane, et al. (2016:14) had similar results; 43.8% of pregnant women disclosed their HIV status first to their parents, 25% to their sisters, and 20.5% to their friends. Also, 8% of the HIV-positive women initially disclosed to their brothers, 5.1% to unspecified relatives, and 1.7% to their mothers-in-law. The disclosure of HIV may be associated with disclosure education received. The next section relates to disclosure education which is relevant in addressing objective two.

- **Person who performed the disclosure education (n=151)**

According to Table 4.4, 149 out of 170 (87.64%; *f*=149) respondents reported that they received disclosure education, and 151 out of 151 (100%; *f*=151) of the respondents who received disclosure education stated that they received disclosure education from health care workers.

- **Health care worker advised you to disclose the status (N=170)**

The findings in Figure 4.13 illustrate that 152 out of 170 (89.40%; *f*=152) respondents were advised by the health care worker to disclose their HIV status, while only 18 out of 170 (10.60%; *f*=18) reported that they were not advised by the health care worker to disclose their HIV status. Genet, et al's. (2015:5) study indicated that continuous counselling of respondents at each contact with the health care workers and the use of behavioural rehearsal increased disclosure of an HIV positive status. Respondents in Tanzania indicated that advice and counselling from health care workers were reported to have led to HIV status disclosure (Yonah, et al. 2014:4). The studies by Genet, et al. (2015:5) and Yonah, et al. (2014:4), and the current study, show that health care workers' advice may enhance the disclosure of an HIV positive status. The next section discusses disclosure of HIV status to the partner.

- **Disclosure of HIV positive status to the partner (N=170)**

The results in Table 4.4 indicated that 136 out of 170 (80%; *f*=136) respondents disclosed their HIV status to their partners, while 34 out of 170 (20%; *f*=34) did not disclose their HIV positive status to their partners. These findings are in contrast with Letsoalo and Madiba's (2014:16) study; only 40% of their participants disclosed their HIV status to their partners. Letsoalo and Madiba's findings are however similar to the study by Alema, et al. (2017:54), whereby 41.8% of their respondents disclosed their HIV status to their sexual partners. The proportion of women in a study conducted in Uganda further revealed that 38% disclosed their HIV status to partners (Kiweewa, et al. 2015:5). Yonah, et al. (2014:5) reported the lowest rate of 25.4% of respondents who disclosed their HIV status to their spouses. Alemayehu, et al. (2014:3) found that 63.8% of their respondents disclosed their HIV status to their partners. The proportion of HIV status disclosure to their partners was 60.9% in Togo (Yaya, et al. 2015:6). The above African studies indicate the disclosure rate to a partner from 25% to 60.9% as compared to 80% of respondents in this study. Disclosure to the partner is an essential strategy for the success of PMTCT (Yonah, et al. 2014:4). It also plays a crucial role in the adoption of consistent condom use among couples to prevent new infections and re-infections, and improves the adherence to ARTs, thus enhancing the health status of patients (Yonah, et al. 2014:4). The next section will discuss if there was anyone who disclosed her/his status to the respondent.

- **Is there anyone who disclosed her/his status to you? (n=161)**

Eighty-four (84) out of 161 (52.17%; *f*=84) respondents knew people who disclosed their HIV status to them, while 77 out of 161 (47.83%; *f*=77) respondents indicated that no one disclosed his/her HIV status to them. These results may imply that there are people who still hide their HIV status by non-disclosure. The next section will review the respondents' partners' reaction to HIV status disclosure.

- **Partner's reaction to HIV status disclosure**

Table 4.5 shows that 102 out of 135 (75.56%; *f*=102) respondents' partners were not disappointed with the respondents' HIV status, while 33 out 135 (24.44%; *f*=33) were disappointed with the respondents' HIV status. Thirty-five (35) out of 170 (20.59%; *f*=35) respondents did not answer this question.

One hundred and seventeen (117) out of 134 (87.31%; *f*=117) respondents disagreed that their partners were judgemental towards their HIV positive status, and 17 out of 134 (12.69%; *f*=17) respondents' partners agreed that their partners were judgemental towards their HIV status. Thirty-six (36) out of 170 (21.18%; *f*=36) respondents did not answer the question.

One hundred and twenty-six (126) out of 136 (92.65%; *f*=126) respondents' partners were supportive and caring, while 10 out of 136 (7.35%; *f*=10) respondents' partners were not supportive or caring. Thirty-four (34) out of 170 (20%; *f*=34) respondents did not answer the question.

One hundred and twenty-seven (127) out of 135 (94.07%; *f*=127) respondents' partners accepted their HIV status, while 8 out of 135 (5.93%; *f*=8) respondents' partners did not accept their HIV status. Thirty-five (35) out of 170 (20.59%; *f*=35) respondents did not answer this question.

One hundred and twenty-six (126) out of 133 (94.74%; *f*=126) respondents disagreed that their partners rejected them, and 7 out of 133 (5.26%; *f*=7) agreed that their partners rejected them. Thirty-seven (37) out 170 (21.76%; *f*=37) respondents did not answer the question.

One hundred and twenty-seven (127) out of 134 (94.78%; *f*=127) respondents disagreed that their partners ignored them, while 7 out of 134 (5.22%; *f*=7) respondents agreed that their partners ignored them. Thirty-six (36) out of 170 (21.18%; *f*=36) respondents did not answer the question. The number of respondents who did not answer the questions in Table 4.5 plus the number of respondents who had negative reactions from their partners, is an indication that there might be barriers of disclosing an HIV status to the partner(s). The percentage (21.18%) of the respondents that did not answer this question correlates with the 20% who did not disclose to their partners.

According to the study by Loukid, Abadie, Henry, Hilali, Fugon, Rafif, Mellouk, Lahoucine, Otis and Préau (2014:56), women overestimated the risks of negative reactions by their partners. Nineteen (19) out of 51 (37.25%; *f*=19) of their respondents declared that it had been an error to disclose their HIV positive status to their partners. In the current study, 94.07% respondents' partners accepted the respondents' HIV status, 92.64% respondents' partners were supportive and caring, and 24.44% were disappointed with the respondents' HIV status. The results indicate that with continued support, the health care workers might help the respondents to find ways to disclose their HIV status so that their partners might offer them support and accept their status.

Yaya, et al's. (2015:7) study indicated that patients living in union already have a stable relationship with their partners; this creates an environment of mutual trust and support, and therefore facilitates the sharing of information such as HIV status. The next section will outline the respondents' knowledge of their partner's HIV status.

- **Respondents' knowledge of their partner(s) HIV status**

Table 4.6 indicates that 107 out of 169 (63.31%; *f*=107) respondents agreed that they know the HIV status of their partners, while 136 out of 169 (80.47%; *f*=136) of the respondents indicated that their partners know their HIV status. One hundred and sixty-nine (169) out of 170 (99.41%; *f*=169) respondents answered this question. One hundred and fifty-four (154) out of 169 (91.12%; *f*=154) respondents agreed that it is their partner's right to know their status, while 153 out of 168 (91.07%; *f*=153) agreed that they have a right to know the HIV status of their partners. The 91.12%, who agreed that their partners have a right to know their status, correlates with the 80.47% of partners who know respondents' status. Disparity exists were 91.07% of respondents agreed that they have the right to know the status of their partners while 63.31% of the respondents knew the HIV status of their partners. It seems as if the respondents' partners do not necessarily disclose their HIV status to the respondents, even though 80% of respondents disclosed their status to their partners.

One hundred and forty-four (144) out of 169 (85.21%; *f*=144) respondents agreed to the importance of their partners knowing their HIV status, and 147 out of 168 (87.5%; *f*=147) disagreed that they do not think it is important that they know their partners' HIV status. It seems crucial for respondents that both partners in the relationship should disclose their status.

According to Alemayehu, et al. (2014:4-5), knowledge of partners' HIV status in the study conducted in Northern Ethiopia might have helped the women to have communication and freedom to disclose their status without fear. Overall, a 63.8% disclosure rate of HIV status to their partners was reported in their study. According to another Ethiopian study, knowledge of a partner's HIV status was significantly associated with HIV status disclosure (Alema, et al. 2017:57). In the study conducted in Kampala-Uganda, respondents reported that 39% were aware of their spouses or partners ever testing for HIV, and 31% reported having known their partners were HIV positive (Kiweewa, et al. 2015:3). Knowing the HIV status of their partners had an influence on disclosure. One of the components of the HBM is the motivating/enabling or modifying factors of HIV status disclosure. Knowledge of partners' HIV status might motivate the respondents to disclose their status to their partners. The number of sexual partners respondents and respondents' partners had in the last 3-6 months are discussed next.

- **Number of sexual partners' respondents and respondents' partners had in the last 3-6 months (N=170)**

The findings in Table 4.7 revealed that 3 out of 170 (1.76%; *f*=3) respondents had no sexual partners in the last 3-6 months, as one responded separated from her partner and two were widowed. One hundred and sixty-two (162) out of 170 (95.30%; *f*=162) respondents had one partner in the last 3-6 months. Five (5) out of 170 (2.94%; *f*=5) respondents indicated that they had more than one sexual partners.

As indicated in Table 4.8, 148 out of 170 (87.06%; *f*=148) respondents reported that their partners had one sexual partner, while 15 out of 170 (8.82%; *f*=15) reported that their partners had more than one partners. One respondent's partner had more than four partners, and another one had five partners in the last 3-6 months. This type of behaviour may increase the spread of HIV to other partners and increase the viral load.

According to Tshibangu-Kalala and Mavhandu-Mudzusi (2014:57), young girls' cultural beliefs include considering an older man to be more suited to take care of many wives, to protect, and provide for a woman's necessary needs. This encourages young girls to have relationships with older men to get support from them. However, this exposes young girls to the risk of contracting HIV infection and such a relationship decreases their ability to discuss safe sex, and status disclosure is unlikely.

Extra-marital sexual engagements by respondents who were HIV positive in a qualitative study conducted by Mamogobo, et al. (2013:41) indicated that 20% of respondents continued to have unprotected sex with sexual partners outside of marriage. This is consistent with the findings from a study in Soweto, South Africa by Longinetti, et al. (2014:3), which indicated that 2.72% of their participants had 2 to 4 sexual partners. Respondents in this study shared similar findings to the one by Tshisuyi and Davis (2014:40), where 92.3% had only one partner, while 7.7% had no sexual partners at the time of research. No respondent had more than one sexual partner in their study. Having multiple partners in a relationship require consistent condom use to prevent the spread of HIV, and re-infection with new strains of HIV diseases to the uninfected partners.

- **Condom use (N=170)**

Eighty (80) out of 170 (47.06%; *f*=80) respondents indicated that they sometimes use condoms, while 33 out of 170 (19.41%; *f*=33) always use condoms (Refer to Table 4.9). Twenty-five (25) out of 170 (14.70%; *f*=25) use condoms most of the time, 24 out of 170 (14.12%; *f*=24) never use condoms, and 8 out of 170 (4.71%; *f*=8) rarely use condoms.

It is a matter of concern to the health care workers that 137 out of 170 (80.59%; *f*=137) respondents do not always adhere to safe sex practices, which expose respondents, partners and their unborn babies to re-infections that can hamper MTCT prevention strategies. In the study conducted in Tanzania by Kiula, et al. (2013:5), 58.4% of respondents reported to have used condoms. This study's findings are also in contrast to Alema, et al's. (2017:57) findings where 39.61% respondents used condoms.

Selebogo, et al. (2014:84) indicated that 21% of their respondents did have an unprotected sexual relationship since their last HIV test, while 78% indicated that they adhered to safe sex practices by using condoms since their last HIV test. Respondents' partners who refused to be tested were also not willing to use condoms, even though the women's partner(s) were told that they are HIV positive (Letsoalo & Madiba 2014:16-18).

According to Dlamini and Mokoboto-Zwane (2015:64), giving health advice on disclosure of an HIV status and consistent condom use by partners was important. In their study, 28.9% of breastfeeding mothers concealed their HIV status from their partners, and 46.7% reported that their partners refuse or complain about condom use. This implies that the health care workers should continue to provide counselling on disclosure, to prevent re-infections and promote quality life of HIV positive patients. Consistent condom use may also prevent unwanted pregnancy. The next section will indicate the number of pregnancies respondents had while being HIV positive.

- **Number of pregnancies respondents had while being HIV positive (n=136)**

The findings in Table 4.10 reveal that 57 out of 170 (41.91%; *f*=57) respondents became pregnant more than once after their initial HIV diagnosis. According to Katirayi, et al. (2016:3), in Malawi some of the participants had their first experience with HIV medication during their current pregnancy, while other women enrolled in a PMTCT programme during previous pregnancies. The acceptance of self and falling pregnant while being HIV-positive was also mentioned by Habedi, et al. (2015:79). The disclosure of HIV status, acceptance of self, and taking ARVs to protect the babies was also indicated (Habedi, et al. 2015:79). Habedi, et al's. (2015:79) results show the motivators of HIV status disclosure that are supported by the HBM (Polit & Beck 2017:124). Participants in Mamogobo, et al's. (2013:42) qualitative study show that female participants continued to engage in unprotected sex without using condoms and some even fell pregnant while they were aware of their HIV positive status. These results of Mamogobo, et al. (2013:42) correlate with the findings in this study, as 52% of the respondents became pregnant more than once after their initial HIV diagnosis.

The study results suggest that the respondents' desire to have more babies supersedes the respondents' health status. These may elude that the respondents do not perceive that a threat exists which is caused by non-disclosure of HIV status as indicated by the HBM (Polit & Beck 2017:124). The next section will discuss the respondents' CD4 cell count.

- **Number of the last CD4 cell count (n=95)**

The CD4 cells are T-helper lymphocytes (a type of white blood cell). These cells play an important role in keeping the immune system healthy. The HI virus attaches itself to the CD4 receptors on the outer layer of the CD4 cells (van Dyk, et al. 2017:698). CD4 cell count is the laboratory test most commonly used to estimate the level of immune deficiency in HIV-infected individuals by counting the CD4+T cells (van Dyk, et al. 2017:698). Women with confirmed HIV positive test results are classified according to the WHO 2007 clinical stages, and blood results for CD4 cell count and serum creatinine collected is used to refer pregnant women to the hospital ARV clinic for labour and delivery bookings. In 2015, South Africa started treating HIV-infected people in line with the WHO 2007 guidelines adopted in 2013, which was CD4 cell count of < 500 cells/ml as compared to CD4 cell count < 350 cells/ml that was used before 2013. On 10 May 2016, the South African government removed CD4 cell count as an eligibility criterion for ARV treatment. This means that all HIV-infected people are to be initiated on treatment as soon as possible after diagnosis (van Dyk, Tlou & van Dyk 2017:14). According to Longinetti, et al. (2014:4) 87.4% of their respondents had a CD4 cell count > 200 cells/mm^3. Eighty-eight point five percent (88.5%) had a viral load (VL) < 400 HIV ribonucleic acid (RNA) copies/ml. The advanced stage of HIV disease is defined as having a CD4 cell count below 200 cells/mm^3 and in their study, 87.4% of individuals had a CD4 cell count more than 200 cells/mm^3 (Longinetti, et al. 2014:6). This was an indication that the respondents' conditions were gradually improving.

In this study, 45 out of 95 (47.37%; *f*=45) respondents had more than 500 cells/mm^3 CD4 cell count (Refer to Table 4.11). Twenty-seven (27) out of 95 (28.42%; *f*=27) respondents had a CD4 cell count of more than 300 cells/mm^3 but less than 500 cells/mm^3. Twenty-three (23) out of 95 (24.21%; *f*=23) respondents had a CD4 cell count of less than 300 cells/mm^3. Seventy-five (75) out of 170 (44.12%; *f*=75) did not respond to this question. Falling pregnant with a CD4 cell count below 300cells/mm^3 is a risk as a woman's immune system is severely compromised (van Dyk 2013:71). It is evident in the current study that 24.21% of the respondents' health status was compromised as they had CD4 cell counts < 300 cells/mm^3. According to the study conducted in Poland by Kolodzeij (2016:13), stress had detrimental effects on participants' HIV disease progression and clinical outcomes, including AIDS stage, CD4 decline, and AIDS mortality.

5.3.2.2 Relationship of the following: age, relationship status, employment status and level of education, and disclosure of HIV status to partners (N=170)

- **The correlation between pregnant women's age and HIV status disclosure to their partners**

As indicated in Table 4.12, 41.18% of HIV positive pregnant women who were between 18-30 years, and 38.82% who were between 31-40 years were able to disclose their HIV status to their partners. Both chi-squares and p-values of the two interval years were more or less the same ($x^2 = 0.1$, p-value = 0.71), which were less than the critical value of 3.841 ($p = 0.05$). The p-value of 0.05 is used as a cut-off for significance (math 2018). Since $p > 0.05$, there is not sufficient evidence to reject the null hypothesis. The null hypothesis was that pregnant women's age does not influence HIV status disclosure to partners. In other words, there is no statistically significant difference between the ages of the pregnant women (respondents) and HIV status disclosure to their partner.

- **The association between pregnant women's relationship status and HIV status disclosure to their partners**

Table 4.12 indicates that 40% of pregnant women who were in a relationship disclosed their HIV status to their partners, 40% of pregnant women who were single and 0.59% of pregnant women who were separated reported to have disclosed to their previous partners. The chi-square of those in relationship was ($x^2 = 7.89$, p-value = 0.01), for those who were single it was ($x^2 = 5.04$, p-value = 0.03), and for those who were separated it was ($x^2 = 4.0$, p-value = 0.04), which exceeds the critical value of 3.841 (at one degree of freedom and alpha level of 0.05). That means all p-values are < 0.05, therefore there is sufficient evidence to reject the null hypothesis (math 2018). The null hypothesis was that there is no difference between pregnant women's relationship status and HIV status disclosure to their partners. The alternative hypothesis was that pregnant women's relationship status influenced HIV disclosure to their partners. There was sufficient evidence to accept the alternative hypothesis that pregnant women's relationship status influence HIV status disclosure to partners.

- **The relationship between pregnant women's employment status and HIV status disclosure to their partners**

Table 4.12 shows that 58.24% of the unemployed HIV positive pregnant women disclosed their HIV status to their partners (x^2 = 0.23, p-value = 0.65), while 21.76% of those who were employed (x^2 = 0.57, p-value = 0.51) disclosed their status. Both chi-squares of the employed and unemployed HIV positive pregnant women were less than the critical value of 3.841 (0.05). The p-values were > 0.05; there is thus not sufficient evidence to reject the null hypothesis. The null hypothesis was that the pregnant women's employment status does not influence HIV status disclosure to partners. Therefore, there is no statistical significance between pregnant women's employment status and HIV status disclosure to their partners.

- **The correlation between pregnant women's level of education and HIV status disclosure to their partners**

As indicated in Table 4,12, 60% of HIV positive pregnant women who schooled up to secondary level disclosed their HIV status to their partners (x^2 = 0.07, p-value = 0.81), and 20% of HIV positive pregnant women who schooled up to tertiary level disclosed their HIV status to their partners (x^2 = 0.20, p-value = 0.70). The chi-squares of HIV positive pregnant women who schooled up to both secondary and tertiary levels were less than the critical value of 3.841 (0.05). This means that p-values are > 0.05; there is thus not sufficient evidence to reject the null hypothesis (math 2018). The null hypothesis was that there is no difference between pregnant women's level of education and HIV status disclosure to their partners. Therefore, there is no statistically significant difference between pregnant women's level of education and HIV status disclosure.

- **The association between disclosure education received by pregnant women and HIV status disclosure to their partners**

Table 4.12 displays that 77.06% of those who received disclosure education were reported to have disclosed their HIV status to their partners, while 2.94% of those who did not receive disclosure education disclosed their HIV status to their partners. The chi-square of those who received disclosure education was (x^2 = 5.84, p-value = 0.02), and those who did not receive disclosure education was (x^2 = 41.44, p-value = 0.000), which exceeds the critical value of 3.841 (at one degree of freedom and alpha level of 0.05). That means p-values are < 0.05; therefore, there is sufficient evidence to reject the null hypothesis (math 2018). The null hypothesis was that there was no difference between disclosure education received by the pregnant women and HIV status disclosure to their partners. The alternative hypothesis was that disclosure education provided to pregnant women influence HIV disclosure to their partners. There was sufficient evidence to accept the alternative hypothesis that disclosure education provided to pregnant women influence HIV status disclosure to their partners.

Section C will discuss the motivating/enabling or modifying factors for disclosure.

5.3.3 Section C: The motivating/enabling or modifying factors for disclosure

Section B dealt with sexual and reproductive health information related to respondents' HIV disclosure. This section will cover the following topics: the motivating factors, the benefits of HIV status disclosure, and any other factors that motivated the respondents to disclose their HIV status. One of the components of the HBM – motivation, which is the desire to comply with treatment – was investigated, and the results will be discussed next.

- **Motivating/enabling or modifying factors for disclosure**

The findings from Table 4.13 revealed that 166 out of 169 (98.22%; *f*=166) respondents agreed that ARVs are available in their health facilities. One hundred and sixty (160) out of 170 (94.12%; *f*=160) respondents agreed that they should adhere to safer sex practices, i.e. by the use of condoms, and 165 out of 169 (97.63%; *f*=165) agreed that female condoms are available in their health facilities. There were 87 out of 170 (51.18%; *f*=87) respondents who disagreed that they can have another baby after delivery. Pregnant women diagnosed as HIV positive in South Africa are given HAART, irrespective of their CD4 cell count (Guidelines for Maternity care in South Africa 2015:134). The South African government has made provision for the supply of female condoms in most health facilities; the health care workers should encourage patients to utilise them as part of disclosure education. The health care workers should continue educating the community by whatever means they can to prevent re-infections. A limitation of this study is that the researcher did not ask the respondents if they use female condoms. Mantell, Smit, Exner, Mabude, Hoffman, Beksinska, Kelvin, Ngoloyi, Leu and Stein (2016:7) in the study conducted in South Africa reported that 4.7% of respondents reported they had used a female condom, whereas 97.6% partners had used male condoms. The results indicate that 97.63% of the respondents of this study were aware of the availability of female condoms at health facilities in South Africa. However, according to the study by Mantell, et al. (2016:7) a very small percentage of 4.7% utilise these condoms. Similarly, Chingwaru and Vidmar (2016:30) indicated that the recent fall in the prevalence rate and HIV-associated mortality in Zimbabwe was linked to greater access to ARTs by eligible HIV-infected individuals. The decline in the prevalence rate and mortality was possible as disclosure of HIV status was encouraged during ART visits (Chingwaru & Vidmar 2016:30).

Eighty-nine (89) out of 169 (52.66%; *f*=89) participants agreed that ARVs cure HIV. Ninety-three (93) out of 170 (54.71%; *f*=93) of the respondents agreed that someone who is on ARV treatment can transmit HIV. The results from Table 4.13 indicate that respondents were motivated to take treatment with the hope that they will be cured and not transmit the HIV to their partners. According to the HBM, patients will be motivated to disclose their HIV status if they believe that the condition will be alleviated. According to van Dyk, et al. (2017:697), ARVs supress or prevent the replication of HIV in the cells, however, they do not cure HIV. The suppression of HIV infection might motivate the respondents to disclose their status to prevent re-infections and decrease viral load to improve their health status and reduce the rate of opportunistic infections. On the other hand, ARVs and the suppression of HIV can prevent them from disclosing their status as they might feel that they are cured or that it will not be necessary to disclose as their health is not deteriorating. The next section discusses any other factors that motivated the respondents to disclose their status.

- **Any other factors that motivated the respondents to disclose their status**

Through open-ended questions respondents' were asked to indicate what motivated them to disclose their HIV status. The following themes and sub-themes emerged:

Theme 1: Motivators for status disclosure

This theme had two sub-themes.

Sub-theme 1.1: Motivated to gain support

Forty-seven (47) out of 77 (61.04%; *f*=47) respondents indicated that they have disclosed their status in an effort to gain support from their partners.

Sub-theme 1.2: Disclosing the because of ill health

Five (5) out of 77 (6.49%; *f*=5) respondents reported that they were motivated by the need to disclose the cause of their ill health to disclose their status to their partners. Ninety-three (93) out of 170 (54.71%; *f*=93) respondents did not indicate any factor that motivated them to disclose their HIV status to their partners.

Respondents in Yako and Memeza's (2013:83) study concur that major reasons for disclosure were fear of dying in isolation with no one being aware of their real health problem, and wanting support to be able to deal with HIV/AIDS. Yonah, et al. (2014:3) in their study in Mwanza, Tanzania, stated that 25.79% of respondents were in need of assistance when they disclosed their HIV status. In contrast to the current study, Qiao, et al (2016:74) found that participants were motivated to disclose their status to educate others about the facts of HIV infection, for fulfilling personal gains such as ventilating feelings and seeking help, and similar to this study, for obtaining support from their partners. The most common findings which are similar to this study as supported by Qiao, et al. (2016:74), Yako and Memeza (2013:83), and Selebogo, et al. (2014:104) is a need to inform significant others about the HIV status to get support. Someone who is ill, needs physical, social and financial support from her partner, family members and friends for activities related to daily living. That may be the reason why the respondents felt a need to disclose their status to their partners to get support. According to the HBM, the desire to comply with treatment can motivate the patient to disclose their HIV status to their partner because hiding treatment may lead to non-adherence and its complications such as re-infection, MTCT, and infecting the partner. The next section centres on the benefits of disclosure.

5.3.3.1 The benefits of disclosure

An open-ended question was asked to indicate the benefits of HIV status disclosure. The following themes and sub-themes emerged:

Theme 2: Benefits of disclosure

This theme had three sub-themes.

Sub-theme 2.1: Freedom from secrets

Nine (9) out of 60 (15%; *f*=9) respondents reported that they wanted to feel free (Refer to Table 4.15), as hiding the condition may lead to feelings of guilt and unwarranted stress.

Sub-theme 2.2: Improved health status

Eighteen (18) out of 60 (30%; *f*=60) respondents indicated improved health status as one of the benefits of disclosure (Refer to Table 4.15). Non-disclosure may lead to ill health.

Sub-theme 2.3: Encouraging partner testing

Four (4) out of 60 (6.67%; *f*=4) respondents indicated the benefits of disclosure as encouraging their partner to test for HIV (Refer to Table 4.15). Knowledge of the partner's HIV status is beneficial to both partners, as it will help in the prevention of re-infections and MTCT. One hundred and ten (110) out of 170 (64.71%; *f*=110) respondents did not indicate the benefits of HIV status disclosure to their partners.

Yonah et al. (2014:4) reported similar findings as respondents claimed that the benefits of disclosure include: 4.8% freedom to use ARVs, 49.2% emotional support, and 11.9% financial support. According to Maman, van Rooyen and Groves (2014:5), some participants disclosed their HIV status so that their partners can get tested, while others also disclosed because they wanted support from their partners.

Kiweewa, et al. (2015:4) concur that 67% of their respondents also received social support from their partners, and 25% of respondents' partners subsequently underwent HIV testing because of the disclosure. The respondents spoke of colleagues and managers viewing their HIV status as a non-issue and they had interest in their health status, also supporting them and showing empathy (Kiweewa et al. 2015:4). Respondents indicated that the benefits of HIV status disclosure in Yaya, et al's. (2015:6) study include access to health care services offered to people living with HIV/AIDS and social support activities implemented by non-governmental organisations. One of the components of the HBM's perceived benefits that the patients believe a given treatment will help prevent illness. The perceived benefits that a given treatment will help in the prevention of MTCT and in the advancement of the disease, is beneficial enough to encourage the respondents to disclose their status to their partners. Respondents care for their partners and want to encourage them to undergo HIV testing and start ARV treatment. Even though there are benefits to disclosing an HIV status, the health care workers should not ignore that the respondents may encounter challenges/barriers. Section D will outline the challenges/barriers of HIV status disclosure.

5.3.4 Section D: The challenges/barriers and disadvantages of disclosure

Another of the components of the HBM is the perceived barriers of status disclosure. The respondents were requested to indicate “strongly agree”, “agree” or “strongly disagree” or “disagree” to answer the questions asked. These aspects focused on challenges and/or barriers that may inhibit the disclosure of HIV status to take place. The following topics were covered: the challenges and barriers of HIV status disclosure, any other challenges (barriers) that were not included in those mentioned, and disadvantages of disclosure.

- **The challenges/barriers of disclosure**

Respondents claimed that some of the challenges/barriers of disclosure were related to fears (Refer to Table 4.16). Fifty-three (53) out of 160 (33.13%; *f*=53) respondents were afraid of accusations of infidelity. The results in Table 4.16 is consistent with the number of respondents who did not disclose their status to their partners as 45 out of 164 (27.44%; *f*=45) were afraid that their partners would abandon them. Although 70.98% of the respondents’ partners worked far, 137 out of 163 (84.05%; *f*=137) agreed that they know that they should tell them. However, 33.13% of respondents were afraid of accusations of infidelity, 45 out of 164 (27.44%; *f*=45) were worried that their partners would abandon them, and 28 out of 164 (17.07%; *f*=28) indicated that their partners would no longer finance them. This may be an indication that the respondents had challenges to disclose their status.

Barriers of disclosure according to van Rooyen and Mhlongo (2015:55-56), unlike in this study, included enacted stigma which was the usual reaction from the person the participants disclosed their HIV status to. Stigma is a feeling of disapproval that people have about a particular illness (Hornby 2015:1486). Respondents also witnessed fellow community members being stigmatised when a person was identified as being associated with HIV/AIDS, especially women.

Kiweewa, et al. (2015:4) is supported by the current study in that 8% of respondents experienced separation/neglect from their partners due to their HIV positive status. Nine percent (9%) experienced negative reactions, which included violence/stigmatisation and confidants telling other members of the community. Five percent (5%) experienced loss of monetary support. Maman, et al. (2014:447) also identified blame, abandonment, and violence as challenges for HIV status disclosure. According to Shilovskaya (2015:13-14), isolation at the clinics and stigmatisation by parents, family and community members were identified as barriers to disclosure.

HIV positive pregnant women in the South African study were expelled from their homes by their parents because of their HIV positive status (Habedi, et al. 2015:116). Another study by Malatji, Makhubele and Makofane (2014:416) alluded that relatives and in-laws blamed the participants for the death of their husbands for not being faithful. The results are consistent with other studies conducted in South Africa.

Unless the challenges/barriers of disclosure are addressed, disclosure of HIV status is unlikely to take place and new infections will continue to emerge.

- **Any other challenges (barriers) that were not included in those mentioned above**

This question was phrased as on open-ended question to provide the opportunity to triangulate quantitative data with qualitative data.

- **Disadvantages of disclosure**

The heading on any other challenges (barriers) that were not previously included was combined with the disadvantages as it yielded similar results.

The results are based on respondents (n=40) who answered this question. A variety of disadvantages/challenges in the disclosure of HIV status to the partner was identified. The following themes and sub-themes emerged:

Theme 3: Challenges/barriers/disadvantages of status disclosure

This theme had four (4) sub-themes.

Sub-theme 3.1: Fear of rejection

One hundred and thirty (130) out of 170 (76.47%; *f*=130) respondents did not answer the question. Nineteen (19) out of 40 (47.50%; *f*=19) respondents stated one of the fears of disclosure was rejection. The risks of HIV status disclosure to the partners include: fear of infidelity, blame, abandonment, rejection, discrimination, and disruptions of family relationships, and physical and emotional abuse (Tshweneagae, et al. 2015:4). Similar to Letsoalo and Madiba's findings, Nyandat and van Rensburg (2015:61) in a study conducted in Kenya also reported that 17% of HIV positive women did not disclose their status as they had a fear of abandonment, discrimination, violence, accusations of infidelity, and denial of social support from their partners.

Sub-theme 3.2: Violent response by partner

Seven (7) out of 40 (17.50%; *f*=7) respondents indicated violent responses with aggressive behaviour as a challenge in disclosure of HIV status. Refer to sub-theme 3.1.

Sub-theme 3.3: Projection of blame by partner

Four (4) out of 40 (10%; *f*=4) respondents identified a disadvantage of disclosure as being blamed by the partners that they brought HIV into their relationships. Refer to sub-theme 3.1.

Sub-theme 3.4: Fear of stigmatisation

Ten (10) out of 40 (25%; *f*=10) respondents reported fear of stigmatisation as a disadvantage in disclosing their HIV status to their partners. According to the HBM, the focus is on changing the behaviour by encouraging compliance and preventive healthcare practices. Identifying the disadvantages of status disclosure can assist in the facilitation of disclosure through disclosure education and self-efficacy that can enhance compliance with treatment and condom use as a preventive strategy. Van Rooyen and Mhlongo (2015:76-77), in their study conducted in Hlabisa District, KwaZulu-Natal, South Africa reported that 7 out of 10 participants indicated that living with HIV/AIDS exposed them to stigmatisation.

5.4 CONCLUSIONS

The conclusion of this study will be discussed based on how the objectives of the study were met.

5.4.1 The first objective

- **Explore and describe the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province**

In this chapter, the findings regarding the perceived barriers of HIV status disclosure of pregnant women to their partners were presented. One hundred and fifty-three (153) out of 170 (90%; *f*=153) respondents indicated that they disclosed their status to family members, while 17 out of 170 (10%; *f*=17) respondents did not disclose their status to anybody. One hundred and thirty-six (136) out of 170 (80%; *f*=136) respondents disclosed their HIV status to their partners, and 34 out of 170 (20%; *f*=34) did not disclose their HIV status to their partners. It is evident that 80% of respondents did not experience barriers of disclosing their status to their partners, yet 20% had challenge/barriers in disclosing their HIV status to their partners.

One hundred and thirty-six (136) out of 170 (80%; *f*=136) respondents do not adhere to safe sex practices, and only 33 out of 170 (19.41%; *f*=33) respondents always use condoms. Even though 80% of the respondents disclosed their HIV status to their partners, 80% do not adhere to safe sex practices. This statement was supported by the fact that 41.91% of HIV positive pregnant women became pregnant more than once after their initial HIV diagnosis.

There were 45 out of 164 (27.44%; *f*=45) respondents in this study who indicated that their partners might abandon them after disclosure of their HIV status. Most of the respondents in this study were single, 94 out of 170 (55.29%; *f*=94), 121 out of 170 (71.18%; *f*=121) of the respondents were unemployed (Refer to Figure 4.2) and financially dependent on their partners, which might be a barrier to disclose their status to their partners. Some of the respondents alluded to the issue of stigma, anger and rejection as disadvantages of HIV status disclosure. The motivators (Theme 1) confirmed that 61.04% of the respondents were motivated to disclose their status in an effort to gain support from their partners, and 6.49% of the respondents were motivated by their ill health to disclose their status to their partners. The benefits (Theme 2) indicated that 48.33% of respondents (Refer to Table 4.14) needed support from partners, 30% viewed a benefit of HIV status disclosure as improving ones' health status, and 6.67% claimed it encouraged their partners to test.

The HBM postulates that health-seeking behaviour is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing it. The following major components of the HBM formed part of the conclusions of this study: perceived susceptibility, perceived severity, perceived benefits, perceived costs, motivation and enabling or modifying factors (Polit & Beck 2017:124).

- **Perceived susceptibility**

Perceived susceptibility is a person's perception that a health problem is personally relevant or that a diagnosis is accurate (Polit & Beck 2017:124). Table 4.3 displayed that 100% of the respondents had been diagnosed with HIV between 1 year to more than 10 years. This is an indication that they perceive that a health problem exists and that the diagnosis was accurate as they received pre- and post-test counselling and disclosure education by health care workers.

- **Perceived severity**

Perceived severity is a person's perception of the severity of a health problem and the serious implications of the problem (Polit & Beck 2017:124). Unless the HIV positive pregnant woman perceives the severity of the diagnosis to be high enough to have serious implications, status disclosure to the partner is unlikely to happen. Respondents may perceive the severity of disclosure as high as the implications are linked to physical and social consequences. Disclosure of HIV status to the partner can result in financial loss as a physical consequence, and stigma and rejection from their community as social consequences.

According to the findings in this study, respondents' lack of knowledge on HIV, and the incorrect belief that ARVs could cure the disease resulted in them viewing their HIV status as less severe. If they think it is curable, it loses perceived severity. As the respondents incorrectly believed that ARVs cure HIV, they might have decided not to disclose to their partners as they thought they were cured and did not see the severity of the illness and the necessity for disclosure. Sixty percent (60%) of the respondents had a period of less than a year since they were diagnosed with HIV. Eighty-seven point six four percent (87.64%) reported that they received disclosure education and 100% stated that the health care workers advised them to disclose their HIV status to their partners. The time since diagnosis can relate to the perceived severity, as the HIV positive pregnant women come to terms with the illness and what it entails. Disclosure education can also create awareness of the severity of the illness as they realise that they need to take lifelong ARV treatment. Some of the respondents disclosed their status due to the physical consequence of their health failing. Therefore, they perceive it as severe.

- **Perceived benefits**

Perceived benefits are the patients' beliefs that a given treatment will cure the illness or help prevent it (Polit & Beck 2017:124). The benefits of disclosure (Theme 2) indicate that 48.33% of the respondents needed to receive support from partners, 30% needed improved health status, and 6.67% saw the benefits of their partners testing for HIV. The respondents might benefit from HIV status disclosure to their partners by receiving support from partners, improved health status, treatment adherence, and partners testing to enhance preventive measures such as, consistent condom usage, unwanted/unplanned pregnancies, MTCT, re-infections, and the spread of infection to the partner by the respondents.

- **Perceived costs**

Perceived costs include the complexity, duration, and accessibility of the treatment (Polit & Beck 2017:124). Pregnant women who are diagnosed with HIV are to take ARVs for the rest of their lives. The ARVs are available free of charge in government health facilities. The majority of respondents in this study, 166 out of 169 (98.22%; *f*=166), agreed that ARVs are available in their health facilities. Obtaining and using ARVs can enhance status disclosure as the partner might become aware of regular clinic visits and additional medicine (ARVs) that the pregnant woman is taking. The nature of ARV treatment is lifelong, thus it might enhance status disclosure as the partner will become aware, as the ARVs are taken even after the pregnancy.

- **Motivation and enabling or modifying factors for status disclosure**

According to the HBM (Polit & Beck 2017:124), motivation is the desire to comply with treatment. Respondents, who are motivated to adhere to the treatment, are also liable to disclose their HIV status and adhere to treatment protocols. Theme 1 stated that the motivators of disclosure were: 61.04% of the respondents needed to gain support from their partners, and 6.49% were motivated by their ill health to disclose their HIV status to their partners. This study further indicates that 98.22% respondents agreed that ARVs are available in their health facilities. Respondents need support from their partners to cope with the effects of their HIV status and to ensure treatment adherence.

One hundred and sixty-nine (165) out of 169 (97.63%; *f*=165) respondents agreed that female condoms are available in their health facilities, and 160 out of 170 (94.12%; *f*=160) agreed that they should adhere to safer sex practices, i.e. the use of condoms. The research further indicates that 47 out of 77 (61.04%; *f*=47) respondents needed support from partners, 25 out of 77 (32.47%; *f*=25) were interested in knowing their partners' status, and 5 out of 77 (6.49%; *f*=5) were motivated by their deteriorating health. Enabling or modifying factors also include aspects of patient satisfaction, which concerns service delivery at ART clinics.

5.4.2 The second objective

- **To make recommendations on disclosure education to health care workers performing VHCT to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings**

The health care workers should enhance self-efficacy. Self-efficacy is the belief in ones' ability to perform a desired behaviour (van Dyk, et al. 2017:189). Respondents need to have a strong desire to disclose their HIV status to their partners without fear so that the couples are able to adhere to treatment and preventive strategies during sexual relations. According to the HBM, the desire to comply with treatment might motivate the respondents not to hide their status from their partner.

5.5 LIMITATIONS

The study was conducted with HIV positive pregnant women in the Capricorn District, Limpopo Province, therefore, the results may not be generalised to other settings of HIV-infected people. One hundred and eighty-six (186) respondents were invited to take part in the study, and 171 respondents completed the questionnaires. Of the returned questionnaires, 1 was incomplete and discarded, thus the response rate was 91.40%, which was high enough to guarantee accurate results. One hundred and seventy (170) questionnaires were analysed. The number of respondents was a limitation as the topic under study is sensitive. Therefore, some of the respondents who were invited to participate in the study were not willing to share their private lives with the researcher. An aspect of the HBM (Polit & Beck 2017:124) is personality as an enabling factor, and patient satisfaction of service delivery at ART clinics could have been added to the questionnaire for more depth. Only the HIV positive pregnant women were included in the study and the voices of their partners were not heard. The researcher included these aspects as recommendations. Utilisation of female condoms was also not investigated in this study; therefore, it is recommended that future research should also investigate the use of female condoms.

5.6 RECOMMENDATIONS

The study revealed that 80% of respondents did not have barriers of HIV status disclosure as they disclosed their HIV status to their partners, while 20% did not disclose. For HIV to be prevented and for mortality/morbidity to decrease, every HIV positive pregnant woman should be encouraged to disclose her status to her partner. Status disclosure can be enhanced through disclosure education to strengthen the self-efficacy of the HIV positive pregnant women. However, clinical practice, education on HIV disclosure, and further research on this topic need to be conducted.

5.6.1 Clinical practice

ARVs are available and accessible in all public health facilities in Limpopo Province, therefore pregnant women need to make an effort to visits them earlier to be screened for HIV.

- The health care workers in Capricorn District, Limpopo Province should provide pre-pregnancy HIV screening to women who plan to fall pregnant to reduce complications of pregnancy, as time is an important factor in HIV status disclosure. A more extended duration on ARVs led to an increased tendency/likelihood to disclose HIV status among people living with HIV/AIDS in this study.
- All partners should be encouraged to attend antenatal clinics with their pregnant partners to facilitate couple counselling as the p-values of those who were in a relationship, single, and separated were < 0.05. There was sufficient evidence to reject the null hypothesis. The null hypothesis was that there is no difference between relationship status of pregnant women and HIV status disclosure to their

partners. The alternative hypothesis was that relationship status of pregnant women influenced HIV disclosure to their partners. There was sufficient evidence to accept the alternative hypothesis that the relationship status of pregnant women affects HIV status disclosure to their partners.

- The health care workers should continue to advise/encourage pregnant women to disclose their status to their partners at each clinic visit. Disclosure education should be an on-going process and not a once-off information giving.
- The health care workers should provide information to pregnant women on CD4 cell count, viral load and management/treatment of HIV during antenatal visits.
- The health care workers should provide information to the pregnant women on MTCT and prevention strategies.
- The health care workers should enhance self-efficacy, defined as the belief in ones' ability to perform a desired behaviour, e.g. to insist on condom use or to adhere to antiretroviral treatment (van Dyk, et al. 2017:189). The HIV positive pregnant women are required to have a strong belief in themselves to disclose their HIV status to their partners without fear. This will enhance respondents' adherence to safe sex practices with the use of condoms every time they engage in sex and taking treatment without interruptions.
- The health care workers should discuss the perceived susceptibility and severity with the pregnant women as part of the post-test counselling and disclosure education. Any misconceptions need be addressed and it should be ensured that the HIV positive pregnant woman must take ownership of her status by sharing it with her partner. She should also understand her diagnosis and believe that it is accurate.
- The health care workers can ensure that the HBM's enabling/modifying factors are addressed. The following enabling factors are to be covered: support from the partners, availability of condoms/treatment in health facilities, and ill health. The health care workers should make sure that HIV positive pregnant women are satisfied with the service delivery at the ART clinics.

5.6.2 Education

Education relates to disclosure education and in-service training by the health care workers. The p-values of the disclosure education received against HIV status disclosure was < 0.05. The null hypothesis was rejected as there was a statistically significant difference between relationship status and HIV status disclosure to their partners.

- Health care workers in the Capricorn District, Limpopo Province, should offer the HIV positive pregnant women disclosure education and highlight the importance of adherence to ARVs whenever they come to collect treatment to facilitate adherence to treatment.
- The health care workers should re-educate the community of Capricorn District about the importance of condom use to prevent re-infection and transmission of HIV during their meetings to prevent the spread of the disease.
- Health care workers should re-educate the Capricorn District communities about the benefits of disclosure and the impact of stigmatisation by the utilisation of stakeholders like Chiefs, politicians and the media.
- The Department of Health should draw educational guidelines for HIV status disclosure that should be used during routine counselling and testing by health care workers.
- Health care workers should facilitate or refer pregnant women who are HIV positive to support groups. Fears relating to status disclosure can be discussed in a safe and supportive environment.
- The Department of Health should facilitate in-service training for health care workers on the application of the HBM in HIV counselling of pregnant women as discussed under the practice recommendations.

5.6.3 Future research contributions

- To investigate the trend of stigmatisation and its impact on society.
- The views of the respondents’ partners on ARVs were not heard and therefore further research could be conducted that includes respondents’ partners.

- Pregnant women's satisfaction with service delivery at ART clinics should be researched.
- It seems as if the respondents are aware of the availability of condoms, but the role of condom use in safe sex practices related to disclosure of HIV status needs to be explored in future research in more depth.
- Condoms use by pregnant women, including female and male condoms, should be investigated.

5.7 CONCLUDING REMARKS

Recommendations were made on disclosure education for health care workers performing VHCT with HIV positive pregnant women, to enhance the self-efficacy of these women to disclose their HIV status to their partners based on the study findings.

The perceived barriers of HIV status disclosure of pregnant women to their partners in this study were explored, presented and analysed. The purpose of this study was to investigate the perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province, to enhance disclosure of their HIV status to their partners. Disclosure can be enhanced through disclosure education and self-efficacy of these pregnant women. A quantitative, descriptive research design was used. A previously tested questionnaire was utilised with the permission from the developers to compile and collect data. Respondents were selected through non-probability (convenient and purposive) sampling.

The study revealed that even though resources are available for the HIV positive pregnant women to disclose their HIV status to their partners, some challenges still exist. Lack of self-efficacy and an inability to apply the HBM might lead to MTCT of HIV, re-infection, transmission of HIV to the partner, and non-adherence to treatment, which can lead to mortality and morbidity. The study revealed that the p-values of those who were in a relationship, single and separated were < 0.05. The null hypothesis was rejected since there was statistically significant difference between relationship status and HIV status disclosure to their partners. Health care workers have a duty to invite respondents’ partners to accompany the women to the clinic to enhance partner support.

The study assisted the researcher to understand the challenges/barriers pregnant women deal with in the disclosure of HIV status to their partners. The provision of treatment by the Department of Health is commendable. Early diagnosis of HIV can enhance access to HIV/AIDS care that improves disclosure, which might assist in reducing new infections. Health care workers could be enlightened about the health care needs of their patients, which include re-education regarding the actions of the ARVs to enhance adherence to treatment.

Even though the South African government provide treatment for HIV positive patients, adherence to the ARV drugs may be problematic with non-disclosure. The study revealed that 20% of the respondents had barriers of disclosing their HIV status to their partners as 80.58% respondents did not always use condoms, thus PMTCT was not adhered to. This revealed that p-values of the disclosure education received against HIV status disclosure were < 0.05. The null hypothesis was rejected. The null hypothesis was that that there was no difference between disclosure education received by the pregnant women and HIV status disclosure to their partners. The alternative hypothesis was that disclosure education provided to pregnant women influence HIV disclosure to their partners. There was sufficient evidence to accept the alternative hypothesis that disclosure education provided to pregnant women influence HIV status disclosure to their partners.

Health care workers should be made aware of the importance of their role in disclosure education and in facilitating HIV status disclosure to partners. The health care workers should also disseminate the disclosure information to community members through awareness campaigns to reduce the number of new infections and stigma of the HI virus. Women are the cornerstone of society. Self-efficacy can guide them to disclose their status as the key components of the HBM is applied during disclosure education provided by health care workers. Disclosing their HIV status is crucial in breaking the silence and increasing prevention strategies to reduce MTCT and HIV-related mortality.

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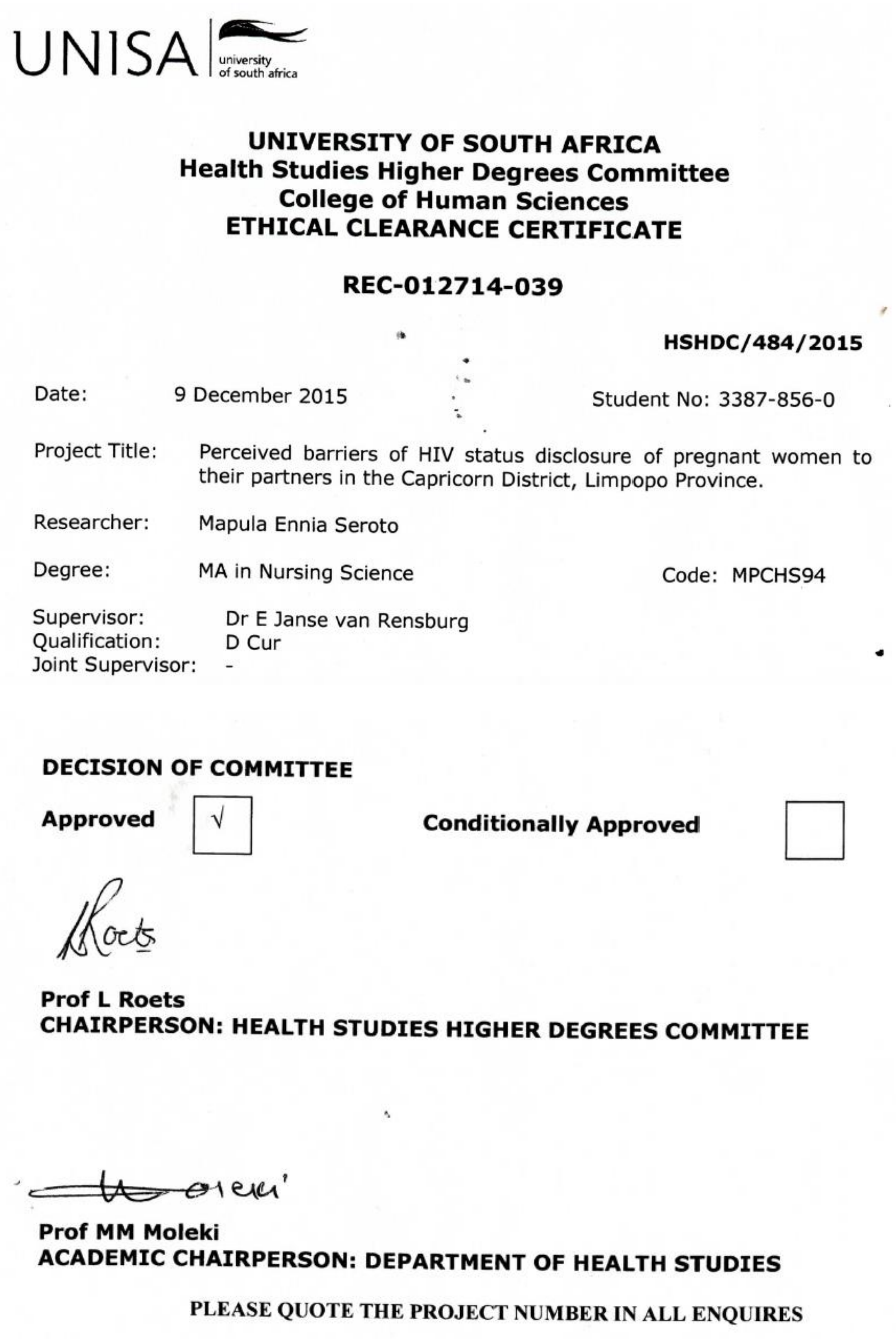
ANNEXURE A

APPROVAL FROM THE HIGHER DEGREE COMMITTEE, UNIVERSITY OF SOUTH AFRICA: RESEARCH AND ETHICS



UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

REC-012714-039

HSHDC/484/2015

Date: 9 December 2015 Student No: 3387-856-0

Project Title: Perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province.

Researcher: Mapula Ennia Seroto

Degree: MA in Nursing Science Code: MPCHS94

Supervisor: Dr E Janse van Rensburg
Qualification: D Cur
Joint Supervisor: -

DECISION OF COMMITTEE

Approved ☑ **Conditionally Approved** ☐

Roets

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

Prof MM Moleki
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

ANNEXURE B

LETTER OF SEEKING CONSENT FROM THE DEPARTMENT OF HEALTH: LIMPOPO PROVINCE

Enq: Seroto M. E	P. O Box 284
Student N0:33878560	Lenyenye
Cell N0: 08 297 3267	0857

Head of Department

Limpopo Department of Health

Sir/Madam

<u>Re: Request for the use of HIV positive pregnant women to collect data (Master of Arts in Nursing Sciences).</u>

1. The above matter refers.

2. Mapula Seroto student N0: 33878560, is conducting academic research study and is attached to the University of South Africa. The research study is for the Masters in Nursing Science.

3. The title of the research study is “Perceived barriers of HIV status disclosure of pregnant women to their partners in Capricorn District, Limpopo Province”.

4. Kindly, we are requesting the Department of Health to allow Mapula to collect data from HIV positive pregnant women within Mankweng, Pietersburg and Seshego Hospitals.

5. To verify and/or confirm the details kindly contact my supervisor of this research as follows: Dr. ES van Rensburg, Tel NO: 012 429 6545, Cell NO: 073 787 0896, Email address: jvrenes@unisa.ac.za.

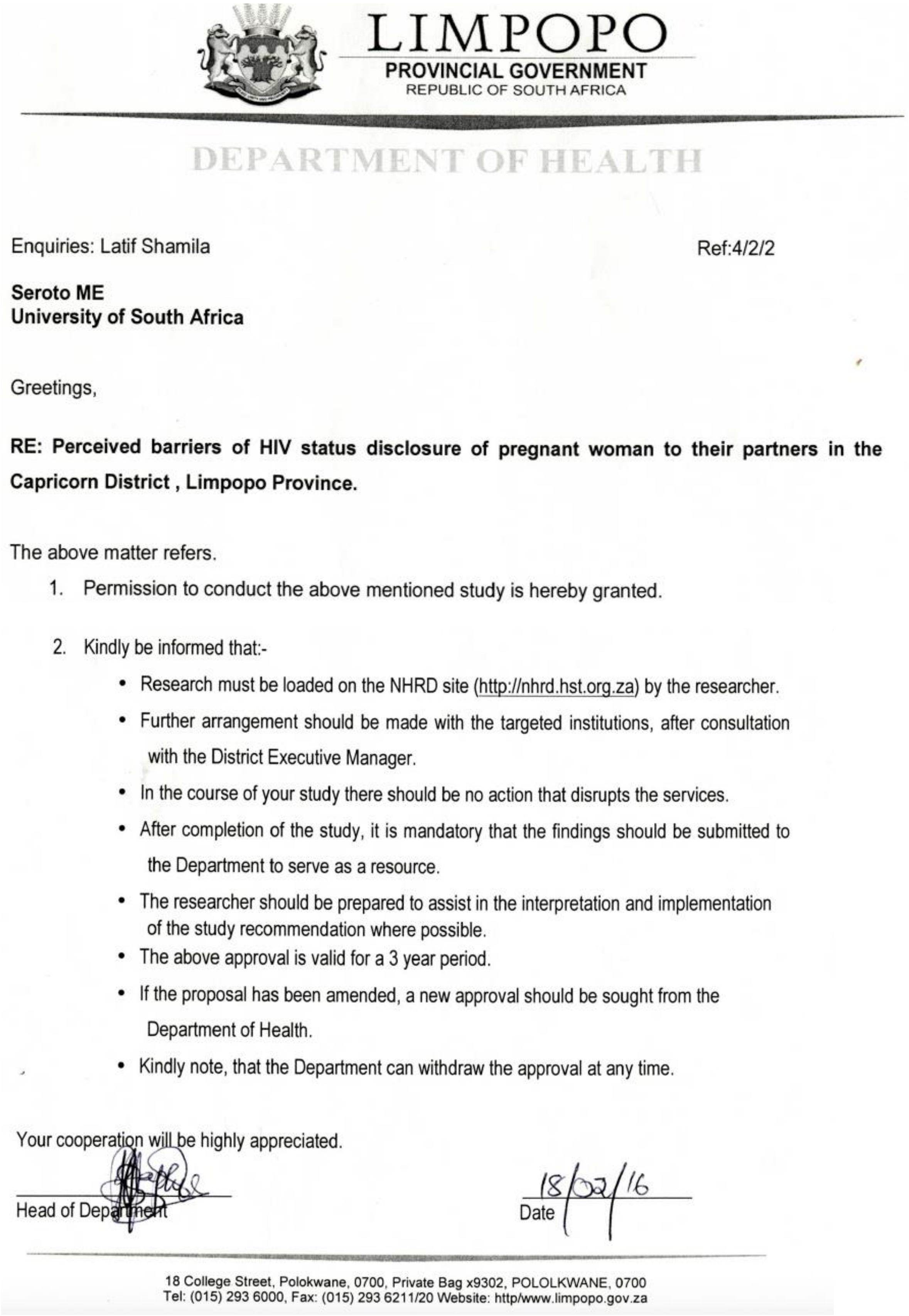
Your approval to conduct this study will be greatly appreciated.

Yours Faithfully

Seroto Mapula Ennia

ANNEXURE C

APPROVAL FROM THE LIMPOPO DEPARTMENT OF HEALTH



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Latif Shamila Ref:4/2/2

Seroto ME
University of South Africa

Greetings,

RE: Perceived barriers of HIV status disclosure of pregnant woman to their partners in the Capricorn District , Limpopo Province.

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.

2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

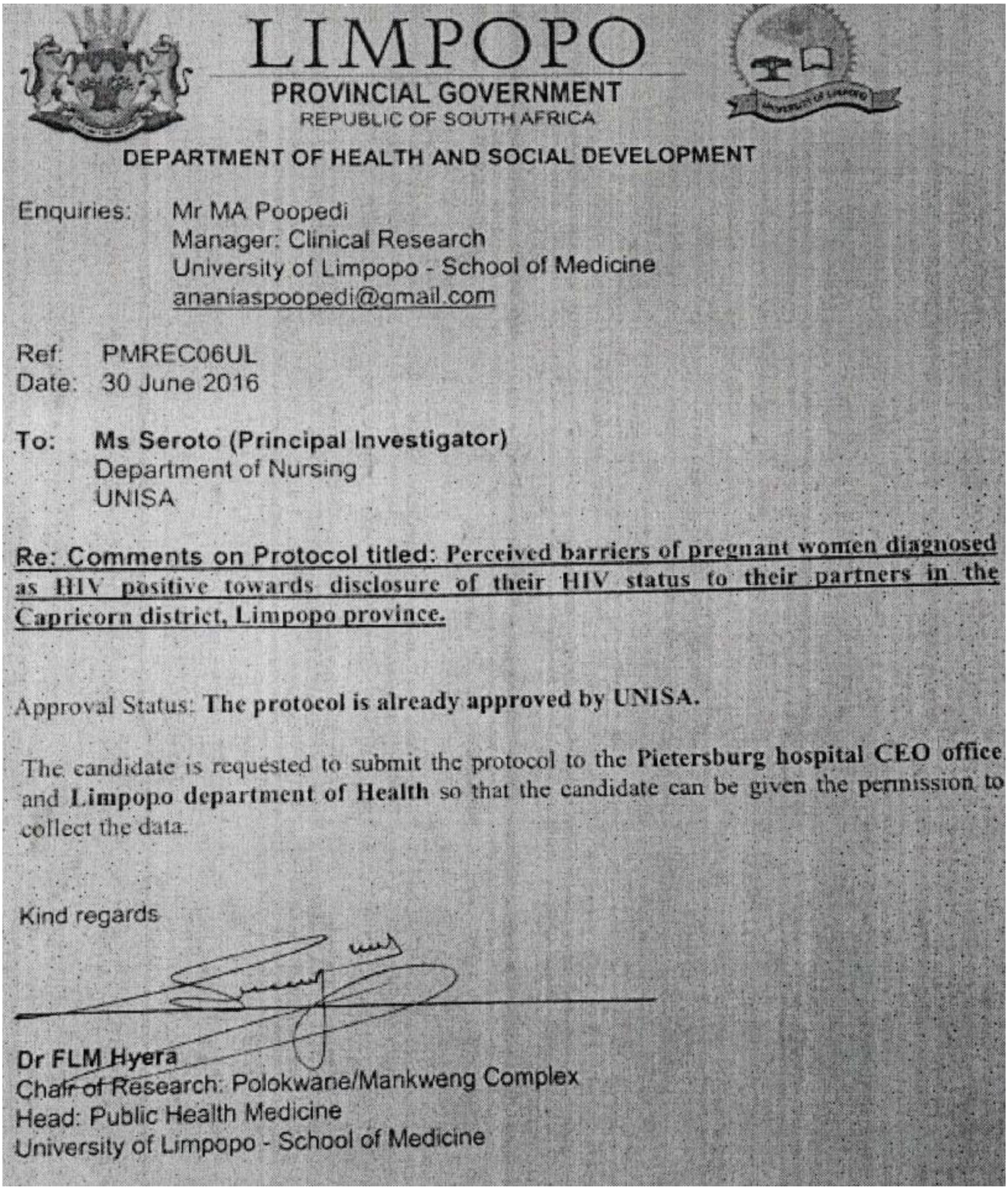
Head of Department

18/02/16
Date

18 College Street, Polokwane, 0700, Private Bag x9302, POLOLKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

ANNEXURE D

APPROVALS FROM THE FACILITIES' SUPERVISORS



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT

Enquiries: Mr MA Poopedi
Manager: Clinical Research
University of Limpopo - School of Medicine
ananiaspoopedi@gmail.com

Ref: PMREC06UL
Date: 30 June 2016

To: Ms Seroto (Principal Investigator)
Department of Nursing
UNISA

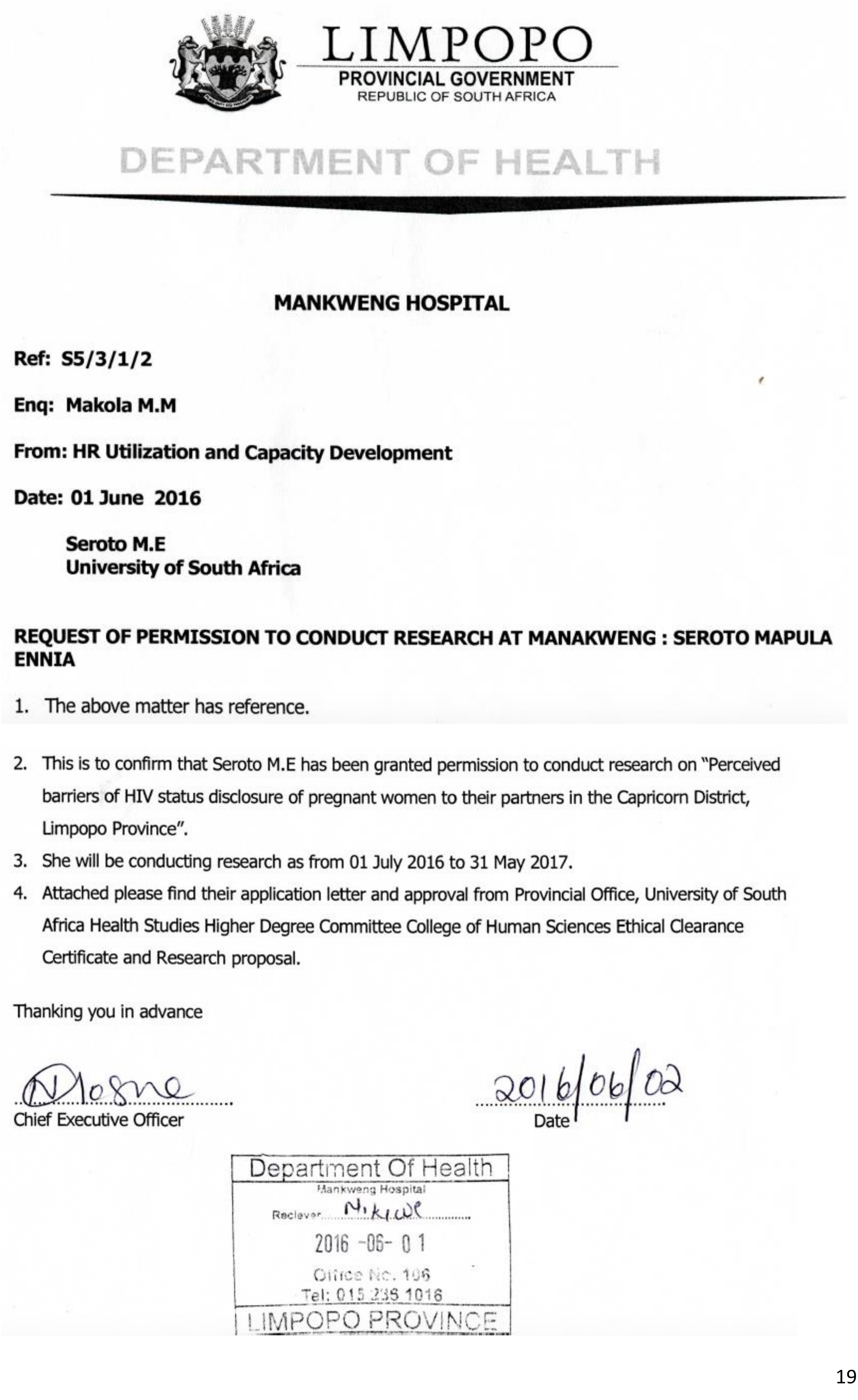
Re: Comments on Protocol titled: Perceived barriers of pregnant women diagnosed as HIV positive towards disclosure of their HIV status to their partners in the Capricorn district, Limpopo province.

Approval Status: **The protocol is already approved by UNISA.**

The candidate is requested to submit the protocol to the **Pietersburg hospital CEO office** and **Limpopo department of Health** so that the candidate can be given the permission to collect the data.

Kind regards

Dr FLM Hyera
Chair of Research: Polokwane/Mankweng Complex
Head: Public Health Medicine
University of Limpopo - School of Medicine



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

MANKWENG HOSPITAL

Ref: S5/3/1/2

Enq: Makola M.M

From: HR Utilization and Capacity Development

Date: 01 June 2016

Seroto M.E
University of South Africa

REQUEST OF PERMISSION TO CONDUCT RESEARCH AT MANAKWENG : SEROTO MAPULA ENNIA

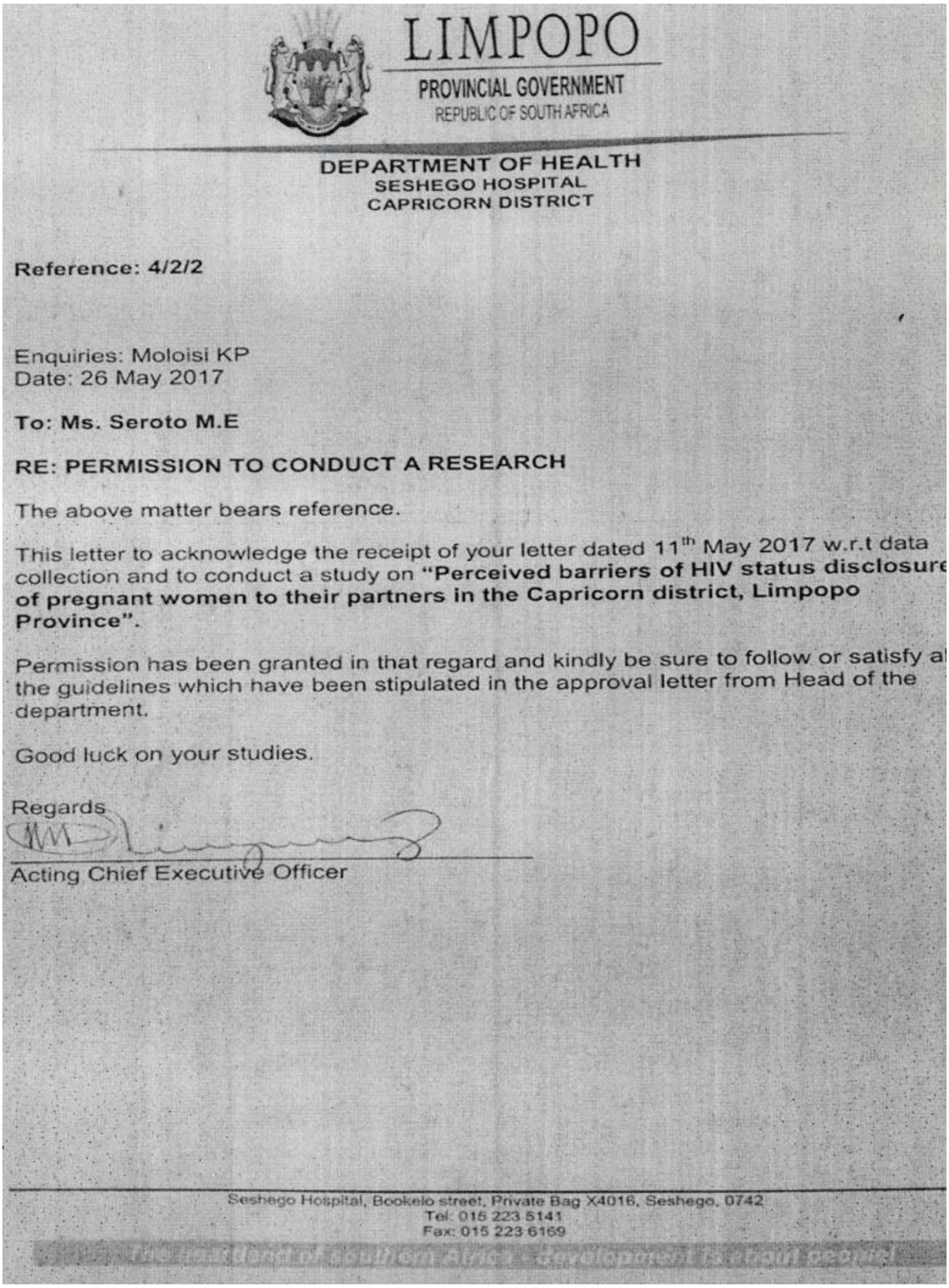
1. The above matter has reference.
2. This is to confirm that Seroto M.E has been granted permission to conduct research on "Perceived barriers of HIV status disclosure of pregnant women to their partners in the Capricorn District, Limpopo Province".
3. She will be conducting research as from 01 July 2016 to 31 May 2017.
4. Attached please find their application letter and approval from Provincial Office, University of South Africa Health Studies Higher Degree Committee College of Human Sciences Ethical Clearance Certificate and Research proposal.

Thanking you in advance

....
Chief Executive Officer

2016/06/02
Date

Department Of Health
Mankweng Hospital
Reciever Nikiwe
2016 -06- 0 1
Office No. 106
Tel: 015 236 1016
LIMPOPO PROVINCE



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
SESHEGO HOSPITAL
CAPRICORN DISTRICT

Reference: 4/2/2

Enquiries: Moloisi KP
Date: 26 May 2017

To: Ms. Seroto M.E

RE: PERMISSION TO CONDUCT A RESEARCH

The above matter bears reference.

This letter to acknowledge the receipt of your letter dated 11th May 2017 w.r.t data collection and to conduct a study on **"Perceived barriers of HIV status disclosur of pregnant women to their partners in the Capricorn district, Limpopo Province".**

Permission has been granted in that regard and kindly be sure to follow or satisfy a the guidelines which have been stipulated in the approval letter from Head of the department.

Good luck on your studies.

Regards

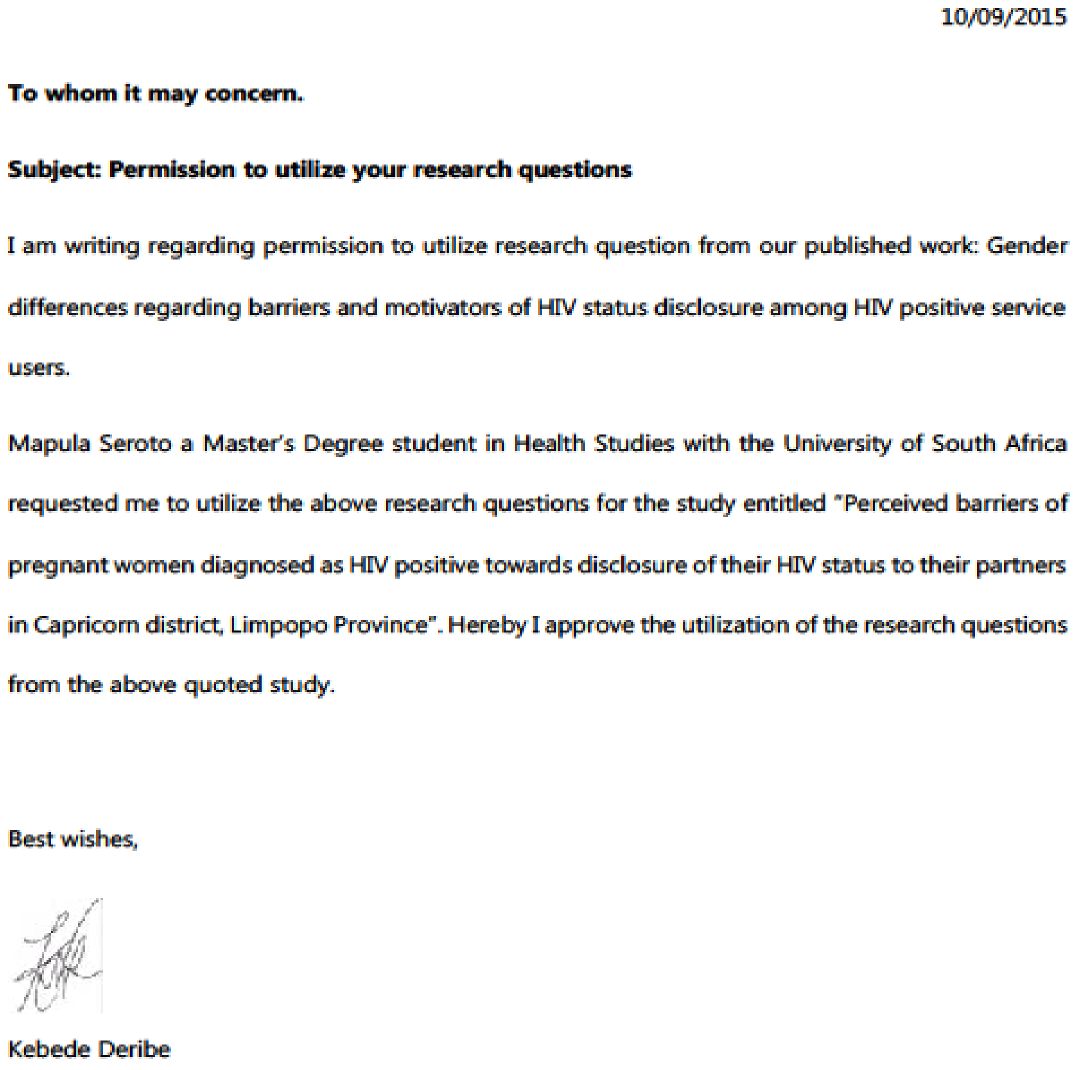
Acting Chief Executive Officer

Seshego Hospital, Bookelo street, Private Bag X4016, Seshego, 0742
Tel: 015 223 5141
Fax: 015 223 6169

The heartland of southern Africa - development is about people!

ANNEXURE E

APPROVAL FOR THE USE OF THE QUESTIONNAIRE



10/09/2015

To whom it may concern.

Subject: Permission to utilize your research questions

I am writing regarding permission to utilize research question from our published work: Gender differences regarding barriers and motivators of HIV status disclosure among HIV positive service users.

Mapula Seroto a Master's Degree student in Health Studies with the University of South Africa requested me to utilize the above research questions for the study entitled "Perceived barriers of pregnant women diagnosed as HIV positive towards disclosure of their HIV status to their partners in Capricorn district, Limpopo Province". Hereby I approve the utilization of the research questions from the above quoted study.

Best wishes,

Kebede Deribe

ANNEXURE F

DATA COLLECTION INSTRUMENT (PRE-TEST)

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

PLEASE ANSWER THE FOLLOWING QUESTIONS BY PLACING AN (X) ON THE RELEVANT BLOCK. ALTERNATIVELY FILL IN THE BLOCK. MARK ONE ITEM PER QUESTION

1. How old are you? (in years)

2. What is your religion?

Christian	Hindu	Moslem

Other (please specify)

____

3. What is your marital status?

Married	Single	Separated	Divorced	Widowed

4. How long where you married/cohabiting?

>2yrs	≤2yrs

5. How many children do you have? (Please indicate in the box)

6. How far pregnant are you?

≥ 3months	4 – 6 months	6 months+

7. Where did you grow up?

Rural	Urban

8. Do you drink alcohol?

Yes	No

9. If “Yes” what is your drinking pattern?

Occasionally	Every weekend	Every month	When stressed

Other (please specify)...

10. What is your employment status?

Employed	Self-employed	Unemployed

11 How can you relate your level of education?

Never been to school	Primary school	High school	Tertiary

12. How can you relate your partner’s level of education?

Never been to school	Primary school	High school	Tertiary

13. Who is the head of the household?

Father	Mother	Brother	Sister	Husband	Self

14. Is there someone in your family who is HIV positive?

Yes	No	I do not know

SECTION B: SEXUAL AND REPRODUCTIVE HEALTH INFORMATION.

Indicate to what extend you agree/disagree on the following regarding your disclosure.

15. How long ago were you diagnosed with HIV for the first time?

16. How long after the diagnosis of HIV did you disclose your status?

Same day	>7 days	>1 month	>5 months	Not yet

17. Did you receive disclosure education?

Yes	No

18. How best can you describe your feelings when you discover that you were pregnant (latest pregnancy)?

Disappointed	Frustrated	Shocked	Relieved

Other (please specify)...

19. When did you disclose your HIV status?

Immediately after HIV positive diagnosis	After one month after the HIV positive diagnosis	After six month after the HIV positive diagnosis	After a year after the HIV positive diagnosis	Did not disclose

20. If you have disclosed your status, please specify to whom did you disclose your status? (write in the box)

21. Have you ever disclosed your HIV positive status to your partner?

Yes	No

22. How was your partner's reaction to your status?

Angry	Silence	Ignore	Afraid	Acceptance	Supportive	Rejection	Secretive

23. What is your partners HIV status?

Positive	Negative	Unknown

24. How often do you use condom?

Never	Rarely	Sometimes	Always

25. Have you ever experience sexual assault?

Often	Sometimes	Never

26. How many times did you fall pregnant while you are HIV positive

One time	Two times	Three times

Other (please specify)……………………………………………….

27. How much was your last CD4 cell count?

Less than 300	Less than 500	More than 500

SECTION C: THE MOTIVATING AND ENABLING OR MODIFYING FACTORS:

Item NO	**Answer the following questions by ticking either YES or NO: “Y = YES, N = NO ”**	Y	N
28.	Can a mother infect her unborn child if not taking ARV treatment?		
29.	Have you had sexual activity with another person besides your partner during the past three months?		
30.	Are you ARV’s?		
31.	Do you think ARV’s can cure HIV?		
32.	Can someone who is on ARV’s transmit HIV?		
33.	Do you and your partner adhere to safer sex practices? i.e. by the use		

	of condoms?		
34.	Do you know that there is female condom?		
35.	Did your partner offer emotional support during disclosure of your status?		
36.	After delivery of your baby, do you still want another baby?		
37.	Do you think disclosure is important?		

38. Please indicate any other factors that motivated you to disclose your status that were not included in those mentioned above?

____

____

____

____

SECTION D: THE CHALLENGES/BARRIERS.

Indicate to what extend you agree/disagree with challenges of disclosure in HIV positive status.

Key: SA = Strongly Agree, A =Agree, U = Uncertain, D = Disagree,

SD = Strongly Disagree.

WHAT PREVENTS YOU FROM DISCLOSING YOUR STATUS?

		SA	A	U	D	SD
39.	I am afraid of accusations of infidelity.					
40.	I am afraid that my partner will abandon me.					
41.	My partner will beat me.					
42.	I am not working, so my partner will no longer finance me.					
43.	My partner will throw me out of the house.					

44.	My partner works far					
45.	My partner will think I am unfaithful.					
46.	My partner might assault me.					
47.	My partner may tell others.					
48.	I do not know that I should tell my partner.					

49. Please indicate any other challenges (barriers) that were not included in those mentioned above:

____
____
____
____

Thank you for your time and effort.

ANNEXURE G

QUESTIONNAIRE: FINAL DATA COLLECTION INSTRUMENT

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

Please answer the following questions by placing an (x) on the relevant block. Alternatively fill in the block. Mark one item per question.

1. How old are you? (in years)

2. What is your religion?

Christian	Hindu	Moslem

Other (please specify) ____

3. What is your marital status?

Married	Single	Separated	Divorced	Widowed	Cohabiting	polygamy

4. How long are you with the current partner?

5. How many children do you have? (Please indicate in the box)

Alive		Deceased	

6. How far pregnant are you?

≥ 3months	4 – 6 months	6 months+

7. Where did you grow up?

Rural	Urban

8. What is your employment status?

Employed	Self-employed	Full time	Part time	Unemployed

9. How can you relate your level of education?

No education	Non-formal education	Primary school	Secondary school	College	University

10. How can you relate your partner's level of education?

No education	Non-formal education	Primary school	Secondary school	College	University

11. Who is the head of the household?

Father	Mother	Brother	Sister	Husband	Self

SECTION B: SEXUAL AND REPRODUCTIVE HEALTH INFORMATION.

Please answer the following questions by placing an (x) on the relevant block. Alternatively fill in the block. Mark one item per question.

12. How long (in months) ago were you diagnosed with HIV?

13. Do you know anyone who is HIV positive?

Yes	No	I do not know

14. Did you disclose your status after diagnosis?

Yes		No	

15. If yes, indicate in the table below after how many days/months/years were you able to disclose your diagnosis?

Same day	
Less than a month	
Between 1 to 3 months	
Between 4 to 6 months	
Between 7 to 12 months	
Between 1 to 3 years	
Between 4 to 5 years	
More than 5 years	
Not yet	

16. If you have disclosed your status, please specify to whom did you disclose your status? (Write in the box)

17. Did you receive disclosure education?

Yes	No

18. Who performed the disclosure education?

19. Were you advised by the health care worker to disclose the status?

Yes	No

20. Did the person you know disclose her/his status?

Yes	No

21. Have you ever disclosed your HIV positive status to your partner?

Yes	No

22. Indicate in the table below your partner's reaction to your status by stating if you strongly agree, agree, uncertain, disagree or strongly disagree.

Key: SA = Strongly Agree, A =Agree, U = Uncertain, D = Disagree,

SD = Strongly Disagree.

Partner's reaction to your HIV status	**SA**	**A**	**U**	**D**	**SD**
Disappointed in me					
Judgmental towards me					
Caring and supportive towards me					
Accepted me					
Rejected me					
Ignored me					

23. Indicate with the table below your partner(s) HIV status by stating if you strongly agree, agree, uncertain, disagree or strongly disagree.

Key: SA = Strongly Agree, A =Agree, U = Uncertain, D = Disagree,

SD = Strongly Disagree.

Partners' HIV status	**SA**	**A**	**U**	**D**	**SD**
I know the HIV status of my partner					

My sexual partner(s) know my HIV status					
It is the right of my partner(s) to know my HIV status					
I have a right to know the HIV status of my partner(s)					
I do not think it is important that my partner(s) know my HIV status					
I do not think it is important that I know my partner(s)' HIV status					

24. How many sexual partners have you had in the last 3-6 months?

None	1	2	3	4	5	More than 5

25. How many sexual partners have your partner had in the last 3-6 months?

None	1	2	3	4	5	More than 5

26. How often do you use condom?

Never	Rarely	Sometimes	Most of the time	Always

27. How many times did you fall pregnant while you are HIV positive?

One time	Two times	Three times	More than three times

Other (please specify)………………………………………………….

28. How much was your last CD4 cell count?

Less than 300	300 ≤ but ≥ 500	More than 500

SECTION C: THE MOTIVATING AND ENABLING OR MODIFYING FACTORS:

29. Indicate the motivating and enabling or modifying factors of disclosure by stating if you strongly agree, agree, uncertain, disagree or strongly disagree.

Key: SA = Strongly Agree, A =Agree, U = Uncertain, D = Disagree,

SD = Strongly Disagree.

The motivating factors of disclosure	**SA**	**A**	**U**	**D**	**SD**
ARVs are available in your health facility					
ARV’s cure HIV					
Someone who is on ARV’s can transmit HIV					
You and your partner should adhere to safer sex practices i.e. by the use of condoms					
Female condom is available in your health facilities					
You can still have another baby after delivery					
Disclosure is important to you and your partner					

30. Please indicate any other factors that motivated you to disclose your status that were not included in those mentioned above?

____

____

31. What are the benefits of disclosure?

____

____

SECTION D: THE CHALLENGES/BARRIERS.

32. Indicate to what extend you agree/disagree with challenges (barriers) of disclosure in HIV positive status. Tick in the below if you strongly agree, agree, uncertain, disagree or strongly disagree.

Key: SA = Strongly Agree, A =Agree, U = Uncertain, D = Disagree,

SD = Strongly Disagree.

Challenges of disclosure HIV status disclosure	**SA**	**A**	**U**	**D**	**AD**
I am afraid of accusations of infidelity.					
I am afraid that my partner will abandon me.					
My partner will beat me.					
I am not working, so my partner will no longer finance me.					
My partner will throw me out of the house.					
My partner works far					
My partner may tell others.					
I do not know that I should tell my partner.					

33. Please indicate any other challenges (barriers) that were not included in those mentioned above:

____

34. What are the disadvantages of disclosure?

____

Thank you for your time and effort.

ANNEXURE H
INFORMATION LEAFLET AND CONSENT FORM

INFORMATION LEAFLET

Title of the study: Perceived barriers of pregnant women diagnosed as HIV positive towards disclosure of their HIV status to their partners in Capricorn District, Limpopo Province. I Mapula Seroto, student at UNISA am interested in investigating the perceived barriers of HIV positive pregnant women towards disclosure of their HIV status to their partners.

The purpose of the study was to find out more about how pregnant women diagnosed as HIV positive see disclosure of their HIV status to their partners in Capricorn District, Limpopo Province to increase disclosure of their HIV status to their partners and improve their health.

The researcher was interested in HIV positive pregnant women who are attending ARV clinics from 18 to 40 years. All women in this age range who attend ARV clinics during the data collection period will be invited to participate in the study. A self-administered questionnaire was completed by the respondents, which took 15 to 30 minutes. No risks were involved in the study, however if the respondent feel emotionally upset, she could talk to the researcher and be referred to a psychologist for free counselling at the ARV clinic for support.

The information the respondent provided remained confidential and her name would not be disclosed at any time. Participation in the study was voluntary and no incentives or remuneration were provided. The findings from the study would be published in national and/ or international journals to create awareness of this topic. The respondents were to contact the researcher if there are further questions: Mapula Seroto, Nursing Sciences student. Cell Nr: 0832973267.

INFORMED CONSENT FOR THE RESPONDENT

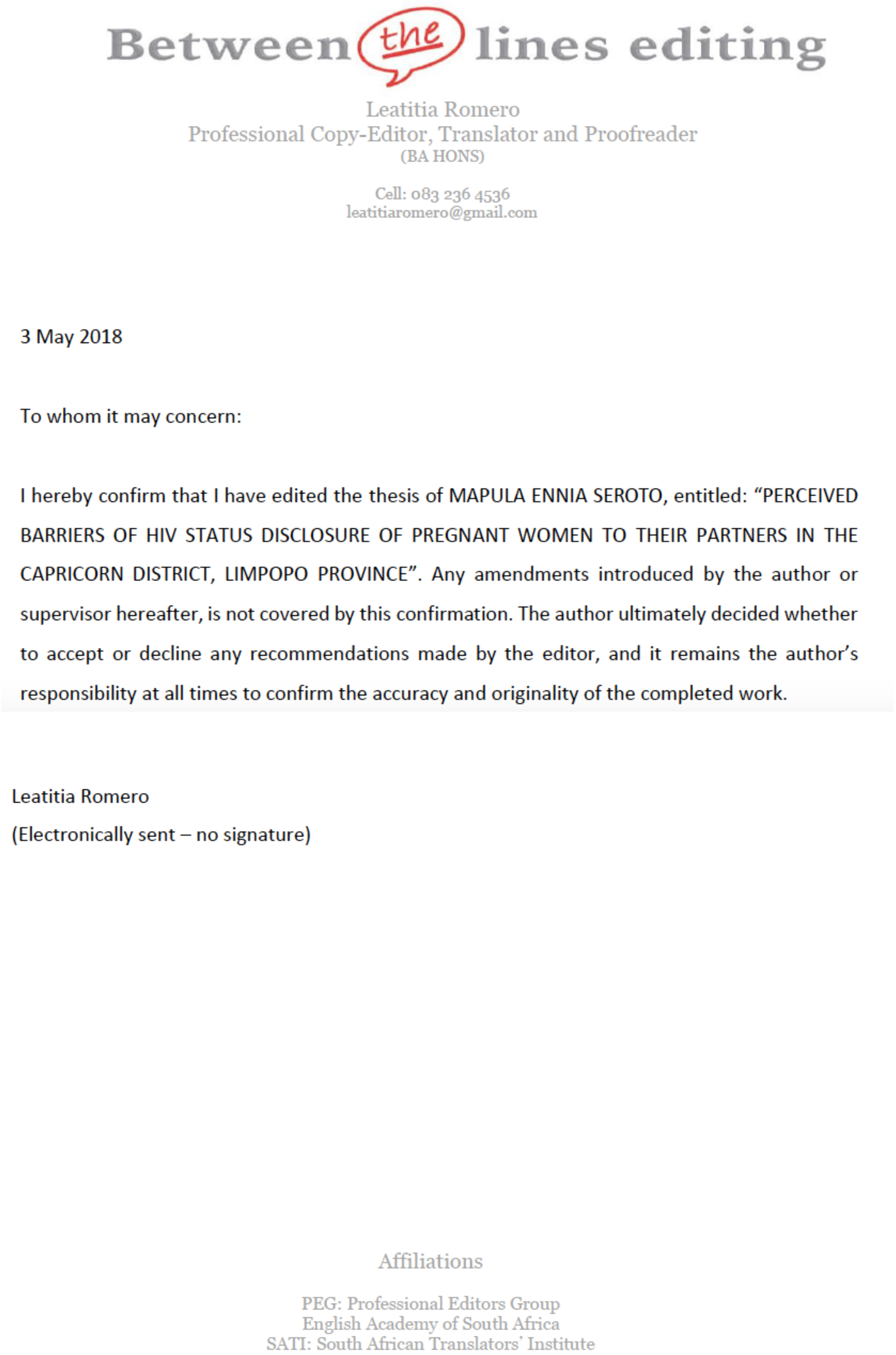
I hereby give consent to voluntary participate in this research study. I have read and understand the above information. I understand that participation is voluntary and that I can refuse or withdraw from this study if I so wish. In agreeing to complete a self-administered questionnaire, I provide informed consent.

Respondent (full names): ………………………Signature: ……………Date: …………

Researcher's signature: ……………………..Date: ………………

ANNEXURE I

CERTIFICATE FROM THE LANGUAGE EDITOR



Between the lines editing

Leatitia Romero
Professional Copy-Editor, Translator and Proofreader
(BA HONS)

Cell: 083 236 4536
leatitiaromero@gmail.com

3 May 2018

To whom it may concern:

I hereby confirm that I have edited the thesis of MAPULA ENNIA SEROTO, entitled: “PERCEIVED BARRIERS OF HIV STATUS DISCLOSURE OF PREGNANT WOMEN TO THEIR PARTNERS IN THE CAPRICORN DISTRICT, LIMPOPO PROVINCE”. Any amendments introduced by the author or supervisor hereafter, is not covered by this confirmation. The author ultimately decided whether to accept or decline any recommendations made by the editor, and it remains the author’s responsibility at all times to confirm the accuracy and originality of the completed work.

Leatitia Romero
(Electronically sent – no signature)

Affiliations

PEG: Professional Editors Group
English Academy of South Africa
SATI: South African Translators’ Institute

ANNEXURE J

TURNITIN REPORT INTERPRETATION

Turnitin Report – 30 May 2018

Assistance was asked from Matshidiso Pooe (Turnitin training at Unisa) with the interpretation of the 26% similarity index.

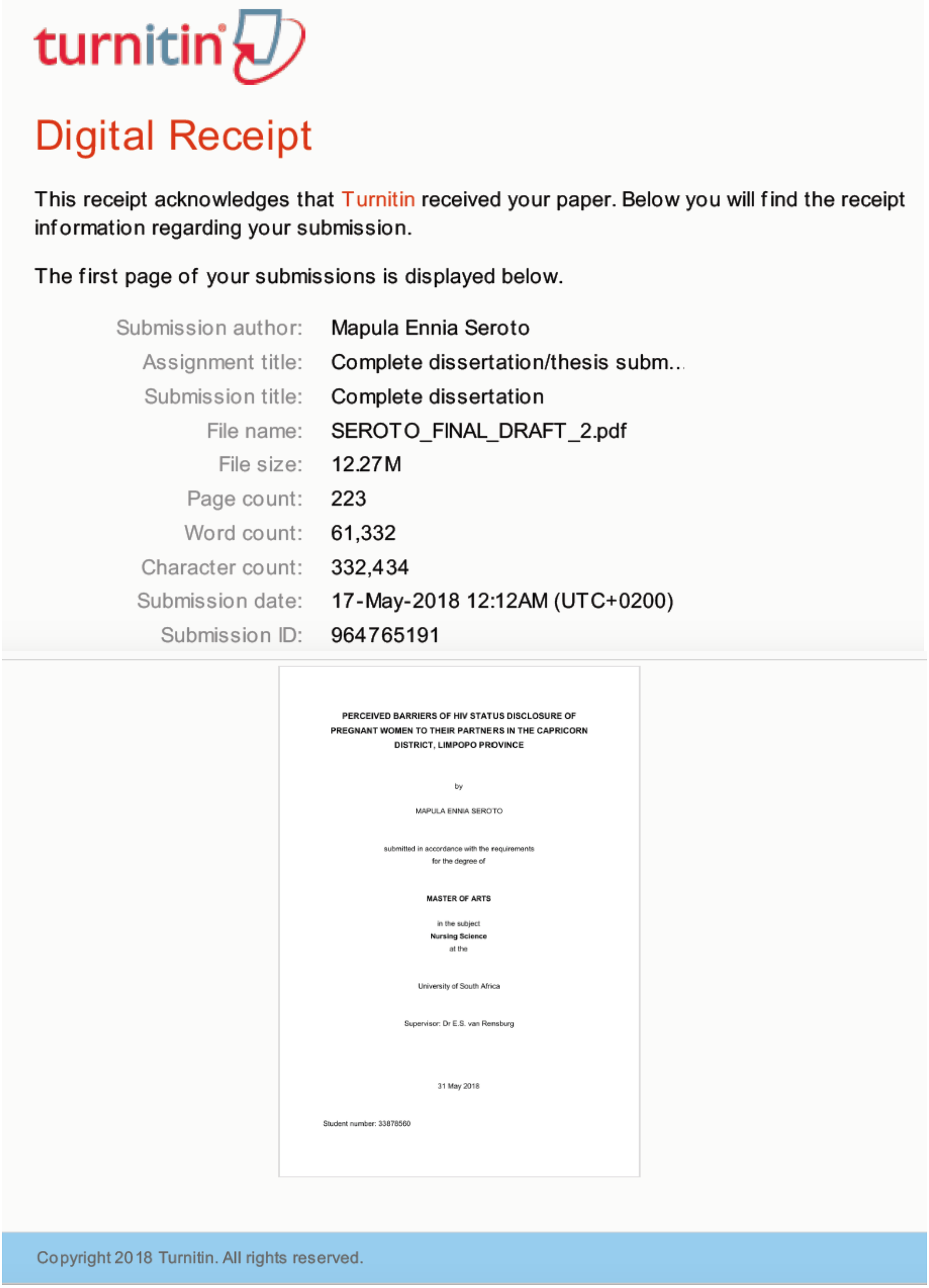
Interpretation as follows:

‘The overall 26% similarity index is the percentage of material overlap of the sources the student used, not plagiarism. All sources are duly acknowledged. There is not a problem with the highest source of 2%.

The bibliography was not excluded for submission.’

The full report is available on request.

TURNITIN REPORT



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PERCEIVED BARRIERS OF HIV STATUS DISCLOSURE OF PREGNANT WOMEN TO THEIR PARTNERS IN THE CAPRICORN DISTRICT, LIMPOPO PROVINCE

by

MAPULA ENNIA SEROTO

submitted in accordance with the requirements
for the degree of

MASTER OF ARTS

in the subject
Nursing Science
at the

University of South Africa

Supervisor: Dr E.S. van Rensburg

31 May 2018

Student number: 33878560

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