THE HIV DISCLOSURE AND SEXUAL PRACTICES OF PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT MBABANE NATIONAL REFERRAL VCT/ART CENTRE, SWAZILAND

by

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submitted in accordance with the requirements

for the degree of

MASTER OF PUBLIC HEALTH

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF DM VAN DER WAL

DECEMBER 2011

Dedication

I dedicate this work

to my parents, Dr and Mrs Okaalet, my wife Flavia Okoth, and children Favour and Petal, for always believing in me. Your love and support inspire me to be the best I ever dream to be in life.

Student number: 3586-761-2

DECLARATION

I declare that the study on **THE HIV DISCLOSURE AND SEXUAL PRACTICES OF PEOPLE LIVING WITH HIV/AIDS (PLWHA) ON ANTIRETROVIRAL THERAPY AT MBABANE NATIONAL REFERRAL VCT/ART CENTRE, SWAZILAND** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

SIGNATURE: **Date: 08 December 2011**

(Patrick Paul Okoth)

ACKNOWLEDGEMENTS

I am truly grateful to the Almighty God for granting me the grace and abilities to undertake and eventually complete this study. To you Lord, I give all my praise and worship.

My appreciations to the following people without whom this study would not have been possible:

- Dr DM Van der Wal; my supervisor at Unisa, am deeply indebted to you for all you have taught me, your patience, time, effort and support through the entire process, I will treasure this experience for the rest of my life.
- Dr. SP Human, for your kind support in finding help for me during the most critical moments of this study, I thank you.
- Dr. Samson Haumba and Dr. John Rwanika, for sacrificing your time to read my drafts and sharing your experiences in perfecting my writing.
- Mr. Makumucha Courage, the statistician and data analyst – for all the sleepless nights you spent in helping with data analysis, your time and efforts have invaluably brought this work to a successful end.
- Mr. Masilela Martin and Themba Mathobela for your dedication in data collection.
- The Swaziland Ministry of Health Scientific and Ethics Committee, SNAP, the Mbabane Government Hospital and Mankayane Hospital Management for granting me permission to conduct this study, thank you.
- My lovely wife, Flavia; Favour (son) and Petal (daughter), you endured several months without daddy or no fun days all for the sake of this work, be assured that I will love, cherish and be there at all times for you all.
- Mrs Elizabeth Kyamogi, thank you for your expertise and time in doing the language control and editing.

To you all, may you find hope for tomorrow, joy for your sorrows and strength to help you ascend to the next spheres of your lives!

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ABSTRACT

This quantitative study sought to identify and describe factors influencing HIV disclosure and sexual practices among 340 PLWHA on ART at Mbabane National Referral VCT/ART Centre, Swaziland. Data were collected using a structured questionnaire.

A high general HIV **disclosure** rate (94.1%; *f*=320; N=340) was observed of which 57.5% (*f*=184; n=320) was to sexual partners. X^2 procedures indicate an association with gender, residential region, religion, and period of being on ART.

The majority (70.2%; *f*=179; n=255) of the respondents **used condoms** all the time to avoid infecting their sexual partners (99.2%; *f*=243; n=245) and to avoid contracting STIs (99.2%; *f*=243; n=245). X^2 procedures indicate an association with gender, residential region, marital status, number of sexual partners, knowledge of the HIV status of sexual partners and period of being on ART.

The single leading reason for not using the condom was sexual partners' refusal to use condoms (85.7%; *f*=54; n=63).

KEY CONCEPTS

HIV status; HIV disclosure; sexual practices; risky sexual behaviour; safer sex; antiretroviral therapy; HIV treatment; people living with HIV/AIDS; ART in Swaziland; and positive prevention.

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List of abbreviations

ACAS	Asian Community AIDS Services
AGSCF	Africa Global Sister Cities Foundation
AIDS	Acquired Immune Deficiency Syndrome
AMICAALL	Alliance of Mayor's Initiative for Community Action on AIDS at the Local Level
ART	Antiretroviral Therapy
ARV's	Antiretroviral drugs.
BCC	Behavioural change communication
BCPWA	British Columbia Persons with AIDS Society.
BSS	Behavioral Surveillance Survey
CMTC	Crisis Management and Technical Committee
DNA	Deoxyribonucleic Acid
FHI	Family Health International
FLAS	Family life Association of Swaziland
GDP	Gross Domestic Product
GIPA	Greater involvement of People with HIV/AIDS
GPA	Global program on AIDS
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immuno-Deficiency Virus
HTC	HIV testing and Counselling

ICRW	International Centre for Research on Women
IEC	Information, Education & Communication
IFPRI	International Food Policy research Institute
IMPACT	Implementing AIDS Prevention & Care project
M & E	Monitoring and Evaluation
MOH	Ministry of Health
MOHSW	Ministry of Health & Social Welfare
NAM	National AIDS Manual
NAPWA	National Association of People With AIDS.
NERCHA	National Emergency Response Council on HIV/AIDS.
NGO's	Non-governmental Organizations
NINIDS	National institute of neurological disorders and stroke
PLWHA*	People Living With HIV/AIDS
RENEWAL	Regional Network on HIV/AIDS, Rural Livelihoods and food security
RNA	Ribonucleic Acid
SDHS	Swaziland Demographic and Health Survey
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
SNAP	Swaziland National AIDS Program
TASO	The AIDS Support Organisation.
UN	The United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergence Fund
USAID	United States Agency for International Development

VCT	Voluntary Counselling and Testing
WHO	The World Health Organisation

**The new abbreviation PLHIV was not used because all references still refer to PLWHA*

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

HIV prevention strategies have typically been directed at HIV negative persons and groups to keep their status negative, ignoring the central role of people living with HIV/AIDS (PLWHA) in this regard (NAPWA, 2004:1; Sarna et al, 2005:1; UNDP, 2006). The current research therefore seeks to answer questions on and enhance understanding about practices surrounding the disclosure of one's human immuno-deficiency virus (HIV) status, and sexual practices among people living with HIV/AIDS (PLWHA) and who receive antiretroviral therapy (ART).

This chapter describes the background to the research problem, states the research problem and discusses the significance of the study. The aims/objectives of the study are also indicated and the initially anticipated contribution that this study could make to the field of HIV disclosure and safer sex practices among the people living with HIV/AIDS (PLWHA) on ART in Mbabane Swaziland are reflected on.

1.2 BACKGROUND TO THE PROBLEM

This section gives background information surrounding the origin of the research topic and assists to give context and perspective to the problem of HIV disclosure and sexual practices among PLWHA on ART in Swaziland.

1.2.1 Geographical background of Swaziland

The kingdom of Swaziland is a landlocked Southern African country that extends over a land mass of 17,364 square kilometers. It is bordered by the Republic of South Africa on the north, west and south, and the Republic of Mozambique on the east (The Government of the Kingdom of Swaziland, 2006c:2; Embassy of the Kingdom of Swaziland, 2011) (refer to figure 1.1).

Swaziland has four different geographical regions determined by altitude and all the four regions have different life styles. The Lubombo Region; a mountain ridge, lies at an altitude of about 600 meters above sea level along the eastern border with Mozambique. The mountains are broken by gorges of three rivers; namely, the Ngwavuma, the Usutu and the Mbuluzi. This is mainly a cattle ranching area (Swaziland Discovery, 2011; Absolute Astronomy, 2009; Embassy of the Kingdom of Swaziland, 2011).

Along the western border of the country with The Republic of South Africa lies the Highveld at an altitude of about 1200 meters. Mbabane, the capital, is located on the Highveld in the Hhohho Region (Absolute Astronomy, 2009; Swaziland Discovery, 2011; Embassy of the Kingdom of Swaziland, 2011).

The Middleveld lies at an average of 700 meters above sea level and is the most densely populated region of Swaziland with a lower rainfall than the mountains. The principal commercial and industrial city, Manzini is situated in the Middleveld (Absolute Astronomy, 2009; Swaziland Discovery, 2011; Embassy of the Kingdom of Swaziland, 2011).

The Lowveld lies at around 250 meters above sea level and is less populated than other areas. It presents a typical African bush country of thorn trees and grasslands (Absolute Astronomy, 2009; Embassy of the Kingdom of Swaziland, 2011).

1.2.2 Climate of Swaziland

The seasons in Swaziland are the reverse of those in the Northern Hemisphere with December being mid-summer and June being mid-winter. Rain falls mostly during the summer months in form of thunderstorms and winter is the dry season. The Highveld in the west receives the highest annual rainfall between 1000 to 2000 millimeters of rain, depending on the year and generally has a temperate climate. The amount of rainfall reduces moving further to the east of the country with the lowest annual rainfall recorded in the Lowveld at about 500 to 900 mm per year, and this region has a subtropical climate (Absolute Astronomy, 2009; Embassy of the Kingdom of Swaziland, 2011; Swaziland Discovery, 2011).

The temperatures vary according to the altitude of the different regions. While the Highveld temperature is temperate, the Lowveld records temperatures of up to 40 degrees Celsius in summer. The average temperatures at Mbabane vary according to the seasons; 18 degrees Celsius in spring (September to October); 20 degrees Celsius in summer (November to March); 17 degrees Celsius in autumn (April to May); and 13 degrees Celsius in winter (June to August) (Embassy of the Kingdom of Swaziland, 2011; Absolute Astronomy, 2009; Limkokwing University-- Swaziland, 2011).

Figure 1.1

Map of Swaziland

(Source: http://www.infoplease.com/atlas/country/swaziland.html, 01/07/2008).

1.2.3 Historic background of Swaziland

The nation of Swaziland as well as its people is named after the 19th century king, King Mswati II. He was the king of Swaziland between 1840 and 1868. The anthropologist Hilda Kuper called him “the greatest of the Swazi fighting kings”, and under his reign, Swaziland reached its greatest territorial extent (Swaziland Discovery, 2011; US State Department, 2011; Absolute Astronomy, 2009).

The Swazis are a Bantu language speaking people mainly found in Swaziland but some SiSwati speakers can also be found in South Africa and Mozambique. SiSwati is one of the Nguni languages besides Zulu, Xhosa, amaHlubi, Phuthi and Ndebele. Other closely related Bantu languages are Sotho, Tswana and Lozi. The Swazi people descend from the southern Bantu who migrated from Central Africa in the 15th and 16th centuries together with the Xhosas and the Zulus, who belong to the Nguni subgroup. The Swazi ancestors, the Nkosi Dlamini, broke away from the mainstream of Nguni migrants led by Chief Ngwane, and settled in the region of the Pongolo River absorbing the Nguni and Sotho clans in the area (Matsamo Cultural Park, 2011; Absolute Astronomy, 2009; US State Department, 2011).

By 1750 they had settled in the Hluti Region in the south of the Kingdom, under King Ngwane III of the Nkosi Dlamini clan. In 1881 the British Government signed a convention recognising Swazi independence. However, controversial land and mineral rights concessions were made under the authority of the Foreign Jurisdiction Act of 1890 in terms of which the administration of Swaziland was also placed under that of the then South African Republic (Absolute Astronomy, 2009; Matsamo Cultural Park, 2011; State University, 2011).

1.2.4 Demographic and Health Profile of Swaziland

The majority of Swaziland’s population is ethnically Swazi, mixed with a small number of Zulu and white Africans of British origin; Africans comprise 97% and Europeans 3% of the population (Absolute Astronomy, 2009; US State Department, 2011). Swaziland is host to a population of 1,168,000 people (in 2008), 78% of which live in rural Swaziland. There are more women (53%) than men (47%), and the country’s population is generally a young one with children under the age of 15 years accounting for 46%, and persons aged 65 years and above, accounting for nearly 3% of the total population. Regarding employment, women are less likely to be employed (40%) than men (50%). The majority of women (56%) work in the sales and services industry compared to 29% of men who work in the same sector, while a majority of men (32%) are skilled manual labourers compared to 14% of women. However, the proportion of the population living on less than 1.25 US dollars a day was estimated at 62.4% in 2005.(UN, 2011; The Government of the Kingdom of Swaziland, 2006c:2; SDHS, 2006-2007: 10;41;44;45; UN, 2010:22).

The population annual growth rate was estimated at 1.213% in 2010 (US State Department, 2011). The Total Fertility Rate (TFR) has been declining over the years. The TFR was 3.5 live births per 1000 women in 2009 and it was reported to be 4.5 in 1997 compared to 5.4 in 1991 and 6.4 in 1986 (UNICEF, 2010; The Government of the Kingdom of Swaziland, 2006c:2). In 2010, life expectancy was estimated to be 47.97 years; however, due to the demographic impact of the AIDS epidemic, the life expectancy is projected to decline from 59 years in 2001 to 38years in 2015 (US State Department, 2011; UN, 2007:2).

The maternal mortality ratio is estimated at 229 per 100,000 live births; this high ratio is aggravated by the high HIV infection rate among pregnant women among other factors (UN, 2007:2). The Crude Death Rate was on the decline from 18.5 deaths per 1,000 in 1976 to 7.6 deaths per 1000 in 1997; however, the rate has increased to 15 deaths per

1,000 in 2009 due to the impact of HIV/AIDS. Infant mortality was estimated at 85 deaths per 1000 live births in 2007 and 52 deaths per 1000 in 2009, while under-five mortality stands at 73 deaths per 1000 in 2009 compared to120 per 1000 live births in 2007 (UNICEF, 2010; SDHS, 2006-2007:108).

1.2.5 Education profile of Swaziland

According to the education statistics report of 2004 cited by the Government of the Kingdom of Swaziland (2006b:2), the country has a total of 546 primary schools and 218,352 students. Boys are slightly more (51.7%) than girls at the primary school level. Girls (50.5%) in secondary and high schools are slightly more than boys (50.3%). According to the SDHS (2006-2007:31), 91.3% of Swazi women aged 15 to 49 years are literate while 89.6% of Swazi men are literate. The literacy trends are similar among Swazi men and women.

The general literacy level is 81.6% and the literacy levels are estimated to be much higher among the youth aged 12 to 14 years, 96.7% for females and 87.6% for males compared to 51% of females and 61% of males aged 50 years and above (US State Department, 2011; SDHS, 2006-2007:33). Primary school enrolment stand at 65% for primary level and 44% for secondary levels, with 82% of pupils residing in rural areas. Swaziland gender disparities in enrolment are very small. The teacher-pupil ratio is 1:34 at primary school and 1:18 at secondary and high school. Urban schools have a higher pupil-to-teacher ratio than rural schools (US State Department, 2011; The Government of the Kingdom of Swaziland, 2006c:2).

The literacy level plays a significant role in the perception and the ability for PLWHA to cope with being HIV positive, which in turn influences HIV disclosure and sexual practices (Garko, 2007:125) (refer to chapter 2 of this dissertation: section 2.2.10 and 2.3.5)

1.2.6 Economic profile of Swaziland

Swaziland is classified by the World Bank as a lower middle income country and the Gross Domestic Product (GDP) stood at 2.9 billion US dollars in 2009 and an inflation rate of 7.5% in the same year. The Gross National Income (GNP) per capita was estimated in U.S dollars to be 2,350 in 2009. Despite having a fairly good resource base compared to other developing countries, nearly 69% of the population is classified as poor, this may possibly be due to poor distribution of available resources and the increasing unemployment rates estimated at 40% in 2009. It is estimated that 56.4% of the wealth is held by 20% of the population compared to only 4.3% being held by the poorest 20% of the population. The effects of the HIV/AIDS and difficulties in attracting meaningful direct foreign investment have profoundly impaired past economic gains (UN, 2011; AGSCF, 2009; The Government of the Kingdom of Swaziland, 2006c:2).

Primarily, Swaziland's economy is agrarian, although, it has in recent years become fairly diversified, with agriculture, forestry and mining accounting for about 13% of GDP, manufacturing (textiles and sugar-related processing), which has grown over the years accounting for about 37% of GDP and government services leading and representing 50% of GDP. The economy is very closely linked to the economy of the Republic of South Africa. The country has recently experienced a slowdown in economic growth to an average rate of 3.4% in the period 1990 – 1992 compared to the high economic growth levels, averaging 9% in the 1980's (U.S State Department, 2011; UNICEF, 2010; Absolute Astronomy, 2009; The Government of the Kingdom of Swaziland, 2006c:2).

The environmental and socio-economic context in which people live influences individual actions to improve lifestyle or health status; for example, the increased risk for women to acquire HIV infection is argued to be due to their economic vulnerability and dependence on men, thus limiting their ability to negotiate safer sex practices with their sexual partners (refer to chapter 2 of this dissertation: section 2.2.11 and 2.3.6)

1.2.7 The HIV/AIDS epidemic in Swaziland

Swaziland is one of the countries in the world most severely hit by the HIV/AIDS epidemic. Approximately 220,000 people live with HIV/AIDS, including 15,000 children under the age of 15 years and the adult HIV prevalence in the population aged 15-49 years fell from 42.6% in 2004 to 26% in 2007 (MOHSW, 2004:4; Central statistical office, 2007: 37-38; USAID, 2010:1; UNAIDS, 2007a:16). According to the 11th National Sero-surveillance Report, the prevalence of HIV infection among pregnant women now stands at 42% and the majority of new infections (62%) occurs among females, a trend suggesting that new infections are not decreasing as much as it may be expected, hence the epidemic levels not decreasing (MOH, 2008: 9 & 27; USAID, 2010:1). For every two HIV positive adult men, there are three HIV positive adult women. Among the women, the age group 25 to 29 years has the highest HIV prevalence (48.9%) while among the men, the age group 35 to39 years has the highest HIV prevalence (44.9%). Men are more likely to be positive than women considering people older than 35 years and women are more likely to be HIV positive than men for those less than 35 years. It is estimated that AIDS account for 7,000 deaths in 2009 and 69,000 children, from the age of 0 to 17 years were orphaned due to AIDS (SDHS, 2006-2007: 222; USAID, 2010:1; UNAIDS, 2010).

Since the emergence of the epidemic in 1986 when the first case of HIV was identified in Swaziland, HIV has rapidly and extensively spread throughout the population to become a generalised epidemic with grave socio-economic effects at the individual, community and national levels (The Government of the Kingdom of Swaziland, 2006c:11-12).

In 1987, the Ministry of Health and Social Welfare (MOHSW) in collaboration with the World Health Organization (WHO) Global Program on AIDS (GPA) established the Swaziland National AIDS Program (SNAP) as the first step to a national response to HIV/AIDS. SNAP was charged with the responsibility of developing and coordinating a national response to the AIDS epidemic (The Government of the Kingdom of Swaziland, 2008:13).

In 1999, owing to the alarming HIV/AIDS statistics, the King of Swaziland, His Majesty King Mswati III declared HIV a national disaster. While opening parliament in February 2003, the king cautioned that “there is the very real possibility that the Swazi nation will cease to exist unless we change our attitudes and behaviour” (NERCHA, 2005b:11).

Soon after the establishment of SNAP in 1987, it was quickly evident that there was an urgent need to create yet another supporting institution to enhance a more rapid response to the epidemic. In 1991, the HIV/AIDS Crisis and Management Committee was created under the office of the Deputy Prime Minister of Swaziland. In 2003, this committee was replaced by the National Emergency Response Council on HIV/AIDS (NERCHA). This council is charged with the task of coordinating and facilitating the national multisectoral response to HIV/AIDS, while the Ministry of Health and Social Welfare (MOHSW) was charged with the responsibility to implement activities. Thus far, efforts taken by the MOHSW and its partners to avert HIV spread and its impact in the country generally fall under the following six thematic categories namely; prevention, care and support, impact mitigation, communications, monitoring and evaluation, and management/coordination (NERCHA, 2005b:11-12).

Although most cities bear evidence of HIV/AIDS prevention messages on billboards, public transport vehicles, banners, buttons, posters, pamphlets, T-shirts and so on, all the national efforts to address the HIV/AIDS challenge so far have only yielded heightened awareness of the problem across the country with minimal reduction in the rate of new HIV infections (The Government of the Kingdom of Swaziland, 2006c:56).

1.2.8 Disclosure of HIV status

According to WHO (2005:xi), disclosure of HIV status means revealing or uncovering information about one's HIV status by him or herself to other persons of his or her choice. Under certain conditions, disclosure is considered an essential measure in combating the spread of the HIV.

Disclosure of HIV positive status is a complex, difficult and often very personal matter because it involves communication about a potentially life threatening, stigmatized and transmissible illness. As a result, the choices people make about disclosure of HIV status are not only personal, but varied across different age groups, in different situations and contexts, and even with different partners, and may change with time, depending on one's experiences (Remien & Bradley, 2007:64E).

A mathematical modelling analysis conducted by Pinkerton and Galletly (2007: 702-704), showed that HIV status disclosure reduced the risk of HIV transmission from 17.9% to 40.6% relative to non-disclosure of HIV status. It is thought that HIV transmission could be reduced if people with HIV/AIDS act on knowledge of their serostatus by adopting and sustaining HIV risk reduction behaviors that may include disclosing their status to sex partners (Niccolai, King, D'entremont & Pritchett, 2006:102).

According to Remien and Bradley (2007:64E), disclosure is a "two-way street"; in other words, it is up to both people who are having sex with each other to address the issue (of disclosure). For this reason, clinicians, counsellors and programs need to be sensitive to the complexity of disclosure, and understand that disclosure is not for all people in all contexts. However, disclosing one's HIV status can facilitate support for HIV positive persons and may lead to better communication, including discussion of risk reduction practices among sexual partners.

Traditionally, HIV prevention programs have focused mainly on high risk groups such as sex workers, men who have sex with men and truck drivers owing to their drug use or sexual behaviour, and placing little emphasis on HIV-positive persons and their regular partners (Sarna et al, 2005:5). Yet people living with HIV/AIDS have a critical and central role in preventing further spread of the virus because for every new HIV infection, an HIV positive person is involved. So changing the behaviour of one HIV infected person may help prevent many of that person’s sexual partners from being infected (Kalichman, 2005:536).

Moreover, HIV positive people do deserve interventions to help them stay safe and also play an active role in stopping the spread of the infection. In fact, one of the principles of the greater involvement of people living with HIV and AIDS (GIPA), calls to all HIV positive people to be responsible for their own sexual health and inform all their partners of their HIV status (UNDP, 2006; UNAIDS, 2007b:1-2). The involvement of HIV positive persons is important from this perspective because non-disclosure of HIV status to sexual partners could result in continued unprotected sexual activity with risk of transmission of resistant viral strains and re-infection with new strains, thereby continuing to fuel the HIV epidemic in the community, a serious public health problem (Nachega, Lehman, Hlatshwayo, Mothopeng, Chaisson, & Karstaedt, 2005:204).Thus sexual partners/couples may be compelled towards safer sex behaviours to avoid some of these undesired consequences of both non-disclosure and unsafe sexual practices.

The prevention and control of HIV to a great extent depends on the success of strategies that are implemented to prevent occurrence of new infections and to treat individuals currently infected. Voluntary testing and counselling for HIV can serve both goals, by enabling healthy uninfected individuals maintain their HIV status and those infected to plan for their future and to prevent transmission of HIV to others (Taraphdar, Dasgupta & Saha, 2007:280 cites Allen et al, 1992). In fact, voluntary counselling and testing (VCT) for HIV is widely promoted today as the first important step in behaviour modification, although, the benefits of behaviour modification and indeed that of VCT cannot be realised without HIV status disclosure (Norman, Chopra & Kadiyala, 2005:1).

Disclosure may offer a number of important benefits to the infected individual and to the general public; namely, disclosure of HIV status to one's sexual partners is associated with less anxiety and increased social support. In addition, it may lead to improved access to HIV prevention, treatment, opportunities for risk reduction and planning for the future. Moreover, risk behaviours change most dramatically among couples aware of each others HIV sero-status, thus enabling them to make informed reproductive health choices that may resultantly lower the occurrence of unintended pregnancies among HIV positive women (Parsons et al, 2005:S87-88)

On the other hand, disclosure of HIV status comes with the fear of being stigmatised and discriminated against. Nachega et al (2005:200), suggest that a significant proportion of HIV infected persons may be reluctant to disclose their HIV status because of fear of their partners' reactions and owing to the fact that persons with HIV are still being stigmatized. As a result, those who know their HIV status keep it a secret even to their sexual partners, consequently, creating a large number of new infections and a pool of people with advanced disease and high number of HIV particles in the blood (viral loads), capable of passing the infection to others. (The Government of the Kingdom of Swaziland, 2008:3; USAID, 2005; The Government of the Kingdom of Swaziland, 2006c:7).

In Swaziland, few people living with HIV/AIDS, especially prominent people like religious and traditional leaders, political and media/sports personalities have come out publicly and revealed their status. The stigma associated with HIV/AIDS still greatly hinders the flow of information to communities, hampers prevention efforts, and reduces utilization of services (USAID, 2005). It is also believed that most of those who know their HIV status keep it a secret even to their sexual partners and as a result, many HIV infected persons continue to have sex with their regular and/or casual sexual partners without protection, hence passing on the infection both knowingly and unknowingly (The Government of Kingdom of Swaziland, 2006c:7).

1.2.9 Disclosure in the era of antiretroviral therapy

Disclosure may have lifelong implications since more people are living longer, and often asymptomatically, with HIV, especially in the era of antiretroviral therapy. Lurie, Pronyk, De Moor, Heyer, DeBruyn, Struthers, McIntyre, Gray, Marinda, Klipstein-Grobusch and Martinson (2008:484-485), argue that the increasing access to antiretroviral therapy (especially in the resource limited setting) has magnified the importance of addressing risk-taking behaviour among HIV infected adults. Although less infectious, people living with HIV on ART live considerably longer thereby increasing the duration of potential exposure to HIV for their sero-negative sexual partners.

Disclosure of HIV status is pivotal in the management of HIV especially with regard to adherence to complex treatment regimens. For someone about to start antiretroviral treatment, disclosure may remove the need for secrecy in taking the medication and provide additional sources of support and encouragement for adherence (WHO, 2005:19).

According to Sarna et al (2005:2-5), HIV positive persons on antiretroviral therapy exhibit increased levels of disclosure of HIV status and lower sexual risk behaviours compared to those who are not on antiretroviral therapy. The study conducted by Florendo et al (2006), in Guyana revealed that persons on antiretroviral therapy exhibited high HIV serostatus disclosure rates, and were more likely to disclose their HIV serostatus to a family member than their sexual partners.

Similarly, Fougelberg et al (2006:13-14), observed lower disclosure rates to sexual partners; 18% for men and 9% for women before initiation of antiretroviral therapy compared to 64% for men and 51% for women after starting antiretroviral therapy. In other words, according to these studies, increased disclosure rates are associated with the use of antiretroviral therapy.

1.2.10 Disclosure and sexual practices among PLWHA

Currently the available data on the relationship between disclosure of HIV sero-status and sexual risk practices shows a mixed picture. Some studies indicate an association between reduced sexual risk practices with increased disclosure of HIV status while others show that disclosure of HIV status does not necessarily change taking sexual risk practices (Kalichman, 2007:40).

Studies conducted among people living with HIV/AIDS in Uganda, South Africa, Botswana and other southern African countries reveal that HIV positive people consistently face difficulties in not only disclosing their status, but also practicing safer sex, impacting profoundly on the effectiveness of HIV/AIDS prevention, treatment and care programs, and certainly delaying prevention and other efforts aimed at decreasing the incidence of HIV/AIDS (Kalichman, 2007:40; ICRW, 2006:4-5).

The study conducted by Simbayi et al (2006:31), in Cape Town (South Africa), revealed a close association between non disclosure of HIV status to sex partners and engaging in risky sexual practices. It was further noted in this study that people who had not disclosed their HIV status to their sexual partners, reported to have more sex partners and practiced more unprotected vaginal and anal intercourse than people who had disclosed. Similarly, the study by Parsons et al (2005:S88-89), showed that sexual risk practices were most reported by those who inconsistently or those who did not disclose their HIV status at all compared to those who consistently disclosed their status to sexual partners.

Moreover, lack of knowledge of a partner's sero-status and low levels of disclosure of one's own HIV status, coupled with inconsistent condom use, set the stage for HIV transmission to sero-discordant sexual partners, especially within regular relationships (Sarna et al, 2005:5). However, according to Nachega et al (2005:200), the low disclosure rate of HIV status to sexual partners sharply contrasts with high disclosure rates to family, friends or community members. In other words, HIV positive persons are more likely to disclose their HIV status to their family, friends or community than to their sexual partners, especially casual sexual partners.

On the other hand, Lurie et al (2005:489-490) observed a strong association between disclosure of HIV status and protective patterns of condom use, especially among women. In this study, a bivariate analysis revealed that 76.55% of women and 76.5% of men who disclosed their HIV serostatus also consistently used condoms with regular partners compared to 51.1% of women and 58% of men who did not disclose their HIV serostatus. And 63.2% of women who had casual sexual partners reported consistent condom use compared to 55.2% of men.

In Swaziland, the limited behaviour change observed in the general population, continues to mar the prevention efforts of the behaviour change campaigns undertaken by the government to prevent HIV spread. Even with the increase in numbers of male condoms distributed in the country annually over the years, it is still not high enough to produce a significant impact on the reduction of new infections (The Government of the Kingdom of Swaziland, 2006c:8-9).

Worse still, misconceptions and claims by some segments of the population that condom use encourages promiscuity in the society undermine condom use. As a result, levels of sexual behaviour change that are necessary for turning the tide of the epidemic have not been achieved. This can be observed by the extent of increase of new infections among pregnant women attending antenatal care clinics, now estimated to be 42%. Consequently, the epidemic has continued to grow to a point that it has become generalised, mature and very deeply entrenched (The Government of the Kingdom of Swaziland, 2006c:19; MOH, 2008:9; The Government of the Kingdom of Swaziland, 2008:3).

1.2.11 Antiretroviral therapy program in Swaziland.

In 2003, Swaziland launched the National Antiretroviral (ARV) program and as at the beginning of December 2007, approximately 21,670 people out of the estimated 58,250 people in need of antiretroviral therapy had been started on these life prolonging drugs (Estimation and projections for Swaziland draft workshop report, 2007:3). Nationally, antiretroviral therapy and other related HIV/AIDS services have been offered through 51 health facilities both public and private including Mbabane National Referral VCT/ART Centre by the end of the first quarter of 2008 (MOH, 2008:1).

Mbabane National Referral VCT/ART Centre (the study site) established in 2002, was the first and is the biggest public ART clinic in the country with regard to number of HIV infected persons registered and cared for (Global Fund, 2007:2; Government of Swaziland, 2008:41). The Mbabane National Government Referral VCT/ART Center as at end of December 2008, had cumulatively 5,727 registered HIV positive persons on antiretroviral, 60% are women and 34% men aged 15 years and above, and 6% children under 15 years of age (MOH-M&E department, 2009) (refer to chapter 2 of this dissertation; section 2.4.10).

1.2.12 Antiretroviral therapy and sexual practices

In the past few years, advances in treatment and care of HIV positive persons have helped many to enjoy increased health and longer life, and consequently allowing for a renewed interest in sexual activity. The more sexually active one gets, the higher the possibility of more new infections, especially if safer sex is not practiced. In the era of antiretroviral therapy, the central role of PLWHA in the development and implementation of effective HIV prevention strategies cannot be ignored (NAPWA, 2004:1; Sarna et al, 2005:1; UNDP, 2006).

With the rollout of antiretroviral therapy in South Africa (and other resource limited settings like Swaziland) and its potential to prolong lives of HIV infected individuals, understanding the sexual behaviour of HIV positive people (and those on antiretroviral therapy) is essential to curb secondary HIV transmission. In fact, the increased access to antiretroviral therapy has magnified the importance of addressing risk-taking behaviour among HIV infected adults. Although less infectious, people on treatment live considerably longer thereby increasing the duration of potential exposure (Lurie et al, 2008:484-485).

The use of antiretroviral therapy has been shown to be highly effective in reducing plasma levels of HIV, hence has great potential for preventing HIV transmission to sexual partners for those using them. Successful use of antiretroviral therapy through its impact on both systemic and genital HIV-1 levels probably leads to a substantial reduction in HIV-1 transmissibility; nonetheless, the risk of transmission does persist even during apparently effective therapy with antiretroviral drugs. Coupled with other preventive measures, the use of antiretroviral therapy could greatly diminish the risk of HIV transmission and contribute to controlling the spread of HIV (Castilla et al, 2005:96 & 101: Nagot et al, 2007:5).

However, recent research data have raised great concern with regard to the observed reduction in protective and preventive behaviours among HIV positive persons once they physically improve in response to antiretroviral therapy, especially those with low viral loads (Andia et al, 2009:344). In fact, some people on antiretroviral therapy may feel protected from transmitting HIV sexually and hence, may promote un-protected sexual practices that would increase the risk of transmitting HIV to their sero-discordant partners and re-infecting themselves with new, drug resistant strains of the virus (Sarna et al, 2005:1).

According to Diabaté, Alary and Koffi (2008:155), there was a causal relationship between the use of antiretroviral therapy and an increase in risk taking sexual behaviour among HIV-1 infected patients in Côte d'Ivoire. The increase in risk taking sexual behaviour among people on antiretroviral therapy is consistent with their clinical improvement and other positive outcomes found to be associated with the therapy.

Chin-Hong et al (2005:468), found that there was a high prevalence of high risk sexual behaviour among HIV infected men and women harbouring genotypically proven antiretroviral-resistant viruses in blood and those on antiretroviral therapy. An estimated 1 in 4 men or women in this study had engaged in unprotected intercourse in the past 4 months prior to the study and 15% of them had intercourse with sexual partners of either known HIV status or unknown status. And 90% of those with drug resistant HIV strains who reported having had high risk sex with a partner who was HIV negative or had unknown status, had viral load greater than 1,500, which suggests that transmission would have been possible in most of those individuals. This suggests that people on antiretroviral therapy do not only exhibit high risky sexual behaviour but may also have a high potential of transmitting viral resistant HIV strains.

Lurie et al (2005:491), similarly observed a strong association between having high CD4 counts (lowered viral load) and having many sexual partners, which underscores the importance of sexual behaviour and its potential influence to HIV transmission in Southern Africa among populations where antiretroviral therapy is being introduced.

In Swaziland, consistent condom use among other potential HIV transmission risk lowering behaviours, has been compromised by the advent of antiretroviral therapy which is confused or perceived (by the population) as a substitute for condom use (The Government of the Kingdom of Swaziland, 2006c:27).

On the other hand, the study conducted by Sarna et al (2005:2-5) in Mombasa, Kenya, observed lower risk behaviour (i.e., multiple sex partners, causal sex partners, inconsistent condom use) among people living with HIV/AIDS receiving antiretroviral therapy. One percent (1%) of those on antiretroviral therapy reported having two or more sexual partners compared to 13% not on therapy. Also, 3% of those receiving antiretroviral therapy reported sex with casual sexual partners compared to 23% not on therapy, and consistent condom use was reported by 53% of those on antiretroviral therapy compared to 22% not on therapy, in this study.

According to Diamond et al (2005:218), the use of antiretroviral therapy is associated with less risky sexual behaviour among people living with HIV/AIDS using antiretroviral therapy. Similarly, in the study conducted by Spire, De zoysa and Himmich (2008:3), a multivariate analysis revealed that the odds ratio of systematic condom use was twice as high among sexually active persons on antiretroviral therapy as among those not on the therapy. This means that those on antiretroviral therapy were more likely to engage in lower risk sexual behaviour than those people not on therapy.

Bunnell et al (2006:90) observed that provision of antiretroviral therapy, prevention counselling and partner voluntary counselling and testing was associated with a 70% reduction in risky sexual behaviour and 98% reduction in HIV transmission to uninfected sexual partners after six months of antiretroviral therapy, among HIV infected adults in rural Uganda. And Fougelberg et al (2006: 13), observed a significant increase in condom use with regular and casual sexual partners for both sexes (male and female) after initiation of antiretroviral therapy as compared to rates before diagnosis of HIV. This indicates that use of antiretroviral therapy was associated with lowered risky sexual behaviour; a view shared by Deribe et al (2008:87) where they attributed the observed high disclosure rates to adherence to antiretroviral therapy use and peer counselling.

1.3 STATEMENT OF THE RESEARCH PROBLEM

Research problem refers to an area of concern in which there is a gap or a situation in need of solution, improvement or alteration, or in which there is a discrepancy between the ways things are and the way they are supposed to be. These discrepancies or problematic situations then stimulate interest and prompt investigation (Brink, 2006:59 cites Burns and Grove, 2003). A research problem could also be defined as an enigmatic or perplexing or troubling situation that can be investigated through disciplined inquiry. Often, the problem contains the need for a research project and is usually represented by a management question/dilemma (which is a problem or opportunity that requires a decision). The problem statement, therefore, articulates the concern to be addressed and indicates the need for a study (Polit and Beck, 2008:81;762;765; Cooper and Schindler, 2006:611).

The use of Highly Active Antiretroviral Therapy (HAART) among HIV positive persons has been associated with dramatic decrease in morbidity and mortality related to HIV disease. Their use has been further shown to significantly lower the number of HIV particles in the blood (viral load) hence reduce the risk of HIV transmission (Sarna et al, 2005:1; Castilla et al, 2005:101).

However, the observed reduction in protective and preventive sexual behaviours including disclosure of HIV status among people living with HIV/AIDS on antiretroviral therapy, especially when they recover and regain their sexual abilities in some recent studies (Sarna et al, 2005:1), poses a serious public health risk of transmission of resistant viral strains and re-infection with new viral strains for those on antiretroviral therapy. In fact, some HIV positive people on antiretroviral therapy may feel protected from either passing HIV to their sexual partners or from contracting sexually transmitted diseases due to their lowered viral load as a result of the effective use of antiretroviral therapy. Consequently, some may engage in unsafe sexual practices which then would perpetuate HIV transmission (Eisele et al, 2008:575-576).

With regard to the current study, the problem is that it is not clear what the situation in Swaziland is regarding the HIV disclosure, sexual practices of HIV positive persons receiving antiretroviral therapy.

1.4 PURPOSE OF THE RESEARCH

Polit and Beck (2008:81;766) define a research purpose as a broad declarative statement of a researcher's overall goal for a study. According to Net TOM (2009), the purpose of the research (a broad declarative statement) is to indicate what a research intends to do, where, and with whom, in order to answer the research question. The research purpose captures the essence of the study in a single sentence, including the variables, the population and often also the research setting (Brink, 2006:59).

The purpose of the current study was to identify and describe, quantitatively, context specific factors influencing HIV sero-status disclosure and sexual practices among HIV positive persons receiving antiretroviral drugs at the Mbabane National Referral VCT/ART Centre, Swaziland.

1.5 RESEARCH OBJECTIVES AND QUESTIONS

1.5.1 Research objectives

Burns and Grove (2005:15), define research objectives as clear, declarative and concise statements expressed in the present tense, focusing on one or more variables only for purposes of clarity. According to Polit and Beck (2008:81), research objectives are specific accomplishments the researcher hopes to achieve by conducting the study. The objectives indicate whether the variables are to be identified, analysed or described, and at times the focus of the objective includes identifying relationships among variables and determining differences between two groups regarding selected variables (Brink, 2006:79).

The objectives of this study are therefore to:

- Describe the HIV disclosure practices among HIV positive persons on antiretroviral therapy.
- Describe the sexual practices among HIV positive persons receiving antiretroviral therapy.
- Identify the underlying factors influencing HIV disclosure among PLWHA on antiretroviral therapy.
- Identify the factors influencing sexual practices among HIV positive people receiving antiretroviral drugs.
- Determine the relationship between HIV status disclosure and sexual practices among HIV positive persons on antiretroviral therapy.

1.5.2 Research questions

A research question is a clear and concise, interrogative statement worded or written usually in the present tense and with one or more variables (Burns and Grove, 2005:15; Brink, 2006:80). According to Polit and Beck (2008:81; 765), a research question is a statement of the specific queries a researcher wants to answer in addressing the research problem and the research question also guides on what types of data to be collected in the study.

This study seeks to answer the following questions:

- To what extent does disclosure of HIV sero-status occur among people living with HIV/AIDS (PLWHA) receiving antiretroviral therapy?
- To what extent does safe sexual practice occur among people living with HIV/AIDS (PLWHA) receiving antiretroviral therapy?
- What are the underlying factors influencing or associated with HIV sero-status disclosure among PLWHA receiving antiretroviral therapy?
- What are the underlying factors influencing or associated with sexual practices among PLWHA receiving antiretroviral drugs?
- What is the relationship between HIV status disclosure and sexual practices among HIV positive persons on antiretroviral therapy?

1.6 RESEARCH DESIGN AND METHODOLOGY

According to De Vos et al (2005:71), research methodology refers to the manner or way in which to solve problems; that is, the research process. Research methodology can also be defined as the entire strategy for the study, from the identification of the research problem to the final plans for data collection (Burns and Grove, 2001:223).

This research followed a positivist approach. The basic philosophical assumption underpinning this approach is that nature is basically ordered and regular, and that objective reality exists independent of human observations. In other words, positivism contends that phenomena are not haphazard or random events, but rather have antecedent causes (Polit & Beck, 2008:14-15; Babbie, 2010:43).

1.6.1 Study design

Study design, according to Cooper and Schindler (2006:716), is a blue print for fulfilling research objectives and answering research questions. The study design can also be defined as an overall plan for obtaining answers to questions being studied and for handling some of the difficulties encountered during the research process. Generally, researchers choose the design that best fits their purpose, is compatible with the resources available to them such as time, money, information, ethical considerations and their personal preferences (Polit and Beck, 2008:66; Brink (2006:92).

In this study, a non-experimental quantitative approach involving a descriptive and exploratory design was employed to determine the HIV disclosure and sexual practices among HIV positive persons receiving antiretroviral therapy (refer to chapter 3; section 3.2.2).

1.6.2 Study population

1.6.2.1 Population

A population, also referred to as a “target population”, is the entire set of individuals or objects (universe) having some common characteristics that are of interest to the researcher (Burns & Grove, 2003:233; Polit & Beck, 2008:761; Brink, 2006:206); while the accessible/source population is the aggregate of cases that conform to designated criteria and that are accessible as subjects for a study (Polit and Beck, 2008:338).

In this study, the population comprised of HIV positive people on antiretroviral therapy, 18 years and above and the accessible population comprised of HIV positive individuals on antiretroviral therapy, 18 years and above, and registered at the Mbabane National Referral VCT/ART Centre from the inception of the clinic to the time of the study (refer to chapter 3; section 3.3.1.1).

1.6.2.2 Elements

Elements are the most basic units (people, events, behaviour) of a population about which information is collected, typically human beings. From the identified population of HIV positive individuals on ART who are 18 years and above (elements), some were selected to form the sample from whom data was eventually collected (Brink, 2006:124; Polit and Beck, 2008:339: Burns & Grove, 2003:233).

In this study, the elements comprised of HIV positive individuals on ART (refer to chapter 3; section 3.3.1.1).

1.6.3 Sample and sampling

1.6.3.1 Sample

Polit and Beck (2008:339;765), define a sample as a subset of a population, selected to participate in a study. According to Cooper and Schindler (2006:717), a sample is a group of cases, participants, events or records (elements) consisting of a portion of the target population, carefully selected to represent that population.

In this study, the proportion of subjects selected from the accessible population from whom data was collected, formed the sample (refer to chapter 3; section 3.3.1.2).

1.6.3.2 Sampling

LoBiondo-Wood and Haber (2005:142), define sampling as a process of selecting a number of individuals from delineated target population in a manner that the individuals in the sample represent as nearly as possible the characteristics of the whole study population. Sampling is thus the researcher's process of selecting the sample from a population in order to obtain information regarding phenomena in a way that represents the population of interest (Babbie, 2010:199; Brink, 2006:124). Systematic random sampling was executed during the current research (refer to chapter 3; section 3.3.1.5.2 of this dissertation).

1.6.3.3 Sampling criteria

Sampling criteria lists the characteristics essential for membership in the target population and the criteria is developed from the research problem, the purpose, the conceptual and operational definitions of the study variables, and the design. The sampling criteria may include characteristics like the ability to write, to read, to communicate in a particular language, age and so on (Burns & Grove, 2003:234; Polit & Beck, 2008:356).

In this study a predetermined inclusion and exclusion criteria was used to select the elements from which information was collected regarding the study topic (refer to chapter 3; section 3.3.1.3).

1.6.3.4 Sampling frame

A sampling frame is a list of all elements in the population, from which the sample is drawn (Polit & Beck, 2008:765; Babbie, 2010:208; Cooper & Schindler, 2006:402).

In this study, the pharmacy antiretroviral refill registers were used as the sampling frame, to obtain the list of all patients on antiretroviral therapy at the Mbabane National Referral VCT/ART Center (refer to chapter 3; section 3.3.1.4).

1.6.3.5 Sampling plan/technique

A sampling plan is a formal plan that specifies a sampling method, a sample size, and procedures for recruiting subjects (Polit and Beck, 2008:765). According to Burns and Grove (2001:369), the sampling plan (design) may use probability (random) sampling methods or non-probability (non-random) methods. Probability sampling involves random selection of elements or members of a population. In probability sampling, researchers can specify the chance or probability that an element of the population will be included in the sample. Whereas, in non-probability sampling, elements or members of a population are non-randomly selected, so there is no way to estimate the probability or chance that an element will be included in a sample (Babbie, 2010:196-199: Polit & Beck, 2008:340; Brink, 2006:126;131)

In this study, a systematic random sampling technique was employed to obtain the required sample. Polit and Beck (2008: 344;347) describes systematic random sampling as a probabilistic technique in which each element within the study population has a specified chance of being selected. According to Brink (2006:126), probability sampling enables selection of a representative sample from who the findings can be generalised to the population, hence permitting correct use of inferential statistics (refer to chapter 3; section 3.3.1.5.1; 3.3.1.5.2).

1.6.4 Sample size estimation

Burns and Grove (2005:354), contend that there are not any hard and fast rules regarding the determination of sample size. Similarly, Polit and Beck (2008:348), argue that there are no simple formulas that can tell you how large a sample is needed in a given quantitative study. However, Brink (2006:135), argues that the researcher must consider both scientific and pragmatic factors influencing the sample when he/she decides on the numbers of subjects to be included in the study, and the factors vary from purpose, design and type of sample used.

To estimate the sample size for this study, the one group proportion formula advanced by Cooper and Schindler (2006:435) was used. At 95% confidence interval and 70% estimated population disclosure rate in Swaziland, a sample size of 323 was estimated. Considering a 5% adjustment of sample size assuming that 5% of questionnaires will not be completed adequately, the final sample size of 340. HIV positive people on antiretroviral therapy was selected for this study from the daily drug refill register (refer to chapter 3, section 3.3.1.6).

1.6.5 Study setting

According to Burns and Grove (2005:325), the study or research setting is the environment in which the study takes place; it can be a natural or controlled environment. And a natural environment is one where no changes have been made specifically for the purposes of the study. The current study was conducted at the Mbabane National Referral VCT/ART Center, located in Mbabane, the capital city of Swaziland. This site was selected because it has the largest numbers of HIV positive registered patients among all HIV clinics in the country and the fact that the cost of data collection would be minimized since the researcher was working at the same site (refer to chapter 3; section 3.3.2.2).

1.7 METHODS OF DATA COLLECTION

Burns and Grove (2005: 421), define data collection as a systematic process in which the researcher collects relevant information to achieve the research purpose and objectives. According to Brink (2006:54), the data collection process involves the application of a measuring instrument to gather data from the subjects.

1.7.1 Data collection instrument

According to Polit and Beck (2008:755), an instrument is a device used to collect data such as a questionnaire, test, observation schedule, and so on. The choice of the instrument to be used to collect data depends on the research design (Burns & Grove, 2005:421). A questionnaire is a structured data collection instrument comprising of a fixed set of questions and items, used to collect and record information from respondents in a specified sequence and with pre-designated response options, in a research project (Polit & Beck. 2008:371; De Vos et al, 2005:166 cites The new dictionary of social work, 1995).

A structured self-designed questionnaire was used (refer to annexure A), composed of mainly closed and a few open-ended questions to find out the HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy at the Mbabane National Referral VCT/ART Center (refer to chapter 3; section 3.4.2).

1.7.2 Administration of data collection instrument

After pretesting the instrument, the revised structured questionnaire was administered to collect data from the selected sample. The questionnaire was personally administered by the researcher/research assistants and the responses from the respondents were documented directly onto the instrument in the spaces/boxes provided on the instrument (refer to annexure A).

1.8 METHODS TO ENSURE VALIDITY AND RELIABILITY

1.8.1 Validity

Validity refers to the degree to which an instrument measures what it is supposed to measure (Polit & Beck, 2008:457). In other words, it broadly refers to the degree to which an instrument is doing or measuring what it is intended to do; an instrument may have several purposes which vary in number, kind and scope (De Vos et al, 2005:160-162).

For this study, content, face and construct validity were considered to be appropriate, and measures to ensure validity are discussed in detail in chapter 3; section 3.5.1 of this dissertation.

1.8.2 Reliability

According to De Vos et al (2005:163), Polit and Beck (2008:196), and Brink (2006:165), reliability refers generally to the extent to which independent administration of the same instrument (or highly similar instruments) consistently yield the same (or similar) results under comparable conditions.

The measures observed in this study to ensure reliability including calculation of the alpha reliability coefficient (a measure of the quality of a data collection instrument), the calculated Cronbach’s alpha coefficient in this study was, 0.875 (refer to chapter 3; section 3.5.2.1 of this dissertation.

1.9 DATA ANALYSIS

According to Polit and Beck (2008:763), data analysis in quantitative approaches refers to the manipulation of numeric data through the application of statistical procedures for the purpose of describing phenomena or assessing the magnitude and reliability of relationships among phenomena.

With the help of a statistician (refer to Annexure I for statistician's resume), the collected data was captured using Epi-info version 3.5.1 and then analysed using the Statistical Package for Social Sciences (SPSS) computer program, version 14.0. The obtained data was analysed using descriptive statistics and the results were organised, summarised and presented in form of frequency tables, percentages, graphs, charts (Brink, 2006:171). A detailed discussion on data analysis is given in chapter 3; section 3.6 and chapter 4; section 4.2 of this dissertation.

1.10 PRETESTING OF INSTRUMENT

According to Cooper and Schindler (2006:384), and Polit and Beck (2008:762), pretesting refers to an assessment or evaluation of a newly developed instrument by performing a trial administration before the start of the study

A pretest of the instrument was conducted in Mankanyane Government Hospital VCT/ART Clinic. This clinic was chosen because it shares similar patient and clinic care characteristics as Mbabane National Referral VCT/ART Clinic. The findings of the pretest led to the modification in phrasing of some questions, addition of some items for some questions, estimation of time of data collection per respondent, estimation of number of research assistants needed for the main study and estimation of the resources required for the main study (refer to chapter 3; section 3.4.4 of this dissertation).

1.11 SIGNIFICANCE OF THE STUDY

The final significance (contributions) of the study findings are discussed in chapter 5; section 5.7. However, the study was initially considered significant for the following reasons:

- From the literature reviewed, this subject has been researched mainly in the western countries and no such study has been conducted among people living with HIV/AIDS receiving antiretroviral therapy in Swaziland.

- The information obtained from this study could help to guide the development and operationalization processes to ensure effective prevention strategies for the HIV positive people on ART, “positive prevention”; a concept currently being developed in Swaziland.

- The findings of this research might help to provide justification for the efforts currently geared towards pursuit of HIV prevention among the HIV positive persons on antiretroviral therapy. This might in turn reduce the risk of having to deal with the burden of drug resistant HIV strains during this early phase of the antiretroviral programme in Swaziland.

- Globally, studies on disclosure of HIV status and sexual practices among HIV sero-positive individuals are limited. Even with the recent increase in the number of such studies, very few examine both constructs; namely, disclosure of HIV sero-status and sexual practices among HIV-infected populations. The findings of this research might contribute to more knowledge and a better understanding of HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy and the underlying factors affecting disclosure and sexual practices from a Swaziland perspective.

1.12 SCOPE AND LIMITATIONS OF THE STUDY

Burns and Groove (2005:39-40), describe study limitations as restrictions in a study that can reduce the generalization of the results. There are two types of limitations: conceptual and methodological limitations. Conceptual limitations limit the abstract generalization or transferability of the results, whereas methodological limitations limit the population to which the results can be generalised or transferred.

With regard to the current study, data were provided by HIV positive persons receiving antiretrovirals from Mbabane National Referral VCT/ART Centre located in an urban area, thus limiting transferability of results to clinics especially in the rural areas and the entire HIV positive population in the country (refer to chapter 5; section 5.8)

1.13 ETHICAL CONSIDERATIONS

To ensure that the rights of the respondents, institution and scientific integrity was upheld throughout the research stages and process, the ethical considerations as discussed below were maintained:

The ethical measures observed in this study include: the right to freedom from harm and discomfort, right to protection from exploitation, right to self-determination, right to full disclosure, informed consent, right to fair treatment, right to privacy, confidentiality and anonymity. The institutional related principles considered include: permission to conduct the study and avoidance of disruption or interference, The principles considered with regard to scientific integrity include: veracity, fidelity, avoidance of plagiarism, avoidance of falsification/fabrication, cooperation with contributors, debriefing and referrals, and dissemination of findings (refer to chapter 3; section 3.7).

1.14 DEFINITION OF KEY CONCEPTS

Brink (2006:25), describes “concepts” as words, pictures or ideas (linguistic labels) that we assign to objects or events. According to Polit and Beck (2008:57;749), “concepts” are abstractions based on observation of behaviours or characteristics. In other words, they are the carriers of meanings of words, thereby enabling us to correctly classify or categorise phenomena in the social world. Cooper and Schindler (2006:707), define ‘concept’ as a bundle of meanings or characteristics associated with certain concrete, unambiguous events, objects, conditions or situations.

A conceptual definition, therefore, is the abstract or theoretical meaning of the concept being studied (Polit & Beck, 2008:59;749). According to Brink (2006: 86), a conceptual definition conveys the general meaning of the concept, and uses words to describe its properties. Therefore, the concepts defined in this section are considered of paramount importance in enhancing understanding of the findings that were observed in this study.

The concepts used in the context of this study are defined as follows:

AIDS

AIDS is an abbreviation that stands for acquired immune deficiency syndrome, which is a health condition or disease caused by HIV (see definition to follow) (AIDS Infonet, 2008). According to the American Foundation for AIDS research (2008), AIDS is a disease caused by HIV as a result of the breakdown of the body’s immune system and renders it unable to fight off infections and other illnesses that take advantage of a weakened immune system. AIDS occurs when the immune system is severely weakened by the HIV, and is characterised by the development of one of about 25 different opportunistic infections that might not affect a person with a normal immune system but that take advantage of damaged immune systems (Global health reporting.org, 2009).

In this study, AIDS is defined as a disease caused by HIV as a result of the breakdown of the body's immune system hence making the body vulnerable to attack by other infections.

Antiretrovirals (ARV's)

Antiretrovirals are drugs used to treat HIV and AIDS. A drug is a substance used in medicine (Avert, 2008; The Oxford Mini Dictionary, 2002:186). Antiretrovirals are drugs or substances that stop or suppress the activity of retroviruses (viruses composed of RNA rather than DNA) such as HIV (The free dictionary, 2009). According to Global health reporting.org (2009), ARV's are medications designed to inhibit the reproduction of HIV in the body and their effective use can delay the deterioration of the immune system and onset of AIDS for many years.

In this study, antiretrovirals are defined as drugs used to suppress the multiplication/replication of HIV in the body.

Antiretroviral therapy (ART)

ART refers to treatment with drugs that inhibit the ability of the HIV or other retroviruses to multiply in the body (National Cancer Institute, 2009). ART refers to treatment of viral infections like HIV using antiretroviral drugs and the drugs do not kill the virus but rather they slow the growth of the virus (The Body, 2009). These drugs usually involve administration of three or more different drugs (highly active antiretroviral therapy - HAART) taken daily for the rest of a person's life (Avert, 2008; MedicineNet, 2008).

In this study, antiretroviral therapy is defined as treatment with drugs (antiretrovirals) with the intention of suppressing the replication of HIV in the body.

Casual sexual partner

A casual sexual partner refers to someone having sex with another person but who has no plans, desire or intention of furthering a long-term commitment to any type of exclusive relationship with that person (Urban dictionary.com, 2009). From Guiver's (2009) definition of casual sex, a casual sex partner could be defined as someone involved with another in sexual activity where neither of those involved defines the relationship as being romantic or as 'boy friend' and 'girl friend". In other words, a casual sexual partner is one involved in a non-monogamous sexual activity or relationship without having the commitment of a lasting relationship (Article world.com, 2009).

A casual sexual partner in this study is defined as a person involved in a sexual relationship with another but has no intention of furthering a long-term commitment to a monogamous relationship.

HIV

HIV is an abbreviation that stands for human immunodeficiency virus. This is the virus that causes AIDS. It is a member of a group of viruses called retroviruses (AIDS infonet, 2008; Answers.com, 2009b). HIV destroys the white blood cells called CD4 T-cells that are critical to the normal function of the human immune system, which defends the body against illnesses. When HIV weakens the immune system, a person is more susceptible to developing a variety of cancers and becoming infected with viruses, bacteria and parasites (Global health reporting.org, 2009).

HIV in this study is defined as the virus that causes AIDS, a disease resulting from the breakdown of the normal function of the immune system.

HIV disclosure

The Oxford Mini Dictionary (2002:171) defines disclosure as revealing, divulging, imparting or to let slip of information about something or someone. Disclosure could also be defined as the act or process of revealing or uncovering something or information (Answers.com, 2009a). HIV disclosure similarly means revealing or uncovering information about one's HIV status to other persons of his or her choice (WHO, 2005:xi)

In this study, HIV disclosure is defined as the act or process of revealing one's HIV status to other people of their choice.

Immune deficiency

According to Wisegeek (2009), immune deficiency is a medical condition in which a patient's (or person's) immune system is not functioning normally, leaving him or her vulnerable to infections. In other words, this is the inability of the body's defence mechanisms to combat infections by bacteria, viruses and fungi. This is the result of the absence or hampered function of certain components of the immune system (Centre for cancer education, 2008; Immune deficiency foundation, 2007:10).

Immune deficiency in this study refers to the state of the body's immune system when its normal function is hampered, hence making the body vulnerable to being attacked by other infections.

Non-disclosure

This is the contrary of the definition of disclosure as defined by the Oxford Mini Dictionary (2002:171); that is, non-disclosure is not revealing, divulging, imparting or letting slip of information about something or someone. Similarly according to WHO (2005:xii) non-disclosure refers to the situation or state where a person does not reveal their HIV status to anyone. Non-disclosure is an act or process of refusal to reveal or uncover something or some information (Answers.com, 2009c).

Non-disclosure is defined in this study as the act of not revealing information about one's HIV status to other people.

People living with HIV/AIDS (PLWHA)

PLWHA refers to people who have tested and are confirmed to be carrying HIV in their body (WHO, 2005:xii). According to the New Zealand digital library (Sa), people living with HIV/AIDS refer to people who are actually infected with the HIV and/or experiencing AIDS-related illnesses or infections. People living with HIV/AIDS refers to HIV positive people; that is, those who have HIV, the agent/virus that causes AIDS (Wikipedia, 2009).

People living with HIV/AIDS are defined in this study as persons who are confirmed to be having HIV in their body whether or not they have signs and symptoms of AIDS.

Positive prevention

Positive prevention refers to averting or halting of transmission of HIV/Sexually transmitted infections among those who are already living with HIV in their body

(Robinson, 2007:1;2). According to Bellocg (2006), positive prevention refers to strategies to halt the transmission of HIV for people living with HIV/AIDS.

The British Columbia Persons with AIDS Society (2009) describes positive prevention as approaches directed towards people living with HIV/AIDS and intended to reduce the negative or challenging effects of illness and maximise their quality of life (also called tertiary prevention).

In this study, positive prevention is defined as the approach used with people living with HIV/AIDS in averting or halting of the transmission of HIV and other sexually transmitted infections.

Safer sex

Safer sex refers to sexual behaviours and activities during intercourse that can reduce or have a low risk of transmitting HIV infection from an infected person to an uninfected person, such as the correct use of condoms and sex without penetration as in mutual masturbation (WHO, 2005:xii; Your Sex Health, 2008; NAPWA, 2009). It also refers to any sexual activity that minimises the risk of spreading or acquiring sexually transmitted infections such as HIV through sexual activities especially sexual intercourse (ACAS, 2006:1; The free online dictionary: 2008a).

Safer sex in this study refers to sexual activities and behaviour practiced during sexual intercourse to minimise the risk of transmitting HIV infection form one person to another. This involves practices such as the correct and consistent use of condoms and mutual masturbation.

Sero-status

Sero-status refers to the condition of having or not having detectable antibodies to an organism (microbe) in the blood as a result of infection (Biology online, 2009). In other words, it is the presence or absence of an organism in the blood as may be measured by the presence of antibodies against the organism (antibody status) or by the presence of the organism itself (antigen status). If the antibodies or organisms are present, a person is said to be sero-positive; if not, a person is said to be sero-negative (Centre for cancer education, 2008; Dictionary-Babylon.com, 2008). Sex can only be safe if there is no HIV, no blood or sexual fluids or no way for HIV to get into the body otherwise “safer sex” only connotes reduction of risk and not elimination of risk of HIV transmission (AIDS.org, 2009).

Sero-status in this study is defined as the presence or absence of detected HIV antibodies in ones’ blood. This could be positive when HIV is present or negative when absent.

Sexual practices

Sexual practices refer to activities associated with sexual intercourse (The free online dictionary, 2008b; Wordweb online, 2008). It can also be defined as the manner in which humans experience and express their sexuality, and this encompasses a wide range of activities such as strategies to find or attract partners, interaction between individuals and sexual contact (Answers.com, 2009d).

Sexual practices in this study refer to activities and behaviours experienced, expressed or associated with sexual intercourse.

Steady sexual partner

A steady sexual partner refers to someone involved in an exclusive sexual relationship (Dictionary.com, 2009). It also refers to a person in a constant, committed, regular or habitual relationship (Your dictionary.com, 2009). LaRon & Diane (2008) in their study defined a steady sexual partner as a person with whom one engages in sexual intercourse on a regular interval or otherwise long-term committed basis.

A steady sexual partner is defined in this study as a person involved in monogamous sexual relationship and has the intent of furthering a long-term committed relationship.

Therapy

Therapy refers to the treatment of disease (Medicine Net.com, 2008). According to the Oxford Mini Dictionary (2002:639), therapy refers to a treatment for physical or mental disorders. According to Answers.com (2009e), ‘therapy’ refers to treatment of illness or disability

Therapy in this study refers to the treatment of HIV/AIDS both physically using antiretroviral drugs and psychologically by way of counselling.

Unprotected sex/unsafe sex

Unsafe sex refers to any act of sexual intercourse in which the participants use no form of barrier contraception (Babylon.com, 2009). According to the free online dictionary (2009), unprotected sex refers to engaging in sexual activity without taking precautions against the risk of pregnancy or infection by sexually transmitted diseases [such as use of condoms]. Unsafe (unprotected) sex refers to vaginal or rectal sexual intercourse without use of condoms hence increasing the risk of blood or sexual fluids touching the soft, moist areas (mucous membranes inside the rectum, vagina, mouth, nose or tip of penis), thereby increasing the risk of transmission of STI's including HIV (AID.org, 2009).

In this study unprotected or unsafe sex is defined as any act of sexual intercourse that increases the risk of contact with potentially HIV infected fluids such as blood or sexual fluids with the mucous membranes. This includes absence of condom use.

1.15 LAYOUT OF THE STUDY

Chapter 1	Orientation of the study
Chapter 2	Literature review
Chapter 3	Research design and method
Chapter 4	Data analysis, presentation and description
Chapter 5	Conclusions and recommendations

1.16 SUMMARY

This chapter introduced the study by presenting the following main topics: introduction, background to the problem, statement of the problem, significance of the study, purpose of the study, the research objectives and questions, research methodology, methods of data collection, measures to ensure validity and reliability, pilot study, brief overview of data analysis, limitations of the study, ethical considerations, definition of key concepts and the layout of the study.

The next chapter, chapter 2, deals with the literature review undertaken by the researcher in relation to the topic of study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is a critical summary of research on a topic of interest, often prepared to put a research problem in context (Polit & Beck, 2008:757). The current chapter explores findings from completed research studies with regard to the key variables of the current study; namely, HIV/AIDS disclosure, sexual practices and antiretroviral therapy and how these variables are related to the socio-demographic characteristics of HIV positive persons on antiretroviral therapy.

2.2 HIV/AIDS DISCLOSURE

2.2.1 Definition

The Oxford Mini Dictionary (2002:171) defines disclosure as revealing, divulging, imparting or to let slip of information about something or someone. Disclosure could further be defined as the act or process of revealing or uncovering something or information (Answers.com, 2009). HIV disclosure similarly means revealing or uncovering information about one’s HIV status to other persons of his or her choice (WHO, 2005:xi). The word “disclosure” is synonymous with words such as revelation, exposé, discovery, admission, confession or leak.(Microsoft Word, 2007)

2.2.2 Overview of disclosure

The prevention and control of HIV infection depends on the success of strategies to prevent new infections and treat currently infected individuals. HIV counseling and testing (HTC), serves both a critical prevention and treatment role in the control of the HIV epidemic. Within the testing and counseling programs, emphasis is placed on the importance of HIV status disclosure among HIV-infected individuals, particularly to their sexual partners (WHO, 2004:1).

In fact, there is an increased recognition that disclosing one’s HIV status is an essential part of behaviour modification required to reduce the incidence of HIV. Voluntary counseling and testing (VCT) for HIV is widely promoted as an important first step in behaviour modification. However, without disclosure few of the benefits of VCT can be realized (Norman, Chopra & Kadiyala, 2005:1). Disclosure is also fundamental in managing HIV especially in terms of adhering to complex treatment regimens and in resource constrained settings, disclosure of HIV status has become an entry criterion for many HIV treatment programmes (Norman et al, 2005:1).

Disclosure of HIV positive status is however a complex, difficult and often very personal matter because it involves communication about a potentially life threatening, stigmatized and transmissible illness (Remien & Bradley, 2007:64E). In a South African study conducted by Cloete, Strebel, Simbayi, Van Wyk, Henda and Nqeketo (2010:7;10), among the challenges reported by PLWHA are: disclosure of HIV status to others and risky sexual behaviours for HIV infection. In this same study, it was observed that once diagnosed HIV positive, men avoided seeking help, treatment and support for the fear of being stigmatized. This behaviour, however, was observed to be more related to the “macho” culture that required a man to be “strong”. In a study conducted by Marcellin, Abé, Loubière, Boyer, Blanche, Koulla-Shiro, Ongolo-Zogo, Moatti, Spire, Carrieri, and the EVAL Study Group (2009:1017), in Cameroon, 57% (*f*=1787; n=3151) of the respondents took 6 months from HIV diagnosis to first medical consultation for HIV care, 28% (*f*=887; n=3151) took between 1 and 6 months, while, 15% (*f*=477; n=3151) took 6 months from HIV diagnosis to first medical consultation for HIV care.

There is also sufficient evidence that one’s culture and geography play a significant role in the way an individual perceives health and sickness. The global numbers of people living with AIDS and the rate of new HIV infections also remind us more of the role our cultures play in fueling the HIV spread, than personal or individual vulnerabilities. As a result, the social meanings attached to HIV have given rise to social limitations mostly based on silence and invisibility/secrecy – not only about the disease but also about one’s HIV status (Díaz and Alfonso, 2007:2). For this reason, the choices people make about disclosure of their HIV status are not only personal, but also across different age groups, in different situations and contexts, and even with different partners, and may change with time, depending on one’s experiences (Remien & Bradley, 2007:64E).

Strategies individuals use to negotiate and counter the fear of rejection and isolation has been relatively under-reported. The way each person experiences and copes with the illness is reflected in the choice of whether, how and to whom they disclose their HIV positive status. The decision is embedded within individual perceptions and the local context of HIV/AIDS (Norman et al, 2005:1). Generally, the disclosure rates in the developing countries range from 16.7%-86% with an average disclosure rate of 52%, compared to an average disclosure rate of 71% observed among persons living with HI/AIDS in the developed world (refer to table 2.1). The lowest HIV status disclosure rates are observed in Sub-Saharan Africa among mothers attending antenatal care, where the disclosure rates range from 16.7% - 32%. In this same region (Sub-Saharan Africa), there is a dearth of research on the complex process of HIV disclosure especially considering the high HIV prevalence rates in this region (WHO, 2004:2; Norman et al, 2005:2).

Table 2.1: Rates of HIV positive status disclosure among women

Setting	Average disclosure rate (%)	Range of disclosure rate (%)
Developed world	71	42 – 100
Developing world	52	16 – 86

Source: WHO (2004). Gender dimensions of HIV status disclosure to sexual partners: rates, barriers and outcomes.

Ericdotter and Skånberg (2005:13), in their Swaziland study, observed that HIV sero-status disclosure rate to sexual partners was 61% in Swaziland. A similar study conducted by Lurie, Pronyk, De moor, Heyer, DeBruyn, Struthers, McIntyre, Gray, Marinda, Klipstein-Grobusch and Martinson (2008: 490) in Johannesburg, South Africa, among HIV positive people on antiretroviral therapy revealed an average disclosure rate of 75% inclusive of disclosure to sexual partners, in the urban and rural settings. In a Ugandan study by Kadowa and Nuwaha (2009:28) in the Mityana district, the HIV status disclosure rate among PLWHA was observed at 50% (139/278) and in a Nigerian study conducted by Akani and Erhabor (2006:88), 77% of PLWHA reported disclosure of their HIV status while 23% did not disclose their HIV status.

2.2.3 Importance/ benefits of HIV status disclosure

Disclosure of one’s HIV sero-status offers several important benefits to infected individuals, their family, the community, and to the general public (WHO, 2004:1).

2.2.3.1 Public health benefits of disclosure

From a public health perspective, disclosure of HIV sero-status by PLWHA to sexual partners, family, friends or others to whom they may choose to disclose, could:

- Motivate the sexual partners of the PLWHA to whom disclosure has been made, to seek HIV testing as a first step to prevention of transmission of HIV (WHO, 2004:1).
- Motivate sexual partners to change to safer sexual behaviour and ultimately reduce risk of HIV transmission from the infected to the uninfected sexual partner (WHO, 2004:1).
- Enhance other health behaviours that may improve the management of HIV (WHO, 2004:1)
- Be a catalyst for access to a variety of important and often essential resources required to effectively respond to the impact of HIV/AIDS-related “shocks”, within the affected populations (Norman, Chopra and Kadiyala, 2007:1780; Nabilek, 2009).

2.2.3.2 Community benefits of disclosure

From a community stand point, disclosure of HIV sero-status by HIV positive persons could be beneficial in the following ways:

- HIV status disclosure opens the door to dynamic responses encompassing community involvement, the support of other HIV positive people and their families, as well as creating an enabling platform for public disclosure and the eradication of stigma associated with HIV (Norman et al, 2005:5; Nabilek, 2009; Ramos, 2011).
- Some PLWHA who disclose their HIV status not only find disclosure a process of unburdening themselves, but this also helps them join a community where their HIV-related emotional and physical challenges are shared with other people who are going through similar difficult experiences (Norman et al, 2007:1778; Ramos, 2011; Nabilek, 2009).
- Disclosure of HIV status may not only give an opportunity to the infected person to be involved in the local HIV community, but also helps to foster important

social and material resources required to respond to HIV/AIDS at the community level (Norman et al, 2007:1780: Nabilek, 2009; Ramos, 2011).

- Disclosure of HIV status by HIV positive persons may also increase access to formal institutional support and opportunities to take positive leadership roles in the community (among the PLWHA and other community members), against HIV/AIDS-related effects (Norman et al, 2007:1775; Nabilek, 2009; Ramos, 2011).

2.2.3.3 Benefits of disclosure at family level

Disclosing to family members consistently allows HIV positive people and their families to maintain their livelihoods, especially those with HIV positive children or those who are ill themselves. Disclosure then is the catalyst for accessing necessary support. The majority of PLWHA who disclose their HIV status to loved ones, are able to access support materially as well as emotionally (Norman et al, 2005:6-7). HIV disclosure at the family level could enable the activation of family support and community networks, which in turn enhances the mobilization of available family resources not only for the affected individual but also for others within that family network (Norman et al, 2007:1775; NAM, 2008; Ramos, 2011).

2.2.3.4 Individual benefits of disclosure

At the individual level, disclosure of HIV status by PLWHA could have the following benefits:

- Providing psychological and physical benefits such as; decreased anxiety about the risk of HIV transmission to sexual partners; therefore, sex can be much more comfortable and relaxed. Disclosure of HIV status may even enhance intimacy and communication about sex in a relationship, and in so doing, increase opportunities to discuss and implement HIV risk reduction with sexual partners.

Disclosure, therefore, acts as a way of protecting oneself against re-infection with HIV and at the same time preventing transmission of HIV to uninfected sexual partners (Remien and Bradley, 2007:64E; Positive Women's Network, 2010; WHO, 2004:1). Similarly, adolescents who disclose their positive HIV status have been shown to have a greater likelihood of disclosing to romantic (sexual) partners (Henry-Reid, Wiener & Garcia, 2007).

- Disclosure of HIV status may increase opportunities for social support for the individual living with HIV. In a French study by Bouillon, Lert, Sitta, Schmaus, Spire and Dray-Spira (2007:S92), disclosure of HIV status among PLWHA was positively associated with social and emotional support from those to whom disclosure had been made. Henry-Reid et al (2007), report that even adolescents who disclose their HIV status have been shown to have greater resources and psychological support from family and friends.

- Disclosure of HIV status is an unburdening experience to the HIV infected individual and this helps him/her to release psychological stress related to his/her HIV positive status. This, in turn, can reduce stress-related morbidities and enhance better psychological management of the illness itself. Adolescents who disclose their HIV positive status have been shown to have better psychological outcomes and report fewer symptoms of post-traumatic stress disorders (Norman et al, 2007:1775; 1778; Henry-Reid et al, 2007; Ramos, 2011).

- In a qualitative study conducted by Ujiji, Ekström, Ilako, Indalo and Rubenson (2010:7), in Kenya, all HIV positive pregnant women interviewed felt that disclosure of HIV status could strengthen partner trust because disclosure showed their openness, encouraged partner support and improved communication. However, this only happened after a woman had satisfied her desire to have a child and did not fear losing her partner.

- HIV status disclosure by PLWHA may increase opportunities for access to other forms of care like home-based care, specific non-governmental (NGO) support and specific social grants which are dependent upon the disclosure of HIV status (Norman et al, 2007:1775; NAM, 2008).

- Disclosure of HIV status is a way for the HIV infected individual to regain the “freedom” that their HIV positive status had taken away from them (Norman et al, 2007:1780; Ramos, 2011. Henry-Reid et al (2007), report that HIV positive adolescents who disclose their HIV positive status have been shown to develop a higher peer self-competence.

- Disclosure at the individual level may improve access to necessary medical care including antiretroviral therapy (ART) and increase opportunities to plan for the future (WHO , 2004:1; NAM, 2008).

2.2.4 Reasons/motivators for HIV disclosure

For many HIV positive people, the experience of disclosure is a struggle and often takes time, or even years before it happens. The feeling of guilt of this burden due to non-disclosure to loved ones and the daily reality of keeping their status a secret, is a very difficult and onerous process (Norman et al, 2005:5; Ramos, 2011; Nabilek, 2009).

In spite of the difficulties associated with disclosure of one’s HIV status, those who choose to disclose do so due to the:

- sense of ethical responsibility/concern they have for their sexual partners’ health, failing health or severity of illness (WHO, 2004:2). In the study by Kadowa and Nuwaha (2009:28) in Uganda, 45 of the 139 (32%) PLWHA who disclosed their HIV status did so because they wanted their partners to take an HIV test (and facilitate HIV prevention behaviour).

- need for social support for themselves to cope with the diagnosis (WHO, 2004:2). In a Ugandan study by Kadowa and Nuwaha (2009:28), 48 of the 139 (35%) PLWHA who disclosed their HIV status did so due to the need for financial support. Also in a Nigerian study by Akani and Erhabor (2006:88), PLWHA reported that their expectation of economic, spiritual, emotional and social support were motivators to disclose of their HIV status.
- need to alleviate the stress associated with non-disclosure (WHO, 2004:2).
- need to access HIV treatment. In a Ugandan study by Kadowa and Nuwaha (2009:28), fourty six (46) of the 139 (33%) PLWHA disclosed their HIV because of the need to get HIV treatment.
- Lastly, in the London study by Elford, Ibrahim, Bukutu and Anderson (2008:519), it was observed that HIV positive persons who had experienced HIV-related stigma and discrimination were less likely to disclose their HIV status than those who had not experienced discrimination. In this instance, the experience of stigmatization and discrimination was a reason for non-disclosure HIV status.

2.2.5 Timing of HIV disclosure

For many people living with HIV/AIDS, the biggest challenge is the timing of disclosure and the very experience of disclosure is a struggle and often takes time, even years before this happens. Generally, disclosure becomes easier the longer someone has been living with HIV, as he or she become more comfortable with the HIV status. Disclosure of HIV status to sexual partners in both the developed and developing countries has also been observed to increase with time. However, for most PLWHA, the time period between non-disclosure and full or open or public disclosure of HIV status is a temporal stage whereby they manage their HIV disclosure. For some this entails disclosure only to some family members, while for others, not disclosing at all (Remien & Bradley, 2007:64E; WHO, 2004:2; Norman et al, 2005:3).

In a study conducted by Taraphdar, Dasgupta and Saha (2007:280), in India, 100% of PLWHA in relationships longer than 5 years disclosed their HIV status compared to 33% of those in relationships less than 5 years. Also, in the French study by Spire, Bouhnik, Obadia, Lert and VESPA study group (2005:1431), PLWHA in sexual relationships less than 5 years were positively associated with non-disclosure of HIV status (AOR, 3.3; 95%CI, 1.8-6.2). In the same study, shorter time from diagnosis of HIV had a positive significant association with non-disclosure of HIV status (AOR, 2.0; 95%CI, 1.1-3.4). In another French study by Bouillon et al (2007:S91), shorter time from diagnosis of HIV had a positive significant association with lower disclosure rates of HIV status to sexual partners among PLWHA. Also in a South African study by Wong, Van Rooyen, Modiba, Richter, Gray, McIntyre, Schelter and Coates (2009:218), longer time from diagnosis of HIV among PLWHA was related to disclosure of HIV status to especially sexual partners (β=0.04). In addition, a Ugandan study by Kadowa and Nuwaha (2009:29), PLWHA who had taken an HIV test more than 24 months prior to the study were more likely to disclose their HIV status compared to who had tested in less than 24 months (COR, 3.39;95%CI, 2.01-5.73).

With regard to the actual frequencies of timing of disclosure, in an Ethiopian study conducted by Deribe, Woldemichael, Wondafrash, Hails and Amberbir (2008:5), 73% of PLWHA disclosed their HIV status on the day of receiving result; 12% within 2 weeks; 9% between 2 - 4 weeks and 4% in 1 - 4 months while 2% disclosed after 4 months of receiving HIV results. While in a USA study conducted at the Yale-New Haven Hospital, 22% of PLWHA delayed disclosure and 24% did not disclose their HIV status at all (Niccolai, King, D’entremont and Pritchett, 2006:104).

In comparison, Nachega, Lehman, Hlatshwayo, Mothopeng, Chaisson and Karstaedt (2005:198) in their South African study, observed that the length of time one had known their HIV positive status was not significantly associated with disclosure of their HIV status to their sexual partners.

2.2.6 Persons to whom disclosure is done

Most HIV positive persons do disclose to some but not all of their sexual partners, friends and family. But for some others, HIV disclosure may necessitate disclosure only to those who work in the health care system or those they feel will offer some form of support (Remien & Bradley, 2007:64E; Norman et al, 2005:4).

In a study by Deribe et al (2008:5), in Ethiopia, 95% of PLWHA had disclosed their HIV status to at least 1 person and in another study conducted by Nachega et al (2005:198), in South Africa, 90% of PLWHA disclosed their HIV status to at least 1 person. In another South African study conducted by Wong et al (2009:217), 87% of PLWHA disclosed their HIV status to at least 1 person while 13% did not disclose at all. Also, in a London study conducted by Elford et al (2008:516), 88% of PLWHA disclosed their HIV status to at least 1 person.

With regard to disclosure of HIV status to sexual partners, Spire et al (2005:1431) in their French study observed that 3% of PLWHA did not disclose their HIV status to their sexual partners. In an Indian study by Taraphdar et al (2005:280), 70% of PLWHA disclosed their HIV status to their sexual partners, whereas in the Ugandan study by Kadowa and Nuwaha (2009:28), 80% of PLWHA disclosed their HIV status to their sexual partners. An Ethiopian study by Gari, Habte and Markos (2009:11), showed that 85.7% of HIV positive women disclosed their HIV positive status to their sexual partners.

The above findings seem to suggest that HIV positive persons may be more likely to disclose their HIV status to sexual partners than to significant others. However, in a Swaziland study by Ericdotter and Skånberg (2005:13), 61% of PLWHA disclosed their HIV status to their sexual partners. Similarly, in the study conducted by Fougelberg et al (2008:14), in South Africa, 64% of men and 51% of women disclosed their HIV status to sexual partners. Furthermore, in a study conducted by Brou, Djohan, Becquet, Allou, Ekouevi, Viho, Leray, Desgrées-du-Loû and the ANRS Ditrame Plus Study Group (2007:1915), in Abidjan, only 46.2% of HIV positive women disclosed their HIV status to their sexual partners. Also in a Nigerian study conducted by Akani and Erhabor (2006:88), only 24% of PLWHA disclosed their HIV positive status to their sexual partners (p=0.004). In the Ethiopian study conducted by Gari et al (2009:13), no significant association was observed between disclosure of HIV status by HIV positive women and type or duration of their relationship.

With specific regard to disclosure of HIV status to type of sexual partners, in a Côte d'Ivoire study conducted by Traore (2005:63), 77% of PLWHA with regular sexual partners and 24% of PLWHA with casual sexual partners reported disclosure to their sexual partners. In a French study conducted by Bouillon et al (2007:S91), 84% of PLWHA disclosed their HIV status to a steady sexual partner. In the study conducted by Niccolai et al (2006:104), in USA, 54% of PLWHA disclosed their HIV status to a current or recent past sexual partner and non-disclosure was more common in past relationships (40%) compared to 12% in current relationships. It was also observed in this same study that disclosure was more common among primary (steady) relationships at 63% compared to non-primary (casual) sexual relationships at 45%. Whereas in a New York study by Parsons, Schrimshaw, Bimbi, Wolitski, Gómez and Halkitis (2005:S90), 29% of PLWHA disclosed their HIV status to all their casual sexual partners, 38% to some of their sexual partners and 33% did not disclose to casual sexual partners; in the Ethiopian study by Deribe et al (2008:5), 91% of PLWHA disclosed their HIV status to current main (steady) partners. Also in the study conducted by Florendo, Kishun, Ramcharran, Samlall, Raghunauth and persaud (2006), in Guyana, HIV status disclosure to regular (steady) sexual partners was significantly likely (75%) compared to disclosure to non-regular (casual) sexual partners (34%). In the referred to study by Florendo et al (2006), males were observed to be more likely to disclose their HIV status to regular sexual partners (88%) and females were more likely to disclose to their non-regular (casual) partners (47%). In addition, in a London study conducted by Elford et al (2008:520), 75% of PLWHA who disclosed their HIV status did so to their current sexual partners. Also, in the South Africa study by Nachega et al (2005:198), 38% of PLWHA with a spouse (steady sexual partner) did not disclose their HIV status to their sexual partners. While in the South African study by Wong et al (2009:217), 59% of PLWHA disclosed their HIV status to a spouse. Lastly, in a French study by Spire et al (2005:1431), a positive association was observed between having a casual sexual partner in the past 12 months prior to the study and non-disclosure of HIV status by PLWHA (AOR, 2.9;95% CI, 1.5 - 5.3).

The findings in the above studies suggest that PLWHA may be more likely to disclose their HIV positive status to regular or steady or current sexual partners than to casual or non-regular or non-steady sexual partners.

Considering other persons to whom PLWHA disclose their HIV status other than sexual partners, Bouillon et al (2007:S91), in the French study observed that 32.4% of PLWHA disclosed their HIV status to their mothers, 22.3% to fathers, 32.2% to siblings, 26.2% friends, 20.5% to their children and 19.6% to other relatives. Furthermore, in a Guyana study, 81% of PLWHA disclosed their HIV status to a family member (Florendo et al, 2006). Moreover, in the South African study conducted by Wong et al (2009:217), 93% of PLWHA who disclosed their HIV status did so to their boy/girl friend, 77% to a family member and 58% to a health care professional. In the study by Kadowa and Nuwaha (2009:28) in Uganda, 30% of PLWAH disclosed their HIV status to their parents, 34% to siblings, 20% to their children, 34% to other relatives and 50% to close friends. Again, in the study conducted by Akani and Erhabor (2006:88), in Nigeria, 24% of PLWHA disclosed their HIV status to parents, 8% to siblings, 28% to pastors, 6% to friends and 10.4% to other family members. On the contrary, in the study by Elford et al (2008:520), in London, PLWHA were less likely to disclose their HIV status to their employers.

2.2.7 Reasons for non-disclosure

Non-disclosure rates in developing countries reflect that larger proportions (10-78%) of HIV positive women do not disclose their HIV status results compared to (3-10%) of HIV positive women in the developed world (WHO, 2004:2). Refer to table 2.2.

Table 2.2: Rates of HIV positive status non-disclosure among women

Setting	**Average non-disclosure rate (%)**	**Range of non-disclosure rate (%)**
Developed world	6.5	3 – 10
Developing world	44	10 – 78

Source: WHO (2004). Gender dimensions of HIV status disclosure to sexual partners: rates, barriers and outcomes.

The barriers to disclosure or reasons for non-disclosure include: fear of abandonment; fear of loss of economic support from partners; fear of rejection/discrimination; fear of upsetting family members and disrupting family relationships; fear of being blamed; fear of physical and emotional abuse and fear of accusations of infidelity (Medley, Garcia-Moreno, McGill and Maman, 2004:300). Norman et al (2005:6) in their South African study observed that most HIV positive people fear rejection or abandonment by loved ones as a consequence of disclosure and this hinders them from disclosing their HIV status to their sexual partners and families. Similarly, Simbayi, Kalichman, Strebel, Cloete, Henda and Nqeketo (2007:33) in another South African study noted that previous negative disclosure outcome especially discrimination is one strong independent predictor of not disclosing to sex partners. In yet another South African study conducted by Cloete (2010:11;13), PLWHA reported that their reason for non-disclosure of HIV status was the fear of rejection by their families and partners or fear of losing their job.

In the study conducted by Niccolai et al (2006:104), in the USA, partner sero-status (HIV negative or unknown) and partner type (casual) are significantly associated with increased likelihood of non-disclosure at odds ratio (OR) 3.3; in other words, having a casual sexual partner who is HIV negative or has unknown HIV status is associated with non-disclosure. Deribe et al (2008), also observed that PLWHA who did not know their partners' HIV status were 98% less likely to disclose their HIV status to sexual partners.

Moreover, in a qualitative study conducted by Ujiji et al (2010:5;7), in Kenya, HIV positive pregnant women reported that they did not want to disclose their HIV status in order to maintain the possibility of being in a relationship. The pregnant women also reported they did not disclose their HIV status to ensure that they could be in a relationship with another man in case the current relationship did not last.

Considering the actual percentages of the reasons for non-disclosure of positive HIV status among PLWHA; in the Ethiopian study by Deribe et al (2008), the following reasons and frequencies were observed for non-disclosure: fear of anger by partners (20%); fear of abandonment by partners (17%); fear of getting partner worried (9%); fear of accusation of infidelity (7%); fear of physical abuse (5%) and fear of being murdered by partner (4%). From the same study, factors related to stigma and discrimination accounted for 79% of non-disclosure of HIV status. In another Ethiopian study by Gari et al (2009:13), fear of abandonment, fear of break-up in the relationship (14.3%) and fear of being stigmatized were cited by the HIV positive women for non-disclosure of their HIV status. Also, in study conducted by Kadowa and Nuwaha (2009:28), in Uganda, non disclosure of HIV status due to fear of divorce and physical violence was 42% (58 of 139), fear of discrimination 29% (40 of 139), fear of rumour mongering 21% (29 of 139), fear of accusation of infidelity 23% (32 of 139) and those who felt there was no need to disclose their HIV status were 8% (11 of 139). In a South African study by Wong et al (2009:218), 45% of PLWHA did not disclose their HIV status due to the need for privacy of their status, 15% feared rejection and 10% for fear of physical abuse.

Unfortunately, these fears or risks of disclosure of HIV sero-status can lead to loss of opportunities for the prevention of new infections and the ability to access appropriate care, treatment and support services for those who are in need of them (Taraphdar et al, 2007:280).

2.2.8 Outcomes of disclosure

Generally, disclosure of HIV status to sexual partners in both the developed and developing countries is associated with increased social support, acceptance, kindness, decreased anxiety and depression and strengthening of relationships (WHO, 2004:2). In a South African study, a majority of HIV positive women reported receiving material and emotional support from people to whom they had disclosed their HIV positive status (Norman, et al, 2007:1778).

In a study by Taraphdar et al (2007:280) in India, positive outcomes such as kindness, acceptance and understanding were observed among 87.5% of PLWHA who disclosed. Also in the South African study conducted by Norman et al (2007:1778), the majority, 94% (15 of 16) of the PLWHA who disclosed their HIV status received both material and emotional support from their sexual partners and family. In another South African study conducted by Wong et al (2009:220), PLWHA experienced increased social support from both sexual partners and other people to whom disclosure was made. In this same study, 82% of the PLWHA asked their partners to take an HIV test, 81% decided to have sex with only 1 partner, 64% used condoms at every sexual encounter ($p<0.001$), 56% decreased number of sexual partners ($p<0.05$), 59% used condoms more frequently ($p<0.01$) and 20% abstained from having sex, as an outcome of disclosing their HIV status. Similarly, risk reduction behaviour, partner testing, increased care-seeking behaviour, anxiety relief, increased sexual communication and motivation to plan for the future, were among the positive outcomes of disclosure observed in the Ugandan study conducted by King, Katuntu, Lifshay, Packel, Batamwita, Nakayiwa, Ahang, Babirye, Lindkvist, Johansson, Mermin and Bunnell (2008:232). Additionally, in the French study by Brou et al (2007:1915), 82.1% of PLWHA who disclosed their HIV status to sexual partners reported positive reaction that is; their partners were understanding and provided moral support.

On the other hand, negative outcomes of HIV status disclosure have been observed among PLWHA who disclosed their HIV status. In the South African study by Norman et al (2007:1778), 38% (*f*=6; n=16) of HIV positive women who disclosed their HIV status to sexual partners, reported experiencing negative outcomes. While in the study by Medley et al (2004:300;302), 4% - 28% of HIV positive women who disclosed their HIV status faced negative outcomes such as, rejection and abandonment by people to whom disclosure had been made, loss of economic support, blame, emotional abuse, discrimination and disruption of family relationships. In the study conducted by Taraphdar et al (2007:280) in India, 11.5% (*f*=3; n=26) of men and 16.6% (*f*=1; n=6) of women reported negative outcomes of HIV disclosure such as blame, abandonment, anger, violence, stigma and depression. Moreover, in an Ethiopian study by Gari et al (2009:11), 59.3% of HIV positive women with regular sexual partners and 66.7% of HIV positive women with non-regular sexual partners, experienced negative partner reactions after disclosure of their HIV status to them.

In Sub-Saharan Africa, 3.5 -14.6% of women who disclosed their HIV status to sexual partners are violently abused especially those in sero-discordant relationships compared to 0.4 - 4% of HIV positive women who disclose their HIV status to sexual partners in the USA (WHO, 2004:2). Even in the French study by Brou et al (2007:1915), 17.9% of PLWHA who disclosed their HIV status to sexual partners experience negative reactions from their sexual partners and this included: blame 4%

(*f*=10; n=250), 0.4% (*f*=1; n=250) physical violence, 2.4% (*f*=6; n=250) ended their relationship and partners of 2% (*f*=5; n=250) of PLWHA did not believe the HIV positive result.

In another study conducted by Cloete et al (2010:12), in Cape Town, South Africa, some PLWHA reported being isolated and forced to use separate kitchen utensils and keeping in "their own rooms", as a result of disclosure of their HIV positive status. In the same study, some women experienced divorce, some were ejected from home or were even subjected to domestic violence, and this was especially the case for women who were financially dependent on male partners.

2.2.9 Disclosure and age

In a West African study conducted by Ndiaye, Boileau, Zunzunegui, Koala, Ag-Aboubacrine, Niambia, Nguyen and Kashed (2008:43), a significant positive association was observed between disclosure of HIV status and older age among HIV positive men. Also in a South African study by Wong et al (2009:218;220), disclosure of HIV status among PLWHA was significantly related to older age ($p<0.01$), and PLWHA of younger age were less likely to disclose their HIV status to sexual partners and other people.

Taraphdar et al (2007:280), in India, observed that HIV positive persons 30 years and older were more likely to disclose their HIV status to their sexual partners (75%) compared to 33.3% of PLWHA who were less than 30 years old ($p<0.005$). In the study by Kadowa and Nuwaha (2009:29) in Uganda, it was observed that PLWHA who were 25 years of age and older were more likely to disclose their HIV status than those less than 25 years of age (COR, 2.78;95%CI, 0.91-2.54). Similarly, in the USA study by Emlet (2005:12), adults 50 years and above were significantly more likely (57.9%) to disclose their HIV status to their children as compared to younger adults (21-39 years), at 31.8%. Observation was also made in the same study that the 50 years and above age group of PLWHA disclosed their HIV status less frequently to nurses, lovers/partners, HIV negative friends, neighbors, casual friends, church members, dentists, and mental health clinicians. Spire et al (2005:1431), in a French study, observed that being an older PLWHA (50 years and above) was significantly positively associated with non-disclosure of HIV status (AOR, 3.8; 95% CI, 1.8-7.7).

Nachega et al (2005:198), in a South African study observed in a multivariate analysis that disclosure of HIV status among PLWHA was not significantly associated with age of the PLWHA.

2.2.10 Disclosure and literacy level

Literacy levels play an important role in the perception and ability of PLWHA to cope with being HIV positive (Garko, 2007:125).

Although the definition of literacy is not clear from the literature reviewed for the study conducted by Taraphdar et al (2007:280), 85.7% of people living with HIV/AIDS who were literate disclosed their HIV status to either a sexual partner or someone else. In the West African study by Ndiaye et al (2008:43), a significant positive association was observed between disclosure of HIV status and being literate for HIV positive men. In another study by Akani and Erhabor (2006:88), in Nigeria, better educated PLWHA (tertiary education) were more likely to disclose their HIV positive status, and the ratio of disclosure to non disclosure for this group was 10:1.0. Also in the French study by Bouillon et al (2007:S91), it was observed that PLWHA with lower education (below secondary level) were less likely than those with higher education (higher institution/ university) to disclose their HIV status. However, this relationship was not statistically significant (AOR, 0.28; 95% CI, 0.08 -1.01) at p =0.052.

In comparison, Deribe, Woldemichael, Njau, Yakob, Biadgilign and Amberbir (2010:35), in their Ethiopian study observed that HIV positive women with secondary level education and above were 77% less likely to disclose their HIV status compare to women with primary level education or lower (AOR, 0.23; 95%CI, 0.08 – 0.69).

On the other hand, Nachega et al (2005:198) in their South African study observed that disclosure of HIV status was not significantly associated with the level of education of PLWHA. Similarly, Kadowa and Nuwaha (2009:29), in their Ugandan study found no significant association between disclosure of HIV status and education level of the PLWHA. Also in the Ethiopian study by Gari et al (2009:13), a non-significant association was observed between HIV positive women's level of education and disclosure of their HIV status.

2.2.11 Disclosure and economic/employment status

There is increasing recognition that individual actions to improve lifestyle or health status are likely to be constrained by the environmental and socio-economic context in which they take place (Croucher, Myers, Jones, Ellaway and Beck, 2007:v).

A South African study conducted by Makin, Forsyth, Visser, Sikkema, Neufeld and Jeffery (2008:912) observed a significantly positive association between being financially less dependent on a sexual partner and disclosure of HIV status among HIV positive pregnant women (AOR, 0.46; 95%CI, 0.25 – 0.85). In yet another South African study by Wong et al (2007:220), it was observed that PLWHA of a lower socio-economic status were less likely to disclose their HIV status compared to those of higher socio-economic status. The WHO (2004:2) reported a similar finding when they observed that PLWHA may not disclose their HIV status to, especially sexual partners due to the fear of losing financial support from their partners.

The above findings suggest that HIV positive persons with a higher socio-economic/income status would be more likely to disclose their HIV status to sexual partners than those of lower socioeconomic/income status. However, Taraphdar et al (2007:280), in an Indian study, Nachega et al (2005:198), in a South African study and Kadowa and Nuwaha (2009:31), in a Ugandan study,, observed that the socioeconomic status of PLWHA has no significant association with disclosure of HIV status. Also in the study by Gari et al (2009:13), in Ethiopia, socio-economic status of HIV positive women was observed to have no significant association with disclosure of their HIV status.

2.2.12 Disclosure and area of residence

There is recently an increasing recognition that place and space have an impact on human health and well-being (Croucher et al 2007:v). Norman et al (2007:1780), suggest that disclosure of HIV status by PLWHA in both urban and rural communities (settings), has important implications for how PLWHA are able to respond to the impacts of HIV/AIDS on their lives and livelihoods.

In a South African study conducted by Gaede, Majeke, Modeste, Naidoo, Titus and Uys (2006:365), in Kwa-Zulu-Natal, 71% of HIV positive women living within an urban area were observed to have disclosed their HIV status to someone compared to 49% of HIV positive women living in the rural area; in other words, urban dwelling HIV positive women were observed to disclose their HIV status more readily than the rural dwelling counterparts. In yet another South African study by Lurie et al (2008:490), 90% of HIV positive women living in the urban sites disclosed their HIV status compared to 60% of HIV positive women living in the rural setting.

It could be assumed from the above findings that due to the variety of health care and support outlets and services more common to urban settings as opposed to most rural settings, HIV positive persons who live in urban areas would be more likely to disclose their HIV status than their counterparts in the rural areas.

In comparison, Taraphdar et al (2007:280), in their Indian study, observed that one’s residence (rural or urban) has no effect or association with disclosure of HIV status among people living with HIV/AIDS.

2.2.13 Disclosure and gender

In Sub-Saharan Africa, women constitute 60% of people living with HIV and unfortunately the norms related to femininity do prevent, especially, young women from accessing HIV information and services. Worse still, women who fear or experience gender violence, often lack the power to ask their partners to use condoms or refuse unprotected sex. Consequently the fear of gender violence can prevent women from learning and/or disclosing their HIV status and accessing treatment (WHO, 2009a).

In a French study conducted by Spire et al (2005:1431), it was observed that being female was positively associated with non-disclosure of HIV status among PLWHA (AOR, 2.0; 95%CI, 1.1-3.7).

In comparison, in the study conducted by Bouillon et al (2007:S91), in France, disclosure of HIV status to sexual partners and others was positively associated with being female (AOR, 2.04; 95% CI, 1.24-3.36). In the Indian study by Taraphdar (2007:280), 100% (6 of 6) female disclosed their HIV status to sexual partners compared with 65% (26 of 40) of males. In the study by Akani and Erhabor (2006:88), in Nigeria, females were also more likely to disclose their HIV positive status (59.7%) than their male counterparts (40.3%) (p=0.003).

However, in a Ugandan study by Kadowa and Nuwaha (2009:29), no significant association was observed between disclosure of HIV status and gender among PLWHA. This is supported by Deribe et al (2010:38), who also found no significant difference in HIV disclosure rates among HIV positive men and women.

2.2.14 Disclosure and marital status

King et al (2008:232) in a Ugandan study reported a significant positive association between disclosure of HIV status and being married, among PLWHA. In an Ethiopian study by Gari et al (2009:11), HIV positive women in cohabiting relationships were less likely to disclose their HIV status to sexual partners compared to married women (AOR, 0.16;(95%CI, 0.04-0.60). Also in a Nigerian study by Akani and Erhabor (2006:88), married PLWHA were more likely to disclose their positive HIV status than unmarried PLWHA. In yet another study conducted by Iliyasu, Abubakar, Kabir, et al (2009:76), in Nigeria, 66.9% (143 of 214) of married PLWHA disclosed their HIV status to their spouses. Furthermore, in an Indian study, 82.3% of married men disclosed their status to their sexual partners other than their wives, whereas unmarried men (6 of 6;100%) were more unlikely to disclose their HIV status to would be sexual partners compared to 66.7% (4 of 6) separated/divorced men (Taraphdar et al, 2007: 281). In addition, in the Ethiopian study by Deribe et al (2010:35), HIV positive women who were not married were 92% less likely to disclose their HIV status compared with the married (AOR, 0.08; 95%CI, 0.01 – 0.77). Similarly, Makin et al (2008:912), in their South African study observed that being married had a significant positive association with disclosure of HIV status to sexual partners among PLWHA (AOR, 2.32; 95%CI, 1.20 – 4.47).

The findings of the above studies suggest that HIV status disclosure is more likely to be done by married PLWHA than unmarried PLWHA, this generally being true for disclosure to spouses. However, the Ugandan study by Kadowa and Nuwaha

(2009:29), observed that PLWHA who were not married were more likely to disclose their HIV status compared to those who were married (COR, 2.80; 95%CI, 1.67- 4.69).

2.2.15 Disclosure and religion

HIV affects the entire being of a person; socially, physically and emotionally, and for many affected people, the way to treat an emotional problem (such as HIV) is through religion and spirituality. It is thought that religion and spirituality helps an HIV infected person to live their lives, interpret the circumstances around them, and apply what they have learned to their new life with HIV (Cichocki, 2007); one aspects of this new life with HIV is disclosure.

In a Tanzanian study by Watt, Maman, Jacobson, Laiser and John (2009:392), although most PLWHA reported that their personal faith (spirituality) had positively influenced their experiences with HIV, only a few disclosed their HIV status to their religious communities. Also, in a French study by Bouillon et al (2007:S91), it was observed that although most PLWHA in that study reported strong religious beliefs, few (10.9%) disclose their HIV status to priests and even less (3.3%) to traditional healers. In another French study by Préau, Bouhnik, Roussiau, Lert and Spire (2008:523), lack of disclosure of HIV status was more frequent among PLWHA who considered religion as an important aspect of their life. A multivariate analysis in this study showed that religion had an independent significant positive association with non-disclosure to regular sexual partners.

However, in the study by Kadowa and Nuwaha (2009:29), in Uganda, it was observed that disclosure of HIV status among PLWHA had no significant association with their religious beliefs. Similarly, Brou et al (2007:1916), in Abidjan, observed no significant association between religion and women’s HIV status disclosure to sexual partners, among HIV-infected women.

2.3 SEXUAL PRACTICES

2.3.1 Definition

Sexual practices refer to activities associated with sexual intercourse. In broad terms, sexual practices relates the manner in which humans experience and express their sexuality, and this encompasses a wide range of activities such as strategies to find or attract partners, interaction between individuals and sexual contact (The free online dictionary, 2008b; Wordweb online, 2008; Answers.com, 2009).

2.3.2 Sexual practices among PLWHA

Many PLWHA are not able to moderate their lifestyles due to the fear of having others discover that they are HIV-positive, which - for some women - could also result in gender-based violence. In some cases, PLWHA continue to have unprotected sex with their sexual partners, even though they are aware of the risk of infecting them, rather than using condoms, and have their partner discover their HIV-positive status (Strebel et al, 2009:13). In a study conducted by Traore (2005:61), in Côte d'Ivoire, 56.5% of PLWHA reported that knowledge of their HIV positive status did not change their lifestyles, and among those who reported change of lifestyle due to knowledge of their HIV status, only 34.3% reported safe sex practices. In another qualitative study conducted by Garko (2007:125), in Nigeria, a majority of female PLWHA was not well informed about the issue of safe sex and planned pregnancy. The major problem among these women was their inability to decide on when to have sex, a role which appears to be exclusively preserved for men.

In a South African study, 90% of men and 81% of women living with HIV were observed to be sexually active 3 months prior to the study. It was also reported that 40% of men and 18% of women had 2 or more sexual partners during the last 3 months period prior to the study. In the same study, 50% of men and 32% of women living with HIV had HIV negative partners; and 39% of men and 39% of women had sexual partners with unknown HIV status (Simbayi et al, 2007:31). In a Nigerian study conducted by Iliyasu, Abubakar, Kabir, Babashani, Shuaib and Aliyu (2009:76), among PLWHA, 70.6% (60 of 85) males and 69.4% (177 of 255) females were sexually active within 6 months prior to the study. Also in an Ethiopian study, 69.2% of PLWHA were observed to have had sex with HIV positive partners; 15.4% with HIV negative partners and 15.4% with partners of unknown HIV status (Deribe et al, 2008:5). In yet another study by Traore (2005:63), in Côte d'Ivoire, of the 56.7% of PLWHA with regular sexual partners, 24% had partners who were HIV negative, while among the 16.9% of PLWHA with casual sexual partners, a majority (55.2%) reported that they did not know the HIV status of their sexual partners.

Similarly, in another study by Gaede et al (2006:367), in South African, two thirds of the sexually active PLWHA who used condoms, reported irregular condom use. Taraphdar et al (2007:281) in their study, in India, observed that 43.5% (*f*=20; n=46) PLWHA used condoms; an equal number (*f*=20; n=46; 43.5%) did not use condoms and 12.8% practiced abstinence. In addition, a Cameroon study conducted by Dia, Marcellin, Bonono, Boyer, Bouhnik, protopopescu, Koulla-Shiro, Carrieri, Abe, Spire & the EVAL Study

Group (2010:151), 35.3% of sexually active PLWHA reported inconsistent condom use with steady partners of either HIV negative or unknown HIV status, 3 months prior to the study. Also in the French study by Spire et al (2005:1431), 56% of PLWHA had steady partners. Of the PLWHA with steady sexual partners, 39% had a sexual partner who was HIV negative or had unknown HIV status, while 14% had a steady relationship with a sexual partner who was HIV positive. Among those in steady sexual relationships with sexual partners who were HIV negative or had unknown HIV status, only 30% reported consistent condom use. And, in the South African study by Kiene et al (2006:1782), 5.6% (*f*=, n=71) of the sexually active PLWHA reported having had sexual intercourse with more than one sexual partner.

2.3.3 Contraceptive use among PLWHA

The use of contraceptives has two main benefits: firstly, it helps to prevent unplanned pregnancies and secondly, it helps to protect against sexually transmitted diseases (STDs), including HIV. Therefore, for those who choose to be sexually active, contraception helps to reduce, though not eliminate, the risk of either pregnancy and/or STDs (Cates, 2006:1) The barrier methods (condoms) confer both benefits of preventing unintended/unplanned pregnancies and protection against acquiring or transmitting sexually transmitted infections (including HIV), from an infected individual to another.

For HIV-infected women especially, issues related to contraception and HIV are complex. Some of the challenges for the HIV positive women include:

- Firstly, the need to choose a contraceptive method that matches her fertility desires, in view of her HIV infection status (Cates, 2006:4). Some HIV positive women choose to conceive despite the chances of a poor pregnancy outcome. For this category of women, consistent and correct condom use could offer the best protection against acquiring HIV/STIs and preventing transmission of HIV to sexual partners (during the period when they are not trying to conceive). However, HIV positive women who choose to stop child bearing, do so for various reasons such as; worry that pregnancy may further compromise their health, concern about transmission of HIV to the children they might conceive and fear of leaving orphans as a result of HIV diseases, particularly if treatment is not sought. For HIV positive women who do not wish to become pregnant, the dual method (condom use for prevention of infection and another contraceptive method) would be the more effective method of contraception. While for those who decide against child bearing, female sterilization (tubal ligation) may be a good option.

- Secondly, some of the contraceptives are capable of changing her HIV infectivity (Cates, 2006:4). The current research findings are inconsistent regarding the use of oral contraceptives and increased HIV infectivity/transmission of HIV to uninfected sexual partners. However, of all the available contraceptives, the consistent and correct use of the male condom although not suitable for all users, has been shown to protect against HIV/STIs as well as unplanned pregnancies (Family health international, 2011).
- Thirdly, some contraceptive methods have the potential of altering her HIV disease progression (Cates, 2006:4). A study conducted in Mombasa, Kenya suggests that the use of oral contraceptives may accelerate HIV-related deterioration of the immune systems and thus speed the natural course of the infection (Sagar, Lavreys, Beaten, Barbra, Kischorchandra, Bhavna, Joan and Julie, 2003:12921-12926).
- Lastly, the safety profile, side effects, or efficacy of some contraceptive methods may be altered/affected especially with concomitant use of antiretrovirals (Cates, 2006:4). Oral contraceptives may interact with in complex ways with especially ARVs in the classes; protease inhibitors and non-nucleoside reverse transcriptase inhibitors (see section 2.44 for ARV classification of this chapter). The resultant effect of these interactions may either increase or decrease the levels of the oral contraceptives in blood thus leading to oral contraceptive failure or ARV failure, or medication toxicity, depending on whether the drug levels are lowered or raised by the interacting drug (AIDS Education and Training Centers National Resource Center, 2007).

In a qualitative study conducted by Garko (2007:125) in Nigeria, a majority of PLWHA were not aware of the conventional family planning methods. A few of PLWHA knew about the male condoms and a much smaller number, knew about the female condoms. In a study conducted by Gari et al (2009:13), in Ethiopia, 26% of HIV positive women reported unintended pregnancies mainly due to non-condom use. In the same study, educating sexual partners of the PLWHA on use of family planning methods, particularly condom use, to prevent unplanned pregnancies and effects of unplanned pregnancies, was advanced as a key recommendation of this study.

With specific regard to the general use of contraceptives among PLWHA, a Ugandan study by Andia, Kaida, Maier, Guzman, Emenyonu, Pepper, Bangsberg and Hogg (2009:340), observed that 85% of those who were sexually active used non-barrier contraceptives, and 84% of them used barrier methods (condoms). In a Nigerian study conducted by Iliyasu et al (2009:77), 85 of 335 (25.3%) of PLWHA used different methods of contraception, and among those who used some method of contraception, 19.4% (*f*=65; n=335) used condoms, 2.4% (*f*=8; n=335) used oral contraceptive pills and 0.6% (*f*=2; n=335) abstained from sex. Also in a Ugandan study by Bunnell et al (2008:621), 24% of HIV positive women were using contraceptives, and among the HIV positive women using contraceptives, 78% used hormonal injection, 23% used oral contraceptives and 8% had had tubal ligation. In the same study, 49% of the HIV positive women reported that their last (recent) pregnancy was unplanned.

Considering especially condom use, Bunnell, Opio, Musinguzi, Kirungi, Ekwaru, Mishra, Hladik, Kafuko, Madraa and Mermin (2008:621) in a Ugandan study observed that 49% of PLWHA reported non-condom use at last sexual encounter because they trusted their partners were not infected by HIV. However, only 9% of the 49% knew the HIV status of all their sexual partners. In another study by Traore (2005:64), in Côte d'Ivoire, PLWHA with casual sex partners, 70.7% reported more condom use than those with regular sexual partners, 62.8%. Also in the French study by Spire et al (2005:1431), of the 3% study sample who did not disclose their HIV status to steady partners, 2% reported consistent condom use while 1% did not use condoms at all. Even in an Ethiopian study by Gari et al (2009:13), 31% of HIV positive women used condoms always and 68% reported condom use in the most recent sexual intercourse with their regular sexual partner. While, in a Guyana study, nearly half of the 70% of females and 60% of males who were sexually active, reported intermittent or non-condom use (Florendo et al, 2006).

Regarding the reason for non-condom use, in a French study by Spire et al (2005:1431), 61% of PLWHA reported that non-condom use was a shared decision between them and their sexual partners, while 43% reported partner refusal to use a condom. In a Nigerian study by Garko (2007:125), some male PLWHA did not like using condoms because they felt condoms “remove the pleasure of sex”, some do not believe in condoms while others feared that the condoms would go missing inside the woman. In the same study, the female condom which was known by a few PLWHA was reported to be unpopular due to its high cost, unavailability and even those who claimed to know them, did not know how to use them. In yet another study by Bunnell et al (2008:621), in Uganda, 18% of PLWHA reported that they did not like using condoms, 13% reported that partners insisted on not using condoms, 7% did not use condoms because they lacked knowledge about condoms while 5% did not use condoms because condoms were not accessible to them.

Considering the desire to have children (fertility) among PLWHA, in a Nigerian study by Iliyasu et al (2009:77), 167 (65.5%) of females and 52 (61.2%) of males expressed desire to have more children, and out of these, 16 (7.3%) wanted to have one child, 106(48.4%) wanted to have two children and 86 (40.2%) wanted to have 3 and more children. Similarly, in another qualitative study conducted by Garko (2007:125), in Nigeria, most PLWHA expressed the desire to have children especially those who did not already have children. Also in the study by Chama, Morrupa and Gashau (2007:814), it was observed that although 26.3% of PLWHA had no living child, 71.4% expressed a desire to have children.

2.3.4 Sexual practices and age

In a South African study by Lurie et al (2008:487), sexual activity and consistent condom use was positively significantly associated with being of younger age less than

45 years for HIV positive males and females compared to those above 45 years of age ($p<0.001$). In yet another South African study by Nachega et al (2005:198), condom use was observed to decrease with increasing age; in other words, the older the person, the less likely they were to use condoms. Kiene et al (2006:1783), in their South African study found that practicing risky sexual behaviour had no association with the age of the PLWHA. Similarly, in the study conducted by Dia et al (2010:151), in Cameroon, a bivaraite analysis revealed that age of PLWHA had no significant association with inconsistent condom use ($p=16$).

The study conducted by Chin-Hong, Deeks, Liegler, Hagos, Krone, Grant and Martin (2005:468;470), in the USA, indicated that 60% of PLWHA of 35 years of age and younger, were associated with practicing unprotected intercourse with an HIV negative or unknown status partner (odds, 14.5). Also in a Côte d'Ivoire study by Diabaté et al (2008:155), younger age (40 years and below) had a positive association with practicing unprotected sex (OR, 1.40; 95%CI, 1.17- 1.67).

2.3.5 Sexual practice and literacy level

In the South African study by Lurie et al (2008:487), higher rates of condom use were observed with regular partners among people with higher education levels (grade 8 and above) (OR, 1.39; 95%CI, 1.1-1.8). Of the literate respondents according to this study's definition, 83.9% of HIV positive men and 79.7% of HIV positive women in urban settings, and 58.9% of HIV positive men and 51.4% of HIV positive women in rural settings used condoms with their regular sexual partners. In comparison, 74.6% of illiterate HIV positive men and 61.8% of illiterate HIV positive women in urban areas and 49.1% of illiterate HIV positive men and 40.3% of illiterate HIV positive women in rural areas used condoms with their regular sexual partners. Similarly, in an Indian study conducted in Kolkata among men who have sex with men, safer sexual practices like using a condom or having fewer partners were observed more among the literate respondents than the illiterate respondents, at $p < 0.05$ (Deb, Dutta, Desgupta and

Biswas, 2009:209). In yet another study conducted by Dia et al (2010:152), in Cameroon, lower education level (primary) had a significant positive association with inconsistent condom use among PLWHA (OR, 1.58; 95%CI, 1.16 – 2.14) (p=0.004).

The above study findings suggest that literate PLWHA may be more likely to use condoms and practice safer sex, than illiterate PLWHA. However, no significant association was observed between condom use and level of education in the South African study conducted by Nachega et al (2005:198). Similarly, in another South African study by Kiene et al (2006:1783), practicing risky sexual behaviour had no significant association with the education level of the PLWHA.

2.3.6 Sexual practices and economic/employment status

Several authors argue that women's economic vulnerability and dependence on men increases their vulnerability to HIV by constraining their ability to negotiate the conditions around sex, such as sexual abstinence, condom use and multiple sexual partners, which increase their risk of HIV infection (Kim, Pronyk, Barnett and Watts, 2008:S57).

In the South African study conducted by Nachega et al (2005:198), condom use was observed to increase among PLWHA with increasing socio-economic status of the PLWHA. Similarly, in another South African study by Lurie et al (2008:487), higher household income had a significant positive association with consistent condom use for both male and female PLWHA, and having a current sexual partner especially for women. In another study by Bouhnik et al (2007:S59-60), for HIV positive men, practicing unsafe sex had a significant positive association with being in a difficult (low) financial situation (AOR, 1.3; 95%CI, 0.7 – 2.5) (p=0.047). Similarly, for HIV positive women, practicing unsafe sex, was independently positively associated with being in a difficult (low) financial situation (AOR, 2.9; 95%CI, 1.6 – 5.5) (p=0.001).

However, in a study conducted by Dia et al (2010:151), in Cameroon, a bivariate analysis revealed that income level or economic status of PLWHA had no significant relationship with inconsistent condom. Similarly, a South African study by Kiene et al (2006:1783), observed that practicing risky sexual behaviour had no association with the socio-economic and employment status of the PLWHA. Also in a U.K study conducted by Williamson, Dodds, Mercey, Hart and Johnson (2008:1067), employment status had no significant association with having 2 or more unprotected anal intercourse (AOR, 0.89; 95%CI, 0.68 - 1.16) and having unprotected anal intercourse with casual partners (AOR, 1.07; 95%CI, 0.81 - 1.33).

2.3.7 Sexual practices and area of residence

In a South African study, consistent condom use was observed among HIV positive persons in an urban area (81% of men) and (78% of women) compared to 52% of men and 48% of women in a rural area (Lurie et al, 2008:489). In another study conducted in Cameroon by Dia et al (2010:152), a significant positive association was observed between PLWHA residence (rural) and inconsistent condom use (OR, 1.58; 95%CI, 1.06 -3.32) (p=0.02). Also in the Ugandan study conducted by Bunnell et al (2008:621), PLWHA who lived in urban areas were twice as likely to report condom use than the PLWHA who lived in rural areas (AOR, 2.0; 95%CI, 1.3 – 3.0).

From the above findings, it could be assumed that due to the variety of preventive and safer sex information sources and services available in most urban settings as opposed to the rural settings, HIV positive persons who live in urban areas would be more likely to exhibit safer sex practices than their counterparts in the rural areas.

However, a South African study conducted by Gaede et al (2006:365), observed no significant differences with regard to sexual behaviour and practices among urban and rural HIV positive women.

2.3.8 Sexual practices and gender

The key role gender plays in understanding and addressing HIV/AIDS, has long been recognized. However, the prevalent notions of masculinity in many parts of the world that equate being a man to dominance over women, sexual conquest and risk-taking are associated firstly, with less condom use; secondly with increased number of sexual partners including more casual sex partners; thirdly with increased incidence of sexually transmitted infections and fourthly, with increased frequency in sexual activity (Greig, Peacock, Jewkes and Msimang, 2008:S35).

Gender-based violence against women is not only a potential risk factor for women with regard to HIV transmission, but also increases the likelihood of high-risk behaviours (such as non-condom use, coerced sexual intercourse and multiple partners), which perpetuate the spread (transmission) of HIV (Cloete et al, 2010:17 ; WHO, 2009a; Andersson, Cockcraft and Shea, 2008:S75). Cloete et al (2010:14), argue that the complex link between gender-power relations, intimate (especially female) violence and myths/cultural notions about condoms, limit the use of condoms - especially in Sub-Saharan Africa.

In a Ugandan study conducted by Bunnell et al (2006:88), 65% of male PLWHA and 59% of female PLWHA in steady relationships had had sexual intercourse 3 months prior to the study compared to 13% of male and 9% of female PLWHA in casual relationships. In this same study, 45% of male and 44% of female PLWHA reported having unprotected sex with at least 1 sexual partner 3 months prior to the study. Also in a South African study conducted by Fougelberg, Karlström, Veriava, Ive and

Anderson (2008:14), among PLWHA, 25% of men and 45% of women had unprotected sex with either a regular or casual sexual partner. In another Ugandan study conducted by Bunnell et al (2008:619), being a male among PLWHA had independent positive association with having a sexual partner “outside” marriage (AOR, 8.2; 95%CI, 3.5 – 19.3).

In the South African study by Nachega et al (2005:198), no significant association was observed between gender and condom use among PLWHA. This finding is supported by another South African study by Kiene et al (2006:1783), which found that practicing risky sexual behaviour had no association with the gender of the PLWHA.

2.3.9 Sexual practices and HIV status

Regarding sexual practices and knowledge of the HIV status of sexual partners among PLWHA, in the study by Bunnell et al (2008:621), in Uganda, condom use was positively associated with PLWHA’s knowledge of their HIV status and that of their sexual partners. The odds of condom use among PLWHA who knew their sexual partners’ HIV status was 2.3 times higher than among those who did not know their partners’ HIV status (AOR, 2.3; 95%CI, 1.2 – 4.3). Also in a London study conducted by Elford, Ibrahim, Bukutu and Anderson (2007:S66), 6.6% (*f*=41; n=623) of PLWHA reported having sex with an HIV positive sexual partner while 5.1% (*f*=32; n=623) reported having had sex during the 3 months prior to the study with a sexual partner of either a known negative status or an unknown status. Furthermore, a Thai study, observed that male PLWHA were more likely to know their sexual partner’s HIV status (94%) than female PLWHA (83%). In addition, among PLWHA, 67% of males and 61% of females had sexual partners who were HIV positive. In this same study, 87% of those who knew their sexual partners’ HIV status and 78% of those who did not know their sexual partners’ HIV status reported that they always used condoms, while 11% did not use condoms at all (Punpuing & Richter, 2009:2-3). Similarly, in the South African study by Kiene et al (2006:1782), 39.2% (*f*=67; n=171) of sexually active PLWHA reported having had unprotected sexual intercourse with sexual partners of unknown HIV status or those perceived to be HIV negative. In the same study, it was further observed that having an HIV positive sexual partner had a significant positive association with practicing unprotected sexual intercourse.

The above study findings seem to suggest that PLWHA may be more likely to use condoms when they know the HIV status of their sexual partner. However, in the French study by Bouhnik et al (2007:S59), the lack of knowledge of a sexual partner's HIV status for male PLWHA had no association with practicing unsafe sexual intercourse (p=0.236), while the lack of knowledge of a sexual partner's HIV status for female PLWHA had a significant positive association with practicing unsafe sexual intercourse.

With regard to the duration of HIV status, in the French study by Bouhnik et al (2007:S59), the time since diagnosis of HIV among PLWHA had a significant positive association with practicing unsafe sex, and this was the case for shorter time from diagnosis of HIV. However, in the Cameroonian study conducted by Dia et al (2010:151), it was observed in a multivariate analysis that the time (duration) since HIV diagnosis had no significant association with inconsistent condom use among PLWHA. Similarly, in the South African study by Nachega et al (2005:198), they observed that sexual practice and duration of knowledge of HIV status is not associated with condom use among PLWHA.

2.3.10 Sexual practices and type of partner

Relf, Bishop, Lachat, Schiavone, Pawhowski, Bialko, Boozer and Dekker, 2009:293), in their USA study, observed that HIV positive men, after being diagnosed with HIV, "making choices" about intimacy and sexual relation was a crucial aspect of maintaining overall health, not only for self but also for their sexual partners. Generally, considering the type of sexual partner of PLWHA, in a South African study by Nachega et al

(2005:198), 50% of PLWHA had steady sexual partners while 30% did not at the time of the study have sexual partners. Also, in a Ugandan study, among PLWHA who had had sex with 1 sexual partner 3 months prior to the study, 37% did so with regular sexual partners while 25% had sex with a casual sexual partner (Bunnell et al, 2006:88). Taraphdar et al (2007:280) in their Indian study also observed that besides having a steady sexual partner, being in shorter term relationships were associated with engaging in casual sexual practices among PLWHA as opposed to being in longer relationships.

With specific regard to PLWHA sexual practices and partner type, in a Côte d'Ivoire study by Traore (2005:63), 35% of PLWHA with regular sexual partners and 28% of PLWHA with casual sexual partners reported inconsistent or no condom use at all. Also in the Ugandan study by Bunnell et al (2008:619), unprotected sex was more frequent with spouses (84%) and 13% with other steady sexual partners. In yet another study conducted by Dia et al (2010:152), PLWHA in a couple (steady) relationship had a significant positive association with inconsistent condom use (OR, 1.75; 95%CI, 1.20 – 2.56) (p=0.004). Also, in a London study conducted by Elford et al (2007:S66-S68), 14% (86/623) of black African heterosexual men and women reported practicing unprotected intercourse 3 months prior to the study with three to four percent (3-4%) of the 14% reported having had unprotected sex with a casual sexual partner. Similarly, in the French study by Bouhnik et al (2007: S59-60), 26% of male PLWHA and 34% of female PLWHA had unsafe sexual intercourse with steady partners (p=0.024). In the same study, having a casual sexual partner had no association with practicing unsafe sexual intercourse. In addition, Bateganya et al (2005:764-765), in a Ugandan study observed consistent condom use in 57% of PLWHA with a spouse, 65% with a regular sexual partner, 85% with a casual sexual partner and 85% with a commercial sex partner.

The findings in the above studies suggest that PLWHA may be more likely to practice unsafe (risky) sex with steady (regular) sexual partners than with casual sexual partners. However, in the South African study by Lurie et al (2008:480), consistent condom use was associated positively with having a steady or regular sexual partners as opposed to being in casual sexual relationships. While in another South African study by Kiene et al (2006:1782), having a casual sexual partner had a significant positive association with practicing unprotected sexual intercourse.

2.3.11 Sexual practices and marital status

It was observed in a Ugandan study that married or cohabiting partners were more likely to be sexually active as compared to those with no steady sexual partner. This was especially true for those who were widowed. Risky sexual behavioural practices before and after commencement of HAART among married or co-habiting couples remained the same at about 85% (Bunnell et al, 2006:89-90).

In another study by Bunnell et al (2008:619-621), in Uganda, condom use was less likely among married HIV positive persons compared to unmarried HIV positive persons (AOR, 0.1;95% CI, 0.0-0.2). In the same study, among married sexually active PLWHA, 86% reported having had sex only with their spouses in the last year prior to the study ($p<0.001$). Considering the most recent sexual act, in the same study, the majority (83%) of PLWHA reported engaging in unprotected sex and of these, 84% were with married or cohabiting sexual partners, 13% with steady sexual partners, and 3% with casual sexual partners.

The findings in the above studies seem to suggest that married PLWHA may be less likely to use condoms (practice safer sex) compared to unmarried PLWHA. In comparison, in a South African study, no association was observed between marital status and condom use (Nachega et al, 2005:198). Similarly, in another South African study by Lurie et al (2006:489), no significant association was observed between condom use and marital status of PLWHA.

2.3.12 Sexual practices and number of partners

Considering number of sexual partners in general among sexually active PLWHA, in a Ugandan study by Bunnell et al (2008:619), among the sexually active HIV-infected adults (77%), 80% reported having only 1 sexual partner. In another study by Bunnell et al (2006:88-89), in Uganda, it was observed that among the sexually active, 92% of the PLWHA had sexual intercourse with only 1 sexual partner. In the same study, PLWHA who had had more than 3 sexual partners at the time and were more sexually active compared to those with less than 3 sexual partners. In a South African study by Kiene et al (2006:1782), 5.6% (*f*=4; n=71) PLWHA reported having more than 1 sexual partner.

Regarding the sexual practices and number of sexual partners, in the South African study by Kiene et al (2006:1782), 30% (*f*=23; n=71) of sexually active PLWHA reported having 1 or more unprotected vaginal or anal sexual encounters 3 months prior to the study, and these unprotected sexual encounters were with different sexual partners. Also in a U.K study, among HIV-positive gay men, the odds ratio of unprotected anal intercourse with 2 or more sexual partners was highest among HIV positive gay men compared to HIV negative gay men (OR, 6.80; 95%CI, 4.39-10.52) (Williamson et al, 2008:1067). In yet another South African study, 79% of PLWHA were reported to have had 1 current sexual partner and 21% of sexually active women reported having 2 current sexual partners (Gaede et al, 2006:365).

The findings of the above studies seem to suggest that PLWHA with 2 and more sexual partners may be more likely to practice unsafe sex than PLWHA with one sexual partner. However, in the French study by Bouhnik et al (2007:S60-61), the number of sexual partners a PLWHA had was observed not to be associated with practicing unsafe sexual intercourse.

2.3.13 Sexual practices and religion

The potential of organized religion to contribute constructively to the reduction of HIV transmission and the care and support of all who are affected stems, among other reasons, from the fact that Christianity and Islam are resolute in proposing high ideals for their followers (adherents), and in requiring sexual abstinence outside marriage, which could be the only absolute way of avoiding the sexual transmission of HIV. Christianity and Islam are also resolute in requiring fidelity within marriage, which apart from the case of a discordant couple, could be the only completely sure way of not becoming HIV infected when practicing sex (Kelly, 2003:2-3). In fact, in a RAND study (2007) HIV positive people who reported that religion was an important part of their lives were likely to have fewer sexual partners and engaged in high-risk behaviour less frequently than other HIV positive persons (RAND, 2007). In the same study, Catholics were less likely than other mainline Christians, non-Christians and non-religious people to report unprotected sex, and less likely to report high-risk sex. Catholics also reported fewer sexual partners than non-Christians. However, in the same study, no statistical difference was observed in sexual activity between Catholics and evangelicals.

Although religion could have a potentially positive contribution to the reduction of HIV transmission, religious systems, practices and organizations also have potential to be an obstacle in dealing with HIV/AIDS and its impacts; for example, the “silence” about AIDS among the professional religious persons as well as the laity for and with whom they work, coupled with the negative connotation of being HIV positive (or having AIDS) with immoral behaviour has contributed extensively to the stigma that so often accompanies HIV/AIDS status (Kelly, 2003:4-5). Due to the fear of being labelled “immoral”, PLWHA may not disclose their HIV status to their sexual partners and continue to practice unsafe sex.

In a Nigerian study conducted by Iwuagwu (2009:87; 90), some HIV positive women reported that cultural/religious beliefs expect them (women) to respond to their husband’s sexual demands. One HIV positive women reported in this study, ”...the matron told me I should not deny him (sex), he is my husband, that if I do (deny him sex), it is a sin rather I should put it into prayer, take it to God”. This statement reflects the intimate influence religious beliefs may have on sexual practices and the implications for HIV transmission among PLWHA, especially if safer sex is not practiced.

2.3.14 Sexual practices and Disclosure

The fear of being stigmatized and/or known to be HIV positive has a number of negative effects, especially regarding lifestyle choices for PLWHA. Most PLWHA are reluctant to disclose their HIV-positive status to their sexual partners’ family members, associates or friends. As a result of this fear, many may continue to engage in risky sexual behaviours (Strebel, Cloete and Simbayi, 2009:10;13).

Simbayi et al (2006:31;33), observed that practicing high risk sexual behaviour was associated with non-disclosure to sex partners, and people who had not disclosed their HIV status were 28 times more likely to have sex partners whose HIV status was unknown. In this same study, 42% of PLWHA had sex with partners they had not disclosed to, and those who did not disclose to sex partners were more likely to be married and to have many sex partners. Similarly, in a study conducted by Parsons et al (2005:S92-93), in New York, PLWHA who inconsistently disclosed and those who did not disclose their HIV status to sexual partners were likely to practice risky sexual behaviour. In the same study, risky sexual practices (unprotected sex) was less likely among PLWHA who consistently disclosed their HIV status to casual sex partners of either negative status or unknown status. In a literature review study by Sullivan (2005:33), in the USA, it was reported that as the number of sexual partners increased, the likelihood of disclosure to all sex partners decreased.

Similarly, in a Uganda study conducted by King et al (2008:232), at TASO-Jinja, 69% of PLWHA disclosed their HIV status to their most recent sexual partners. In the same study, HIV sero-status disclosure among PLWHA was positively associated with increased condom use and knowledge of partner’s HIV sero-status. Also in a South African study by Lurie et al (2006:489), condom use among female PLWHA had a significant positive association with disclosure of HIV status (OR, 1.78; 95%CI, 1.3 – 2.4) ($p<0.001$). In yet another South African study by Wong et al (2009:219), PLWHA who disclosed their HIV status were more likely to make positive sexual behavioral changes (M=2.8/6, SD= 1.5) compared to those who did not disclose their HIV status (M=2/6, SD=1.6). Additionally, in a South African study by Kiene, Christie, Cornman, Fisher, Shuper, Pillay, Friedland and Fisher (2006:1783), disclosure of HIV status to someone particularly without the care clinic had a significant positive association with fewer unprotected sexual events among PLWHA.

The findings in the above studies suggest that PLWHA who disclosed their HIV status to their sexual partners may be more likely to practice safer sex compared to those who have not disclosed their HIV status to sexual partners. However, in the French study by Bouhnik, Préau, Lert, Peretti-Watel, Schiltz, Obadia, Spire and the VESPA Study Group (2007:S59), for male and female PLWHA, HIV positive status disclosure to sexual partners had no significant association with practicing unsafe sexual intercourse. Similarly, in a South African study by Kiene et al (2006:1783), practicing risky sexual behaviour on the overall was observed to have no association with the disclosure of HIV status to sexual partners among PLWHA.

2.4 ANTIRETROVIAL THERAPY

2.4.1 Definition

Antiretroviral therapy (ART) refers to treatment with (antiretroviral) drugs that inhibit the ability of the HI-virus or other retroviruses to multiply in the body (National Cancer Institute, 2009). Antiretroviral drugs do not kill the HIV but rather they slow the growth (multiplication) of the virus (The Body, 2009). This therapy (ART) involves administration of three or more different drugs (ARVs), taken daily for the rest of a person's life (Avert, 2008; MedicineNet.com, 2008).

2.4.2 Importance/benefits of antiretroviral therapy

The benefits of antiretroviral treatment for people with HIV/AIDS far outweigh their risks. This has been demonstrated beyond reasonable doubt in numerous clinical trials as well as observational data from clinical practice (AIDSTruth.org).

There are several benefits attributed to the use of antiretroviral drugs:

- Firstly, there is the reduction of the progression from being HIV positive to AIDS or death (Wongvipat, 2001). In the South African CHER study by Violari, Cotton, Gibb, Babiker, Steyn, Madhi, Jean-Philippe and McIntyre (2008:2237), the use of ART has shown to slow HIV-related disease progression by 75% among HIV infected infants. Also, approximately 2.9 million lives have been saved globally as a result of the use of antiretroviral therapy (UNAIDS/WHO, 2009:17). In a study by Nagot et al (2007:4), in Burkina Faso, 72% of HIV positive women had detectable genital HIV-1 RNA and after 18 weeks on HAART, only 1(2.5%) woman had detectable plasma HIV-1 RNA and 2 (5.1%) had detectable genital HIV-1 RNA.

- Secondly, the use of antiretroviral drugs in combinations of three or more drugs in HIV treatment, highly active antiretroviral therapy (HAART) has been observed to dramatically improve the quality of life and productivity of HIV infected persons, and prevented them (PLWHA) from dying early (UNAIDS, 2009a:1; Wongvipat, 2001).

- Thirdly, the use of antiretroviral drugs has been attributed with prolonged life for people infected with HIV. Emerging evidence confirms comparable improvements in longevity of life among PLWHA in low- and middle-income countries, as a result of the use of antiretroviral therapy. An estimated 11.7 million life years were added globally between 1996 – 2008 as a result of the use of antiretroviral therapy (Wongvipat, 2001; UNAIDS/WHO, 2009:16 -17).

- Fourthly, antiretroviral use has been associated with reduction of transmission risk of HIV from an HIV-infected mother to an uninfected child. It is estimated by the UNAIDS/WHO that a cumulative 200,000 new HIV infections were averted among infants in 2008, as a result of the use of antiretroviral drugs for HIV prevention among pregnant women. In most high-income countries, the rate of HIV transmission from infected mothers to babies has been reduced to less than 1% by using a range of medicines (ARVs) and good antenatal care (UNAIDS/WHO, 2009:13-14; UNAIDS, 2009a:2).

- Lastly, use of antiretroviral drugs can lead to a reduction in HIV transmission (spread); for example, in cases of occupational and non-occupational exposure to potentially HIV contaminated fluids (Greenall, 2008:F2; Wongvipat, 2001).

In a South African study, 98% PLWHA agreed that ART can prevent occurrence of HIV disease, 90% that ART can prevent mother-to-child HIV transmission and 88% that ART can control HIV (Nachega et al, 2005:198). Similarly, in a Ugandan study, PLWHA identified the following as being the benefits of ART: reduced occurrence of illness or ill-health, regained health, increased levels of energy and larger involvement in work activities and home visits that could promote health seeking behaviour among those who had never used VCT services (Bukenya, 2008:3).

However, in spite of the benefits attributed to ART, the relatively poor acknowledgment (especially in sub-Saharan Africa) by senior politicians, state authorities, widely publicized “experts” and some members of the community, coupled with the lack of excitement among HIV positive persons not yet on the therapy, may impair both individual adherence to the treatment and the possible HIV prevention benefits of ART (Chopra, Kendall, Hill, Schaay, Nkonki and Doherty, 2006:1976).

2.4.3 Common side effects of antiretroviral drugs

Antiretroviral drugs like most medicines can cause side effects. These unwanted effects are often mild, but sometimes they can be more serious and can have a serious impact on health or quality of life and, in rare occasions, these side effects can be life threatening (Avert, 2009a).

On the one hand, some side effects appear shortly after starting antiretroviral therapy and often disappear within a few weeks (minor side effects) as the body gets used to the new drugs. These include: nausea, vomiting, diarrhoea and headache (see table 2.3). On the other hand, major side effects such as peripheral neuropathy (nerve damage), severe anaemia (condition where there are reduced numbers of red blood cells or reduced level of haemoglobin in blood) and lipodystrophy (fat redistribution), for example, tends to worsen over time and may never go away. And unfortunately, some of these problems may not emerge until months or even years after treatment is started (Avert, 2009a). Table 2.3 exhibits some of the side effects of some ARV’s.

Table 2.3: Common side effects of some antiretroviral drugs

Name of ARV drug	Minor side effects	Major side effects
Stavudine (D4T)	Asthenia (weakness) Nausea Diarrhoea Vomiting	Lactic acidosis Neuropathy Lipodystrophy Acute pancreatitis
Zidovudine (AZT)	Abdominal upsets Nausea Vomiting Asthenia Headache	Anaemia Neutropaenia Hepatic steatosis
Tenofovir (TDF)	Asthenia Nausea Diarrhoea Vomiting	Renal dysfunction Osteomalacia Osteoporosis
Efavirenz (EFV)	Asthenia Nausea Vomiting Headaches Insomnia Nightmares	Teratogenicity Psychiatric illness Hepatoxicity Hypersensitivity reaction Gynaecomastia
Niverapine (NVP)	Asthenia Nausea Vomiting Abdominal upsets	Hepatoxicity Hypersensitivity reaction Hyperlipidaemia
Atazanavir (ATV)	Asthenia Nausea Vomiting Diarrhoea	Clinical jaundice Fat mal-distribution Hyperglycaemia Nephrolithiasis
Lopinavir (LPV)	Asthenia Nausea Vomiting Diarrhoea	Hyperglycaemia Fat ma-distribution Hyperlipidaemia Heart malfunction

Source: WHO (2010): Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach.

2.4.4 Classification, mode of action and examples of ARVs

When HIV infects CD4 cells, HIV multiplies and produces many copies of itself, which can then go on and infect other healthy CD4 cells within the body. The greater the number of CD4 cells infected, the greater the impact on the immune system, and the more severe the deficiency it produces (immunodeficiency). The resultant effect is a progressive deterioration (impairment) in the ability of the immune system to protect the body from other infections and developing cancers (UNAIDS, 2009a:1;2; Sheldon, 2009).

The antiretroviral drugs interfere HIV duplication (multiplication) thereby keeping the levels of HIV in the body at a low level; ARVs do this by acting at different phases/stages of the retrovirus' (HIV) life cycle. The result is that the immune system is enabled to recover and work effectively, thereby enabling an HIV positive person to live a longer and healthy life (UNAIDS, 2009a:3; Sheldon, 2009; Avert, 2009; Medic8, 2009).

According to Medic8 (2009), antiretroviral drugs are broadly classified by the phase of the retrovirus life-cycle that the drug inhibits. There are thus five broad classifications of antiretroviral drugs in development, though only the first three classes currently have licensed drugs:

- Nucleoside and Non-nucleoside reverse transcriptase inhibitors (RTIs): also known as nucleoside analogues and the non-nucleoside analogues. Retroviruses, such as HIV use reverse transcriptase to convert their ribonucleic acid (RNA) (genetic material) to deoxynucleic acid (DNA) (genetic material). Without the ability to create the DNA inside the CD4 cell, HIV cannot infect the cell (hence cannot multiply itself).This class of drugs act by inhibiting the function of the enzyme *reverse transcriptase*, which enables HIV to make new copies of its own genetic material (UNAIDS, 2009a:3; Meyer, 2004).

The nucleoside reverse transcriptase inhibitors are analogues (imitations) of the body's own nucleosides (genetic building material), which HIV uses to make copies of itself. Nucleoside reverse transcriptase inhibitors (NRTIs), act by tricking HIV reverse transcriptase enzyme into using these imitated nucleosides, and when they are incorporated into HIV DNA, this breaks the HIV DNA chain (Meyer, 2004). Examples of nucleoside reverse transcriptase inhibitors include: Lamivudine (3TC), Stavudine (d4T), Zidovudine (AZT/ZDV), Abacavir (ABC), Emitricitabine (FTC), Didanosine (ddI), Zalcitabine (ddC) and Tenofovir (TDF). While the non-nucleoside reverse transcriptase inhibitors include: Nevirapine (NVP), Efavirenz (EFV), Delavirdine and Etravirine (Medic8, 2009; UNAIDS, 2009a:3).

The non-nucleoside reverse transcriptase inhibitors (NNRTIs) attach themselves directly onto the enzyme, reverse transcriptase. The attachment or binding then prevents reverse transcriptase from converting HIV RNA to DNA, thus preventing the further replication of HIV (Meyer, 2004). Examples of Non-nucleoside reverse transcriptase inhibitors include; Nevirapine (NVP), Efavirenz (EFV), Delavirdine and Etravirine (Medic8, 2009).

- The second class called Protease Inhibitors (PI's), act by inhibiting the function of the substance (enzyme) called protease, which helps HIV (at the later stages of the HIV life cycle) to make copies of itself. PI's cut up the long chains of the HIV proteins (DNA) into smaller pieces (that are capable) of infecting other CD4 cells. Thus, PIs keep immature non-infectious viral particles from becoming mature infectious particles, which cannot infect any other CD4 cells. Examples of Protease inhibitors include: Amprenavir (APV), Atazanavir (ATV), Darunavir (TMC114), Fosamprenavir (FPV), Indinavir (IDV), Lopinavir (LPV), Ritonavir (RTV), Nelfinavir (NFV), Saquinavir (SQV) and Tipranavir (TPV) (UNAIDS, 2009a:3; Meyer, 2009; Medic8, 2009).

- The third class of ARVs are the Fusion inhibitors. Fusion inhibitors work outside the CD4 cell by inhibiting HIV from joining or fusing to or binding to the cell. For the HIV virus to replicate itself, it needs to bind to the CD4 receptor (tiny tentacles on the surface of the CD4 cell). Therefore, this class of drugs bind to the CD4 receptors, hence denying HIV entry into the CD4 cell (Meyer, 2009; The Body, 2008). Fuzeon (Enfuvirtide), also abbreviated as T-20, is the only currently available fusion inhibitor approved for use in the treatment of HIV (Medic8, 2009).

- The fourth class of ARVs are the Integrase inhibitors. This class of ARVs works by blocking the incorporation of HIV DNA into the CD4 cell's DNA. The drugs do this by binding to the enzyme (integrase) that HIV uses to insert ("Integrate") it's newly made genetic material (DNA) into the CD4 cell's DNA. The binding of the drug to the enzyme prevents the insertion of viral DNA into cell DNA, hence HIV cannot replicate itself. An example of integrase inhibitors approved for use in the treatment of HIV is Raltegravir (MK-0518) (AIDSMEDS, 2010; Kominski, 2006; Medic8, 2009).

- The fifth class of ARVs are the Co-receptor (Entry) inhibitors. The co-receptors (especially CCR5) are tinny "arms" that stick out of the CD4 cell surface and they are located near CD4 receptors. These receptors (Co-receptors) are equally targeted by HIV and act like a "keyhole"; once HIV releases this "lock", it has gained entry into the CD4 cell. The co-receptor inhibitors therefore protect the CD4 cell by attaching/plugging to this part ("keyhole") of the cell, hence preventing HIV from gaining entry inside the CD4 cell. The approved drug for use in this class, in the treatment of HIV is Maraviroc (MVC) (The Body, 2008; Medic8, 2009).

Although ARVs are able to keep HIV levels low or undetectable, factors such as adherence to the therapy, (concurrent) use of other medications such as Tuberculosis drugs, and other illnesses, can affect the efficacy of the therapy. Adherence to therapy refers to taking medications at the right time, all the time (Sheldon, 2009; Meyer, 2009).

2.4.5 Eligibility for antiretroviral therapy

The World Health Organization (2010:24) recommends that all HIV-infected adults and adolescents including pregnant women should start ART when:

- their CD4 cell count is equal to or less than 350cells/mm^3 regardless of the presence or absence of clinical symptoms. In a study by Siegfried, Uthman and Rutherford (2010:18), they report that evidence from some trials reveal that initiating ART at CD4 levels higher than 200 - 250cells/mm^3, reduces mortality rates in asymptomatic and ART-naïve HIV-positive persons. The same study recommends that practitioners and policy markers should consider ART initiation at CD4 levels equal to and less than 350cells/mm^3, for patients who present to health services and are diagnosed with HIV early in the infection. The research clinic is currently using the cut-off of CD4 levels equal to and less than 350cells/mm^3 as eligibility level for commencing ART.
- there is presence of severe or advanced clinical disease (WHO stage III and IV, irrespective of their CD4 cell count). Table 2.4 exhibits detail on this.

Table 2.4: When to start ART for HIV infected adolescents and adults.

Target population	ART initiation guideline
HIV positive asymptomatic ARV-naïve individuals	CD4 ≤ 350 cells/mm^3
HIV positive symptomatic ARV-naïve individuals	WHO clinical stage 2 if CD4≤ 350cells/mm^3 Or WHO clinical stage 3 or 4 irrespective of CD4 cell count
HIV positive pregnant women	CD4 ≤ 350 cells/mm^3 irrespective of clinical symptoms Or WHO clinical stage 3 or 4 irrespective of CD4 cell count
HIV/TB co-infection ARV-naïve individuals	Presence of active TB disease irrespective of CD4 cell count
HIV/HBV co-infection ARV-naïve individuals	Individuals who require treatment for their HBV infection, irrespective of their CD4 cell count

Source: WHO (2010): Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach.

2.4.6 Antiretroviral drug combinations/regimens

The recommended current standard of care for people with HIV indicated for antiretroviral therapy is the use of multiple drugs (a combination of three or more antiretroviral drugs) taken everyday for life, known as Highly Active Antiretroviral

Treatment (HAART). HAART involves the use of two nucleoside reverse transcriptase inhibitors (NRTIs) and a third agent, either a non-nucleoside reverse transcriptase inhibitor (NNRTI) or a protease inhibitor (PI). In 1996 it was discovered that the use of combination ART could slow the progression of HIV to AIDS disease and death, and also reverse the course of AIDS to asymptomatic HIV infection.The use of three drugs at the same time also makes it harder for the HIV virus to adapt and become resistant to the antiretroviral drugs. (AIDStruth.org, 2009; UNAIDS, 2009a:1; Partners in health, 2006:4;64).

In 2001, the World Health Organization (WHO) introduced the concept of first- and second-line antiretroviral regimens (combinations). The choice of two NRTIs and one NNRTI was designated, the first-line regimen, while the choice of two NRTIs and a ritonavir-boosted PI as a third agent is the second-line regimen. And recently, the WHO has introduced the third-line regimen, which are newer drugs likely to have anti-HIV activity such as integrase inhibitors and second generation NNRTIs and PIs (Partners in health, 2006:64; WHO, 2010:58).

The first-line therapy consists of Zidovudine (AZT/ZDV) or Tenofovir (TDF) and Nevirapine (NVP) or Efavirenz (EFV) (WHO, 2009:31). The WHO also recommends progressive reduction in the use of stavudine (d4T) in the first-line regimen because of its toxicities (WHO, 2010:20). Refer to table 2.5.

In Swaziland, the national recommended first-line is currently; TDF, 3TC and EFV in a fixed combination formulation. This is the preferred first-line ART combination being given at the research site in treatment of ART-naïve adults and adolescents (refer to section 2.4.10 of this chapter).

Table 2.5: Preferred first-line ART in treatment-naïve adults and adolescents

Target population	Preferred first-line regimen
Adults and adolescents	AZT or TDF + 3TC or FTC + EFV or NVP
Pregnant women	AZT + 3TC + EFV or NVP
HIV/TB co-infection	AZT or TDF + 3TC or FTC + EFV
HIV/HBV co-infection	TDF + 3TC or FTC + EFV or NVP

WHO (2010): Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach.

The second-line therapy consists of ritonavir-boosted PIs plus two NRTIs, one of which should be AZT or TDF based on what was used in the first-line therapy. While ritonavir-boosted Atazanavir (ATV/r) or Lopinavir/ritonavir (LPV/r) are the preferred PIs (WHO, 2010:20) (refer to table 2.6).

In Swaziland, the WHO recommended second-line regimens were adopted as the national second-line regimens for adults and adolescents (refer to table 2.6). The research site follows the national recommended second-line regimens in treatment of adults and adolescents eligible for second-line ART (refer to section 2.4.10 of this chapter).

Table 2.6: Preferred second-line ART drugs

Target population	Preferred second-line regimen
Adults and adolescents (including pregnant women) (If d4T or AZT was used in first-line)	TDF +3TC or FTC + ATV/r or LPV/r
Adults and adolescents (including pregnant women) (If TDF was used in first-line)	AZT + 3TC + ATV/r or LPV/r
TB/HIV co-infection (If rifabutin is available)	Same regimens as recommended above for adults and adolescents
TB/HIV co-infection (If rifabutin is available)	Same NRTI back borne as recommended above for adults and adolescents + LPV/r or SQV/r super boosted with RTV
HIV/HBV co-infection	AZT + TDF + 3TC or FTC +ATV/r or LPV/r

Source: WHO (2010): Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach.

2.4.7 Dosage of antiretroviral therapy

Antiretroviral therapy (ART) may require taking several drugs at different times a day, before, during or after a meal (refer to table 2.7), in a schedule (combination) of medication known as a regimen. Regimens have also become simpler in recent years, as some combinations of drugs are now manufactured as a single tablet or capsule (PANOS, 2006:3).

In 2001, an Indian generic (ARV) manufacturer produced a combination of three antiretroviral drugs into a single pill, and this came to be known as a *fixed dose combination (FDC).* FDCs are a significant innovation as they reduce the number of pills taken each day, and because they are easier to manage for both the people taking them (FDCs) and the health worker, this may increase adherence, thereby reducing the emergence of drug resistance. The FDCs are also available in heat resistant form, and this would be very valuable for use especially in developing countries where refrigeration facilities are scarce (Avert, 2010).

Table 2.7: Recommended dosing of antiretroviral drugs

Nucleoside reverse transcriptase inhibitors	**Dose**
Abacavir (ABC)	300mg twice daily or 600mg once daily
Didanosine (ddI)	400mg once daily (Weight >60kg) or 250mg once daily (Weight ≤60kg).
Emtricitabine (FTC)	200mg once daily
Lamuvidine (3TC)	150mg twice daily or 300mg once daily
Stavudine (d4T)	30mg twice daily
Zidovudine (AZT/ZDV)	250 – 300mg twice daily
Nucleotide reverse transcriptase inhibitor (NtRTI)	**Dosing**

Tenofovir (TDF)	300mg once daily
Non-Nucleoside reverse transcriptase inhibitors	**Dosing**
Efavirenz (EFV)	600mg once daily
Etravirine (EFT)	200mg twice daily
Nevirapine (NVP)	200mg once daily for 14 days, followed by 200mg twice daily thereafter
Protease inhibitors (PIs)	**Dosing**
Atazanavir + ritonavir (ATV/r)	300mg + 100mg once daily
Darunavir + ritonavir (DRV/r)	600mg + 100mg twice daily
Fos-amprenavir + ritonavir (FPV/r)	700mg + 100mg twice daily
Indinavir + ritonavir (IDV/r)	800mg + 100mg twice daily
Lopinavir + ritonavir (LPV/r)	400mg + 100mg twice daily
Saquinavir + ritonavir (SQV/r)	1000mg + 100mg twice daily
Integrase strand transfer inhibitors (INSTIs)	**Dosing**
Raltegravir (RTV)	400mg twice daily

Source: WHO (2010): Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach.

2.4.8 Global picture on antiretroviral therapy use

Globally, the antiretroviral therapy programme is not keeping with the demand for the antiretroviral drugs among the PLWHA who need them (Greenall, 2008:F2).

The UNAIDS/WHO (2009:11) estimate that as at end of December 2008, there were nearly 34 million people living with HIV/AIDS globally. Of these (PLWHA), about 9.5 million were estimated to be in need of antiretroviral therapy in 2008, in low- and middle-income countries (WHO, 2009). However, at some point, as the immune system continues to deteriorate; everyone living with HIV will need ARV's and even if HIV transmission stopped instantly, over 30 million more people would still need ART for the rest of their lives (PANOS, 2006:4).

By the end of 2008, only about 4 million (42%) of the 9.5 million in need of antiretroviral drugs had actually accessed ART in low- and middle-income countries. It is also estimated that 700,000 people received antiretroviral therapy, bringing the global total to at least 4.7 million people accessing ART. In the same year (2008), only 38% of children in need of ART in low and middle-income countries actually received ARVs (WHO, 2009; UNAIDS, 2009b:2).

Despite the low figures of those being started on antiretroviral therapy, significant progress is being made with regard to making ARV's available to those who need them, and the global movement to reduce the price of medicines and expand access to antiretroviral therapy (ART) continues to gather momentum. This is evidenced by the increasing number of people on ART from 17% in 2005 to 30% at end of 2007, in Sub-Saharan Africa, which almost doubled between 2005 and 2007. Similarly, in East, South and Southeast Asia, the number doubled from 16% to 29%, and from 5% to 11% in the Middle East and North Africa, in the same period (PANOS, 2006:4; UNAIDS, 2009b: 2; UNAIDS, 2006:2). Table 2.8 summarises these statistics.

Table 2.8: Global antiretroviral therapy coverage

Geographical region	ART coverage in 2005 (%)	ART coverage in 2007 (%)	ART coverage in 2008 (%)
Sub-Saharan Africa	17%	33%	44%
Latin America and Caribbean	68%	50%	54%
East, South and South East Asia	16%	29%	37%
Europe and Central Asia	13%	16%	24%
Middle East and North Africa	5%	11%	14%
Estimated Global coveraage	**20%**	**33%**	**42%**

Source: UNAIDS (2006): Global facts and figures and UNAIDS (2009): Global facts and figures.

2.4.9 Antiretroviral therapy in Sub-Saharan Africa.

In Sub-Saharan Africa (SSA), the region with two thirds of the global HIV/AIDS cases, millions of dollars are being directed to address HIV/AIDS and its impacts through governments as well as the Global Fund to fight AIDS, tuberculosis and malaria, the World Bank, and Bilateral Overseas Development Aid. Private foundations such as the Gates and Clinton Foundations, and non-governmental organizations such as Médecins Sans Frontières, also continue to provide additional funds and technical support to fight HIV/AIDS in this region (McCoy, Chopra, Loewenson, Aitken, Ngulube, Muula, Ray, Kureyi, Ijumba and Rowson, 2005:18).

In a qualitative study conducted by Garko (2007:125) in Nigeria, PLWHA expressed the need to make the drugs (antiretroviral drugs) that make "life better", more available, affordable and accessible to all those in need, and the PLWHA also expressed the need for fairness and equity in ARV distribution. However, in spite of the efforts to make these drugs available, the demand for antiretroviral in Sub-Saharan Africa is still considerable.

The WHO (2009) estimated the number of HIV positive persons in need of ARV's to be 5.7 million in 2003, 6.4 million in 2005 and 7 million in 2007. The actual numbers of HIV positive persons estimated to be receiving ARV's was 100,000 in 2003, 810,000 in 2005 and 2.12 million in 2007. This represents an estimated coverage of 2% of estimated need in 2003, 17% of estimated need in 2005 and 30% of estimated need in 2007. The estimated ART coverage in sub-Saharan Africa by end of 2008 was, 42%. The latter statistics suggest that a large percentage of persons in need of ART do not yet have access to the treatment in Sub-Saharan Africa. Table 2.9 summarises these statistics.

Table 2.9: Antiretroviral therapy coverage in Sub-Saharan Africa

ART coverage in 2003 (%)	**ART coverage in 2005 (%)**	**ART coverage in 2007 (%)**	**ART coverage in 2008 (%)**
2%	17%	30%	42%

Source: WHO (2009); UNAIDS (2006): Global facts and figures and UNAIDS (2009): Global facts and figures.

2.4.10 Antiretroviral therapy in Swaziland

In Swaziland, the HIV population is estimated to have been 189,803 in 2009 and is projected to increase to 216,737 by 2015. However, early enrolment on ART as well as improved adherence to ART, may improve the survival of PLWHA (Government of the Kingdom of Swaziland, 2010:2).

Since the introduction of antiretroviral therapy programme in 2003, in Swaziland, there has been a significant increase in the number of PLWHA enrolled and initiated on ART (Government of the Kingdom of Swaziland, 2010:14). It is estimated that in 2005, 32,000 PLWHAs were in need of ART, and 59,000 PLWHAs were in need of ART by end of 2007. According to the 2009 HIV estimates and projections for Swaziland, using CD4 counts below 200cells/mm^3, 52,967 PLWHA were in need of ART. Of this number (52,967), 45,748 (86%) were adults and 7,219 (14%) were children (UNAIDS/WHO, 2008:10; Government of the Kingdom of Swaziland, 2010:2)

With regard to actual coverage of ART in Swaziland, approximately 21,670 (42%) PLWHA in need of these drugs had actually been started on ART by end of 2007. By the end of 2009, 47,241 (89.2%) of the estimated number in need of ART, were actively on ART. Of those actively on ART (47,241), 42,469 (90%) were adults and 4,772 (10%) were children. Notably also, 98% of PLWHA actively on ART were on first-line ART regimens. Also, of the total PLWHA enrolled on ART, 63% were female while 37% were male (Estimation and Projections for Swaziland Draft Workshop Report, 2007:3; Government of the Kingdom of Swaziland, 2010:31;32).

Nationally, the number of health facilities offering antiretroviral therapy and other related HIV/AIDS services increased from 51 health facilities both public and private by end of the first quarter of 2008 to 89 health facilities by end of 2009. The 89 health facilities are either ART initiation sites (24) and/or ART refill and outreach sites (MOH, 2008:1; Government of the Kingdom of Swaziland, 2010:31).

The high ART coverage rates from 51.6% in 2007 to 89.2% by end of 2009 is partly ascribed to the early enrolment of ART being piloted in key facilities; namely, Mbabane Government Hospital (where the study site is located) and Raleigh Fitkin Memorial

Hospital, which together account for an estimated 40% of all patients on ART in Swaziland (Government of the Kingdom of Swaziland, 2010:32).

At Mbabane National Referral VCT/ART Center, a fixed combination formulation of TDF, 3TC and EFV is used as first-line ART for adults and adolescents while AZT, 3TC and LPV/r is used as the second-line ART for adults and adolescents.

2.4.11 Antiretroviral therapy and disclosure of HIV status

The advent of ARV brought about additional implications for PLWAs. Living a life with disclosure may be much longer. Since this life with ARV's may often be asymptomatic, the potential for exposure to HIV of sero-negative sexual partners is that much more of a concern. Hence, the need to address disclosure and risky sexual behaviour with the increasing access to antiretroviral drugs especially in resource limited settings (Lurie et al, 2008: 484-485).

Higher disclosure rate among persons on ART and those diagnosed with HIV/AIDS for more than 2 years was observed in a Guyana study compared to those who were not on antiretroviral therapy and had less than 2 years period of diagnosis of HIV/AIDS. In the same study, males on antiretroviral therapy were observed to be more likely to disclose their HIV status to their regular sexual partners (88%) while females were more likely to disclose their HIV status to their non-regular sexual partners (47%) (Florendo et al, 2006). A study conducted in one urban clinic in Uganda, reported that PLWHA on ART are more likely to disclose their HIV status to a spouse or sexual partner than ART-naïve persons. (Bateganya, Colfax, Shafer, Kityo, Mugyenyi, Serwadda, Mayanja and Bangsberg, 2005:760). Eighteen percent (18%) of men and 9% of women were observed to have disclosed their HIV status before starting antiretrovirals and after staring ART, 64% of men and 51% of women disclosed their HIV status to their sexual partners. In this study, HIV positive men on ART were observed to be more likely to disclose their HIV status than women. (Fougelberg, Karloström, Veriava, Ive and Anderson, 2006:13).

In a West African study conducted by Ndiaye et al (2008:43), higher HIV status disclosure rates were observed among women on antiretroviral therapy (79.9%) compared to their male counterparts (72.1%). Also in this study, disclosure of HIV status among HIV positive women was significantly associated with having children. In another study conducted by Gari et al (2009:11), in Ethiopia, HIV positive women on ART for more than 1 year were more likely to disclose their HIV status to sexual partners than those who were not on ART (AOR, 8.62; 95%CI, 1.35 – 55.22). In comparison, in a South African study, no significant association between disclosure of HIV status and the use of antiretroviral therapy was observed by Nachega et al (2005:198).

2.4.12 Antiretroviral therapy and sexual practices

The more sexually active PLWHA on ART become, the higher the possibility of re-infection especially if safer sex is not practiced. With the improved rollout of antiretroviral therapy in many resource-limited settings, such as Swaziland, and ARVs potential to prolong the lives of PLWHA, understanding the sexual behaviour of PLWHA on antiretroviral therapy is essential to curbing secondary HIV transmission (Sarna, Luchters, Kaai, Munyao, Geibel, Shikely, Mandaliya, Hawken, Van Dam and Temmerman, 2005:1; Lurie et al, 2008: 484-485).

In a Côte d'Ivoire study by Diabeté, Alary and Koffi (2008:154-155) observed that 22.6% of PLWHA on ART had partners who were HIV negative while 33% did not know the HIV status of their sexual partners. In the same study, unprotected sex was observed to be higher among PLWHA not on highly active antiretroviral therapy (HAART) (RR, 1.25; 95%CI, 1.05-1.49), although, after a 6 month follow-up period, risk taking was similar (p=0.484) among PLWHA on HAART and those not on HAART as a result of increase in unprotected sex among those on HAART.

Similarly, in a Ugandan study conducted by Bunnell et al (2008:622), PLWHA with knowledge of ART had higher rates of condom use than those who did not know about ART (30% versus 14%). However, the relationship between knowledge of ART and condom use in a multivariate analysis was found not to be statistically significant. In another Ugandan study conducted by Andia et al (2009:340), it was observed that women on antiretroviral therapy were 3 times more likely to use barrier contraceptives (condoms) than those who were not on antiretroviral therapy.

Furthermore, in a qualitative study conducted by Ujiji et al (2010:7), in Kenya, HIV positive pregnant women resented the idea of "timed" unprotected sex (sexual intercourse only when they had the highest chance of getting pregnant). The reason for the resentment was because the use and effectiveness of ART had raised their hope to bear healthy children and this inspired them to seek a pregnancy. However, in the study by Diamond et al (2005:214), in USA, ARV use was negatively associated with practicing unprotected ano-vaginal sex regardless of the gender and age of PLWHA (OR, 0.7; 95%CI, 0.5 – 1.0; p<0.04).

2.4.12.1 ARV use and Increase in risky sexual practices.

Persons on ART may engage in unprotected sex because of the perception that HIV infection is unlikely if ARV use results in an undetectable viral load (Diamond, Richardson, Milam, Stoyanoff, McCutchan, Kemper, Larsen, Hollander, Waismuller, Bolan and the California Collaborative Trials Group, 2005:216). Lurie et al (2008:491), observed that among populations where ART is being introduced, such as in southern Africa, ARV use is associated with increased risky sexual behaviour . The increase of risky sexual behaviour with ARV use underscores the importance of maintaining education on safe sexual practices.

With regard to sexual activity in general, in a Ugandan study, 45% of women on HAART were sexually active 3 months prior to a study conducted there (Andia et al 2009: 340). In a Côte d'Ivoire study, 22.6% of sexually active PLWHA on ART had had a last sexual partner of either HIV negative status or unknown HIV status. In the same study, PLWHA starting ART had a causal relationship with an increase in risky sexual behaviour among HIV-1 infected persons (Diabaté et al, 2008:155). In another study conducted in San Francisco, USA, about 15% of PLWHA on ART who had maintained undetectable or nearly undetectable plasma viral load levels engaged in high-risk sexual behaviour 4 months prior to the study, with partners who were HIV negative or whose HIV status was unknown (Chin-Hong et al, 2005:468). Risky sexual behaviour among PLWHA on ART was further observed in a Ugandan study conducted by Bukenya (2008:42;46); 55.6% of PLWHA reported consistent condom use before starting HAART compared to 37.5% after starting HAART. In another Ugandan study, 35% of sexually active PLWHA on ART reported having 1 or more casual sexual partners in addition to a main/steady sexual partner (Bateganya et al, 2005:764-766).

Similarly, in a French study by Bouhnik et al (2007:S59), for male and female PLWHA, the use of antiretroviral therapy had significant positive association with practicing unsafe sexual intercourse. Also in the study by Dia et al (2010:152), in Cameroon, a multivariate analysis revealed that the use of ARVs had an independent significant positive association with inconsistent condom use (OR, 2.28; 95%CI, 1.64 – 3.18).

The above study findings suggest that PLWHA on ART may be more likely to practice risky sexual behaviour than their counterparts who are not on ART.

2.4.12.2 ARV use and decrease in risky sexual practices.

Some studies have reported a decrease in risky sexual behaviour and practices among PLWHA on antiretroviral therapy. In a multivariate analysis, the odds ratio of systematic condom use was twice as high among sexually active PLWHA on ART as opposed to PLWHA not on ART (Spire, De Zoysa and Himmich, 2008:3). Similar observations were made in a South African study, where condom use increased from 63% among males and females before starting ART to 84% after starting ART (Fougelberg et al, 2006:14). Bateganya et al (2005:765), report that consistent condom use with a spouse is more likely among those on ART than the ART-naïve PLWHA. In a study by Diamond et al (2005:212-213), it was observed that 31% of PLWHA on ART practiced unprotected anal-vaginal sex compared to 46% not on ART. ARV use was associated with decrease in unprotected anal-vaginal sexual practices

In a Ugandan study, an overall 59% of those on ART used condoms consistently with partners of negative or unknown HIV status while 58% used condoms consistently with partners who were HIV positive. With regard to partner status, 7% of males and females had sexual intercourse with a sexual partner of either HIV negative status or unknown status before starting ART, and 3% after starting on HAART. Fifteen percent (15%) of both males and females reported practicing unprotected sex before ART compared to 11% after starting ART (Bunnell et al (2006:89).

Fougelberg et al (2008:14), observed that condom use increased among those on ART with both regular and casual sexual partners; from 27% of both men and women before ART to 48% after starting ART with regular sexual partners and from 50% before ART to 68% with casual sexual partners. Among those with single sexual partners, condom use increased from 77.8% before ART to 87.5% after starting ART. And the frequency of those with multiple sexual partners (more than 2) declined from 22.2% before ART use to 12.5% after the start of ART (Bukenya, 2008:42;46).

The above findings do suggest that ARV use may be associated with decreased risky sexual behaviour among PLWHA receiving antiretroviral therapy.

2.4.12.3 ARV use and consistency in sexual practices.

Some studies have observed no difference or change in sexual activity and the use of antiretroviral therapy. Bunnell et al (2006:89), report that sexual intercourse did not change for either men or women on ART at baseline (34%) and after the start of ART (38%). Another Ugandan study by Bukenya (2008:42;46), reported that sexual activity remained about the same among male and females using antiretrovirals; 56.3% before ART and 50% after start of ART. Also, in a London study by Elford et al (2007:S67), no significant association was observed between unprotected sexual intercourse and use of HAART (p>0.1). Similarly, in a South African study by Kiene et al (2006:1783), practicing risky sexual behaviour had no association with the use of HAART among PLWHA. However, in the study by Bunnell et al (2006:89), changes in sexual feelings and experiences were reported; sexual desire increased from 2% before ART to 38% after staring HAART for men and from 1% before ART to 14% after ART was started in women.

2.5 Summary

For PLWHA under antiretroviral treatment, all interventions that maintain long-term virological success are likely to reduce HIV transmission risk. However, this can only be achieved by employing a comprehensive approach that integrates all essential prevention, care and support services, if the most is to be made of potential synergies (Spire et al, 2008).

The information gathered and interpreted from the above literature review, will be used to compare and contrast findings from the study, and generate recommendations with regard to the HIV disclosure and sexual practice of PLWHA on antiretroviral therapy in Swaziland.

The next chapter discusses the research design and methodology used in this study.

Chapter 3

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

The study purpose was to describe and identify, quantitatively, context specific factors influencing HIV sero-status disclosure and sexual practices among HIV positive persons on antiretroviral therapy at Mbabane National Government Referral VCT/ART Centre, Swaziland. Towards attaining this purpose, this chapter describes the study design, study population, study setting, aspects of sample and sampling techniques employed, as well as validity and reliability issues, methods of data collection, pretesting of the instrument, limitations of the study, ethical considerations observed, and a brief overview of data analysis methods employed.

3.2 RESEARCH METHODOLOGY AND DESIGN

3.2.1 Research methodology

According to De Vos et al (2005:71) and Brink (2006:22), research methodology refers to the manner or particular way in which to investigate reality or solve problems; that is, the research process. Burns and Grove (2001:223), describe the research methodology as the entire strategy for the study, from the identification of the research problem to the final plans for data collection. Research methodology refers to the science of dealing with principles of procedure in a research or study. It describes the techniques to be used by a researcher, the design, the population to be studied and the research instruments or tools to structure a study, and gather and analyse information relevant to the research question (The free dictionary, 2009; Polit & Beck, 2008:15).

3.2.1.1 Research paradigm: Quantitative research

Quantitative research is the investigation of phenomena that lend themselves to precise measurement and quantification, Examples of such phenomena include:behaviour, knowledge, opinion or attitude, often involving a rigorous and controlled design (Polit and Beck (2008:763; Cooper and Schindler, 2006:716). Quantitative research approaches have their roots in logical positivism and tend to focus on measurable aspects of human behaviour (Brink, 2006:10). Quantitative researchers study phenomena by attempting to measure them by attaching numeric values to them that express quantity (Polit & Beck, 2008:16; Burns & Grove, 2005:32). .

According to Polit and Beck (2008:16), quantitative approaches are based on beliefs that human beings are inherently complex and diverse physical systems which can be measured objectively, one at a time or combined.

3.2.1.1.1 Characteristics of quantitative research

According to Polit and Beck (2008:16-17); Brink (2006:11); Burns and Grove (2005:32), quantitative approaches have the following characteristics;

- Quantitative research typically focuses on relatively few selected concepts and moves in an orderly and systematic fashion from definition of the problem to the solution of the problem, In this study, HIV disclosure, sexual practices and HIV positive people on antiretroviral therapy will be the concepts of focus.
- Evidence in quantitative research is rooted in objective reality hence objectivity in data collection is emphasised, and this evidence is gathered directly or indirectly through the use of senses [sight, hearing, taste, touch and smell].
- In quantitative research evidence is gathered according to an established plan and using a structured data collection instrument. In this study, objectivity will be achieved by use of a structured questionnaire (refer to annexure A).

- Information collected in quantitative research is numeric and it results from some type of formal measurement that is analysed with statistical procedures (refer to section 3.6 of this chapter).
- In quantitative research mechanisms are used to control the study and control here involves imposing conditions on the research situation so that biases are minimised and precision and validity are maximised (refer to section 3.5.1 and 3.5.2 of this chapter).

3.2.1.1.2 Limitations of quantitative research approaches

In spite of the considerable stature quantitative research has enjoyed as a method of inquiry, it does have some limitations according to Polit and Beck (2008: 16 -17); Burns and Grove (2005:289); Babbie (2010:24) and Weinreich (2006);

- Quantitative approaches have an accurate measure for physiologic phenomena like body temperature but no comparable accurate measures of psychological phenomena such as self-esteem or hope.
- Neither quantitative nor qualitative approaches can be used to answer ethical or moral questions.
- In quantitative research, complexities tend to be controlled or if possible eliminated rather than studied directly and this leads to narrowness of focus that may obscure insights.
- Quantitative approaches carry the limitation/disadvantage of potential loss in richness of meaning, of phenomena. This being so because of the reliance on numbers to measure phenomena rather than assertions or descriptive statements about phenomena.

According to Brink (2006:92;102), quantitative designs can be divided into experimental and non-experimental designs. The basic difference between these two designs is that in the former, the researcher can control and manipulate the action of the specific variables being studied; that is the independent or causal variable (s), and observes and measures the action or outcome of the dependent variable(s). Yet in the non-experimental, there is no manipulation of the independent variable, neither is there any intervention; nor is the setting controlled.

3.2.1.1.3 Positivism

Positivism is the application of natural sciences research principles to the humanities – such as measuring reasons why people do things or how strong they feel, and so on. In other words, positivism emphaises observation and reason as a means of understanding human behaviour. The basic philosophical assumption underpinning this approach is that nature is basically ordered and regular, and that objective reality exists independent of human observations. Positivism contends that phenomena are not haphazard or random events, but rather have antecedent causes and outcomes (Dash, 2005; Polit & Beck, 2008:14-15; De Vos et al, 2005:5; Babbie, 2010:43).

According to Polit and Beck (2008:14-15); De Vos et al (2005:5-6; Babbie, 2010:41-43); positivistic approaches have the following characteristics;

- The researcher is independent on those being researched and the findings are not influenced by the researcher. Hence, there is tight *control* on the context being measured and the researcher’s beliefs and biases to avoid interference with the phenomena under study.
- The inquiry tends to follow a *deductive* process, and there is critical focus on the objectives and quantification of phenomena.
- Emphasis is placed on developing discrete and specific concepts to aide in *verification* of the researcher’s predictions in the inquiry.
- Positivistic approaches tend to have fixed and pre-specified designs.
- Quantitative or *numeric* information is often collected and statistical analysis methods are used in this type of approaches.

- Positivistic approaches often seek to *generalise* the study findings to the bigger population.
- Generally, the focus of positivistic approaches is more on the **product** than the process.

3.2.2 Research design

A research (or study) design is a blue print or overall plan for fulfilling research objectives and answering research questions, and for handling some of the difficulties encountered during the research process. And in quantitative studies, the research designs tend to be highly structured and controlled, and the design also indicates aspects such as frequency of data collection, types of comparisons to be made and where the study will take place (Cooper & Schindler (2006:716; Polit & Beck, 2008:66). According to Brink (2006:92), researchers generally choose the design that best fits their purpose, and which is compatible with the resources available to them such as time, money, information, ethical considerations and their personal preferences.

In this study, a non-experimental quantitative approach involving a descriptive and exploratory design was employed to determine the HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy. This design helped to provide an explicit description of the phenomenon being explored so that the problem can be addressed (Burns & Grove, 2005:265).

3.2.2.1 Non-experimental research approach

According to Brink (2006:102), a non-experimental design is one where there is neither manipulation of the independent variable and therefore, no intervention; nor is the setting controlled. The study is conducted in a natural (non-experimental) setting and phenomena are observed/investigated as they occur. No attempt is made to change the subject of the research in the process (University College Dublin, 2009). In these (non-experimental) approaches, data collection is undertaken without introducing treatments or making changes (Polit & Beck, 2008:62;759).

Several characteristics associated with humans are inherent and therefore not subject to experimental control, such as behaviours and perceptions. The variables under investigation in this study relate to human perception and behaviour, which are inherently difficult to collect information on using experimental designs (Polit & Beck, 2008:271-272). It is for this reason that a non-experimental design would be most appropriate to collect information in this study.

According to Brink (2006:102), the major purpose of non-experimental designs is to describe phenomena, explore and explain the relationship between variables. Although they are less able to determine cause and effect, they are highly useful in generating knowledge in a variety of situations in which it is difficult, unethical or even impossible to employ an experimental approach. Sound non-experimental designs generate information that form the basis for development of strong experimental interventions and these (non-experimental designs) do so by helping to document the scope of the problem and describe critical relationships between relevant variables (Polit & Beck, 2008:272).

3.2.2.2 Descriptive research approach

Brink (2006:201), states that descriptive studies are those in which phenomena are described or the relationship between variables is examined, and no attempt is made to determine cause-effect relationships. These designs are concerned with gathering information from a representative sample of the population and emphasise the use of structured observations, questionnaires and interviews or surveys. According to Cooper and Schindler (2006:708), descriptive studies attempt to relate or define a subject, often by creating a profile of a group of problems, people or events, through the collection of data and the tabulation of the frequencies on research variables or their interactions. These designs do also provide more information of a picture of the phenomenon as it occurs naturally (Brink, 2006:102-103; Burns & Grove, 2005:26).

According to Burns and Grove (2005:232), the primary purpose of a descriptive design is to describe the situation, preferences, practices, opinions, concerns or interests of the phenomenon under study. While, Polit and Beck (2008:274), similarly argue that the purpose of descriptive studies is to observe, describe and document aspects of a situation as it naturally occurs and sometimes serves as a starting point for hypothesis generation of theory development. In other words, the main objective of descriptive studies is to portray the characteristics of the research subjects, institutions, groups, situations or the frequency of occurrence of a phenomenon, particularly when little is known about the phenomenon (Polit & Beck, 2008:752).

Based on the descriptive statistics that was generated, this study seeks to describe the HIV disclosure and sexual practices of HIV positive people on antiretroviral therapy, a phenomenon that has not yet been investigated in Swaziland.

3.2.2.3 Exploratory research approach

The Oxford Mini Dictionary (2002:215) defines “to explore” as, “to investigate, examine, and look into in order to learn more about it”. Exploratory research refers to the process of collecting information to formulate or refine management, research, investigative or measurement questions. An exploratory design begins by simply observing or describing phenomena of interest (such as values, preferences, tasks, attitudes or experiences), which then lead to an investigation of the full nature of the phenomenon, the manner in which it is manifested and the other factors to which it is related (Cooper & Schindler, 2006:709; Polit & Beck, 2008:20; Brink, 2006:151).

The main aim of this kind of design is to become conversant with basic facts and create a general picture of conditions or phenomena. In fact the need for such a study could arise out of a lack of basic information on a new area of interest, or in order to get acquainted with a situation so as to formulate a problem or develop hypotheses (De Vos et al, 2005:106).

This study design assisted the researcher to explore the extent of HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy at the Mbabane National Referral VCT/ART Center. The design is deemed appropriate since it might provide more knowledge and better understanding of the phenomenon about which little is known and limited literature addressing this phenomenon is available in Swaziland.

3.3 STUDY POPULATION AND SAMPLING

3.3.1 Respondent sampling

3.3.1.1 Elements and populations

Elements are the most basic units (people, events, behaviour) of a population about which information is collected. Typically, these elements are human beings (Brink, 2006:124; Polit & Beck, 2008:339). A population referred to as a “target population”, is the entire set (universe) of individuals or objects having some common characteristics that are of interest to the researcher (Polit & Beck, 2008:761; Brink, 2006:206; Burns & Grove, 2005:43-44). During the current study, the elements were HIV positive people on antiretroviral therapy, age 18 years and above.

Accessible population

An accessible or source population is the aggregate of cases, group of people or objects that is available/accessible to the researcher as subjects for a particular study (Polit & Beck, 2008:338; Brink, 2006:198; Burns & Grove, 2005:789).

The accessible population in this study comprised of HIV positive individuals on antiretroviral therapy, 18 years and above, and registered at the Mbabane National Referral VCT/ART Centre from the inception of the clinic to the time of the study. This population is perceived to be critical in changing the dynamics of the HIV/AIDS epidemic spread and more specifically, preventing further spread of potentially drug resistant infections because for every new infection, there is an HIV infected person involved. So, enhancing safer sex behaviour in HIV infected persons, may help prevent their sexual partners from being infected (Kalichman, 2005:536).

3.3.1.2 Samples and sampling

3.3.1.2.1 Samples

A sample is a part, fraction or subset of a whole population, selected by the researcher to participate in a study. A sample thus consists of a selected group of cases, elements, participants, event, records or units of analysis from a defined (target) population, carefully selected to represent that population (Polit & Beck, 2008:339;765; Brink, 2006:124; Cooper & Schindler, 2006:717; Burns & Grove, 2005:293).

The reasons for having used a sample during the current study are:

- Selecting a sample was logistically less demanding, less costly and more time saving than collecting information from a large group of (all possible) respondents. This made the study more feasible (Burns & Grove, 2005:453; Brink, 2006:123).

- Polit and Beck (2008:337), and Babbie (2010:199), state that sampling in quantitative research allows researchers to achieve validity in statistical conclusions and helps to enable generalization of the results or findings to the whole research population. In this study, a sample was used to ensure generalization of the findings to the entire study population.
- The use of a sample may also result in collection of more accurate information than might have been obtained if the entire population was studied. This is because time, money and effort can be concentrated with a sample to produce better quality research; that is to say, better instruments, more in-depth information, and better trained interviewers or observers (De Vos et al, 2005:194; Brink, 2006:123).

3.3.1.2.2 Sampling

Sampling is a researcher's process of selecting a number or portion of individuals, events, behaviours or other elements from a delineated target population, in order to obtain information regarding phenomena, in a manner that the individuals/elements in the sample represent as nearly as possible the characteristics of the whole study population. The intent of sampling is so that inferences about the entire population can be made from the selected individuals or elements (LoBiondo-Wood & Haber, 2005:142; Polit & Beck, 2008:339; Burns & Grove, 2005:341: Brink, 2006:124).

3.3.1.3 Sampling criteria

Sampling criteria lists the characteristics essential for participation in the research. These criteria are developed from the research problem, the purpose, the conceptual and operational definitions of the study variables, and the design. The sampling criteria may include characteristics like the ability to write, to read, to communicate in a particular language, age and so on (Burns & Grove, 2005:233; Polit & Beck, 2008:356).

3.3.1.3.1 Inclusion/eligibility criteria

Inclusion/eligibility criteria refers to characteristics that prospective participants must meet or designation of specific attributes of the target population, to be eligible for participation in a study (Polit & Beck, 2008:752; NINDS, 2008; Burns & Grove, 2005:343).

The inclusion criteria in this study were:

- HIV positive persons, male and female, aged 18 years and above. The age of sexual consent in Swaziland is considered to be 18 years (Interpol, 2006);
- HIV positive persons registered at Mbabane National Referral VCT/ART Clinic, from inception of clinic to time of study;
- HIV positive persons on antiretroviral therapy; and
- Respondents willing to participate in the study.

3.3.1.3.2 Exclusion criteria

Exclusion criteria specify the characteristics that respondents or population should lack in order not to be included in the study, as outlined in the study protocol (Burns & Grove, 2005:343: Polit & Beck, 2008:753; Photothera, 2009).

The exclusion criteria in this study were:

- HIV negative persons;
- HIV positive persons less than 18 years of age;
- HIV positive persons not registered at the Mbabane National Referral VCT/ART Center, from inception of clinic to time of study;
- HIV positive persons not on antiretroviral therapy; and
- Respondents who were not willing to participate in the study.

3.3.1.4 Sampling frame

A sampling frame is a list of all elements in the population, from which the sample can be drawn (Polit & Beck, 2008:765). The frame is developed by listing all members of the accessible population, and the frame ensures that each person identified in the target or accessible population has an opportunity to be selected (Brink, 2006:125; Burns & Grove, 2001:369).

In this study, the pharmacy antiretroviral refill registers were used as the sampling frame, to obtain the names of all patients on antiretroviral therapy at the Mbabane National Referral VCT/ART Clinic.

3.3.1.5 Sampling plans

A sampling plan is a formal plan that specifies a sampling method, a sample size, and procedures for recruiting subjects (Polit & Beck, 2008:765). According to Burns and Groove (2001:369), the sampling plan (design) may use probability (random) sampling methods or non-probability (non-random) methods.

3.3.1.5.1 Probability sampling

Probability sampling was employed in this research in respondent selection and recruitment. Probability sampling was opted for in this research because it enables selection of a representative sample from which the findings can be generalised to the population, hence permitting correct use of inferential statistics (Brink, 2006:126). According to Polit and Beck (2008:340), probability sampling involves random selection of elements, and in this sampling design the researcher can specify the probability that an element of the population will be included in the sample. Probability sampling designs include: simple random sampling, stratified random sampling, cluster sampling, and systematic sampling (Burns & Groove, 2001:370).

3.3.1.5.2 Systematic random sampling

In the current study, a systematic random sampling technique was employed to obtain the required sample.

Polit and Beck (2008:344;347) describes systematic random sampling as a probabilistic technique in which each element within the study population has a specified chance of being selected. The technique involves the selection of sample elements such that every k^{th} person or element in a sampling frame is chosen. According to Brink (2006:129), systematic sampling involves selecting elements at equal intervals and this technique is based on the supposition that cases are not added to the list in a systematic manner that coincides with the sampling system; for example, say every 5th person (suppose the interval was 5) on the list should not be found to have similar characteristics or should be added to the list in such away that they have the same characteristics say, gender or profession or whatever other characteristic. Addition to the sample list ought to occur naturally.

According to Brink (2006:129), systematic random sampling involves:

- Obtaining a list of the total population. During the current study, pharmacy antiretroviral refill registers were used to obtain the list of all patients on antiretroviral therapy at the clinic.
- Determining the sample size. In this regards, refer to section 3.3.1.6.
- Determine the sampling interval. During the current study, with an average daily drug refill attendance of 120 people per clinic day and a predetermined manageable number of 20 per day, the interval will be 120 divided by 20, which is 6.
- The fourth step is randomly choosing the starting point, a process that was undertaken using a table of random numbers.

Lastly, the technique involves selection of the other elements based on the sampling interval. In this study, using an interval of 6, the required daily sample of 20 respondents were selected per clinic day (Monday to Friday). This exercise was repeated on a daily basis until the required sample size was obtained, and this selection process took 4 weeks to realize the required sample size. The selection exercise took a little longer period because the anticipated number of 20 respondents per day was not realized on some days

The advantages of systematic random sampling technique include:

- It is relatively less time consuming than other techniques
- It requires less effort and is relatively simple to apply
- It can be applied to lists (sampling plans) that are stratified (De Vos et al (2005:200)
- It allows for correct use of inferential statistics in generalising the findings to the target population (Brink, 2006:129).

However, the main disadvantages of systematic random sampling technique are:

- There is a danger of bias if the list of elements were arranged in such a way that certain types of elements are listed at intervals coinciding with the sampling interval; for example, if every 6th respondent was a female (De Vos, 2005:200). In this study, the pharmacy drug refill registered is generated as the patients arrive at the clinic irrespective of gender or other characteristics and so, this disadvantage was minimized.
- The other disadvantage of systematic sampling technique is that it is a probability sampling technique and like all other probability sampling techniques, it is still relatively inconveniencing and complex compared to non-probability techniques (Brink, 2006:129).

This sampling technique was deemed appropriate by the researcher because of the advantages of the sampling technique discussed above.

3.3.1.6 Sample size estimation

Burns and Grove (2005:354), contend that there are no hard and fast rules regarding the determination of sample size. Similarly, Polit and Beck (2008:348) argue that there are no simple formulas that can tell you how large a sample is needed in a given quantitative study. However, the larger the sample, the more representative of the population it is likely to be.

According to Brink (2006:135), the researcher must consider both scientific and pragmatic factors influencing the sample when he/she decides on the number of subjects to be included in the study. These factors include amongst other the research purpose, design and type of sampling used.

To estimate the sample size for this study, the formula for the estimation of sample size advanced by Cooper and Schindler (2006:435), was used. The formula reads as follows;

$$N = p*q / \sigma^2_p$$

The keys to the formula are: N represents the sample size; p the proportion of the population that is estimated to have the given attribute being investigated, expressed in decimal; q is the proportion of the population that does not have the attribute being investigated (calculated as 1- p) and expressed in decimal; σ_p the standard error of the proportion (calculated as: α / z). Alpha (α) is the desired degree of precision within which the population proportion is expected to fall and z is the standard score expressed in terms of standard deviation from the mean.

In the study, “Treatment of HIV in Swaziland” by Ericdotter and Skånberg (2005:13) the observed disclosure of sero-status to sexual partners was 61%. A similar study conducted by Lurie et al (2008:490), in Johannesburg, South Africa among HIV positive people on antiretroviral therapy revealed an average general disclosure rate of 75% inclusive of disclosure to sexual partners, in the urban and rural settings. It was therefore estimated that the proportion of disclosure of sero-status among HIV positive people on ART in Swaziland is 70%. Therefore p=0.7; q=0.3; z = 1.96 at a 95% confidence interval and α = 0.05 at 5% confidence level. Standard error of the proportion (σ^2) = 0.05/1.96.

$$\begin{aligned}\text{Estimated sample size (N)} &= 0.7 * 0.3 / 0.0255^2 \\ &= 0.21 / 0.00065 \\ &= 323\end{aligned}$$

The crude sample size = 323. However, a 5% adjustment of sample size was made assuming that 5% of questionnaires would not be completed adequately. The final sample size of 340 HIV positive people on antiretroviral therapy was selected for this study from the daily drug refill register.

3.3.2 Site sampling

3.3.2.1 Study setting

The study setting refers to the physical location and conditions in which data collection takes place during a study (Polit & Beck, 2008:766). The study setting can be a natural or controlled environment (Burns & Grove, 2005:325). A natural environment is one where no changes have been made specifically for the purposes of the study. To avoid manipulation of data collection and results, researchers make decisions about where to conduct a study based on the nature of the research question and the type of information needed to address it (Polit & Beck, 2008:57). In the current study, no changes or alterations were made to the clinic situation nor was preferential treatment given to the respondents.

This study was conducted at the Mbabane National Referral VCT/ART Clinic, located in Mbabane, the capital city of Swaziland. As indicated earlier, this facility was the first government VCT/ART clinic to be established in 2002 and by the end of December 2008, this facility had 5,727 registered patients on antiretroviral therapy (MOH-M&E department, 2009).

3.3.2.2 Rationale for choice of study site

The researcher conducted the study at the Mbabane National Government Referral VCT/ART Clinic because:

- It has a large number of registered patients from whom data can be collected.
- It's a national referral clinic with a diverse population of rural and urban based patients. This might have helped to provide a more comprehensive and representative picture of the practices among HIV positive persons on antiretroviral therapy for the variable being investigated, than would a non-referral clinic.
- The researcher is conveniently based at this facility as his place of work, and this would significantly help him to reduce costs and time related data collection.
- The large patient numbers versus the small number of care providers at the clinic places a constant challenge on the quality of counseling given including behaviour change counseling. This study would provide an opportunity to

describe the practices among PLWHA's in the context where care providers are limited.

- Being in an urban set up, the clinic has a large mobile population, who come to work in the city or is passing by the city. This means that some patients have little interface with the care providers to reinforce sexual behaviour change messages. A description of the disclosure and sexual practices of PLWHA who interface with health care providers on a limited manner would add to the general understanding of disclosure and sexual practices of PLWHA who have little interface with health care providers.
- Unlike other government clinics in the country which are integrated into the normative hospital care and service provision structure, Mbabane National Referral VCT/ART Clinic operates generally as a stand alone clinic though located within the hospital. A description of sexual and disclosure practices of PLWHA attending a stand-alone health service delivery site could further add to the general understanding of disclosure and sexual practices at stand alone clinics.

3.4 METHODS OF DATA COLLECTION

3.4.1 Data collection

Burns and Grove (2005:421), define data collection as a systematic process in which the researcher collects relevant information to achieve the research purpose and objectives. The data collection process involves application of a measuring instrument to gather data from subjects and the process ranges from a simple observation at one location to a grandiose survey of multinational corporation at different sites using instruments such as questionnaires, standardised tests, observation schedules, laboratory notes and instrument calibration logs (Brink, 2006:54; Cooper & Schindler, 2006:77). The term "data" in quantitative research refers to pieces of information obtained for a study (Polit & Beck, 2008:60).

In this study, every respondent was given a summary of the potential benefits as well as risks of the research; this was printed on each consent form (refer to annexure E) and read out aloud to every respondent before the data collection tool (refer to annexure A) was administered.

3.4.2 Data collection instrument

The choice of the instrument to be used to collect data depends on the research design (Burns & Grove, 2005:421). According to Polit and Beck (2008:755), an instrument is a device used to collect data such as a questionnaire, test, observation schedule, and so on.

A questionnaire is a structured data collection instrument comprising of a fixed set of questions and items, used to collect and record information from respondents in a specified sequence and with pre-designated response options, in a research project (Polit & Beck. 2008:371; De Vos et al, 2005:166 citing The New Dictionary of Social Work, 1995). Following the literature review as a frame of reference, a structured self-designed questionnaire (see annexure A), composed of mainly closed and a few open-ended questions and items was administered to determine the HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy at the Mbabane National Referral VCT/ART Clinic. The questionnaire was completed by the researcher/research assistant on behalf of the respondents, to enhance speedy accurate and complete data collection and a high response rate.

According to De Vos et al (2005:166), the basic objective of a questionnaire is to obtain facts and opinions about a phenomenon from people who are informed on the particular issue being investigated. Questionnaires are often composed of a mixture of open and closed-ended questions. Open-ended questions are those where the respondent's answers are not restricted to predetermined alternatives, so he/she replies in whatever way she or he chooses whereas closed-ended questions offer or limit the respondent to a set of predetermined response options (Polit & Beck, 2008:760;749; De Vos et al, 2005:174-175).

During the current research, four point Likert scales were used for most items. A Likert scale is a variation of the summated rating scale, which refers to a category of scales where participants agree or disagree with evaluative statements (Cooper & Schindler, 2006:712;718). According to Polit and Beck (2008:419) a Likert scale consists of several declarative items that express a view point on a topic and respondents typically are asked to indicate the degree to which they agree or disagree with the opinion expressed by the statement. To score a Likert scale, typically agreement with positively worded items and disagreement with negatively worded items are assigned higher scores, which then are summated to obtain the total score, hence they are called summated rating scales. The values obtained are then treated as interval data (Brink, 2006:155-156; Polit & Beck, 2008:419-420).

This questionnaire (refer to annexure A) contained four sections with items and questions relating to:

- Section one: Socio-demographic information.
- Section two: HIV disclosure practices.
- Section Three: Sexual practices.
- Section Four: Antiretroviral therapy.

The researcher found this data collection instrument appropriate for the current research as supported by the following advantages of the instrument discussed by Brink, 2006:146-147; Polit and Beck, 2008:324;371):

- The use of a questionnaire not only minimises diversion from the subject of study, but also helps to maintain consistency in obtaining and recording responses, and allows for objective data collection from the respondents since the questions and format are the same for all respondents. The questionnaire and data collection conducted during the current research met with all these stipulations.
- The use of a questionnaire is a quick way of obtaining data from a sample selected at relatively less cost with regard to time and money.
- Respondents experience a greater sense of anonymity, since their names or identity are not recorded on the questionnaire in any way that would link them to the responses. This may have also led to the respondents providing honest answers. However, the presence of the data collectors may have affected the rate of response.
- Questionnaires yield data that are relatively easy to analyze compared to other less structured data collection instruments.
- The questionnaire is relatively easy to administer and score, especially if completed by the researcher/research assistants on behalf of respondents as was the case during the current research.
- The use of a structured questionnaire allows for researcher control in the process of data collection, a characteristic of quantitative research designs aimed at minimising biases and maximising precision and validity. All these advantages were capitalized on during the current research.

On the other hand, in spite of the reasons forwarded by the researcher for having chosen the questionnaire as data collection instrument, the disadvantages of the questionnaire as suggested by Brink (2006:146-147), and Polit and Beck (2008:371), were also considered. These include:

- The use of questionnaires offers limited opportunity to respondents to qualify or explain the underlying meaning of their answers. In this study, open-ended items were provided in the questionnaire for items that were anticipated to require further substantiation by the respondents.

- Respondents may give the researcher information that they think he/she wants (socially acceptable answers) especially when predetermined responses are used. A mix of open and closed questions was employed to try and address this problem. The questions were analysed as discussed in section 3.6 (methods of data analysis).
- Since a face-to-face administration of the questionnaire was employed, this might have been threatening to some respondents and this might have affected the quality of data provided by the respondents. To overcome this problem, confidentiality of all information provided and the respondent’s right to stop or continue with the process whenever they felt uncomfortable, was emphasised to the respondents before the instrument was administered to them (refer to annexure J).
- Questionnaires are not appropriate for surveying certain populations; namely, the illiterate, the elderly and children who may not be able to read and write. However, this shortcoming was circumvented as the researcher personally administered and completed the instrument on behalf of the respondents.
- Considerable effort is often required to develop and refine questionnaires. This was greatly eased by the researcher having conducted an extensive literature review on both the research topic and on instrument development for similar studies, and from obtaining guidance from the supervisor and statistician.
- Questionnaires generally have low response rates compared to other structured data collection instruments (Polit & Beck, 2008:430). However, the personal administration of the instrument by the researcher improved the response rates.
- Questionnaires are seldom appropriate for in-depth examination of phenomena. The aim of the study was to describe the disclosure and sexual practices among people on antiretroviral therapy; this scope was therefore deemed not to require in-depth examination but rather portray the extent or frequency of the phenomenon.

3.4.3 Administration of data collection instrument

Once, approval to conduct the study was obtained from the authorities, the researcher proceeded to pretest the data collection tool (questionnaire). The revised structured questionnaire after pretesting was then administered to collect data from the selected sample. The questionnaire was personally administered by the researcher/research assistants and the responses from the respondents was documented directly onto the instrument in the spaces/boxes provided on the tool (see annexure A).

The questionnaire was written in English and translated into SiSwati. The language of communication was both English and SiSwati and the researcher/ research assistants were fluent in both English and SiSwati to enable interpretation of any questions that were either not well understood by the respondent or for those who do not understand English.

3.4.4 Pretesting of the instrument

Pretesting refers to an assessment of a newly developed instrument by performing a trial administration before the start of the study. The overall intent of this process is to identify flaws and thus refine the instrument before employing in a study (Cooper & Schindler, 2006:384; Polit & Beck, 2008:380;)

Pretesting of an instrument before conducting the study according to Polit and Beck (2008:380), and Cooper and Schindler (2006:384), serves the following purposes:

- To determine the time required to administer the entire instrument and also assess how burdensome the instrument might be to the respondents.

- To identify parts of the instrument that may be difficult for the respondents to read or understand or that may have been misinterpreted by the respondents.
- To determine training needs for the data collection team by identifying the specific questions or parts of the instrument that need to be emphasized during training.
- To identify ways to increase respondent interest so that they may remain engaged in the study to its completion.
- To determine the question content, wording and sequence problems or the sensibility of the instrument.
- To identify potentially objectable or offensive questions or parts in the instrument.
- To determine whether the measures yield data with sufficient variability; that is, whether the variables adequately cover the subject or topic of study.

Taking into consideration the purposes of pretesting an instrument, the instrument was pretested in Mankanyane Government Hospital VCT/ART Clinic. This clinic was chosen because it shares similar patient and clinic care characteristics as Mbabane National Referral VCT/ART Clinic. Using a systematic sampling approach, 10 HIV positive people on antiretroviral therapy at this clinic were selected to test the instrument. To them, the self-designed structured questionnaire (agreed upon by the researcher, supervisor and statistician) was administered.

3.4.4.1 Findings of the pretest

3.4.4.1.1 Respondent selection

The following findings/observations were made during the respondent selection process:

- Sensitisation of potential respondents was done on the day of the pretest, during the morning patient health education session. The patients were introduced to the study and the researcher. Some identified respondents declined to participate, stating that they needed time to think about their participation.
- The selection process of the sample at the pharmacy, using the ART refill register was much faster than the rate at which data collection was taking place. As a result, the identified respondents had to wait several minutes before meeting the data collectors. Some left before data were collected from them especially when it got to the afternoon.
- Some respondents selected were not the actual patients themselves, they were picking up medication on behalf of their relatives or spouses who were not present. This was only noticed at the start of data collection, so other respondents had to be selected.

3.4.4.1.2 Data collection process

The following observations were made during the pretest data collection phase of the instrument pretesting exercise:

- All respondents who accepted to participate in the instrument pretest exercise, exhibited nervousness at the beginning of the data collection process but this wore away several minutes after interacting with the data collectors.
- The average data collection time per respondent was observed to be 20 minutes per respondent per data collector.
- Generally, there was minimal interruption to the normal flow of the clinic activities and day’s operations with regard to patient flow and access to services the respondents had come seek from the clinic.

3.4.4.1.3 Data collection instrument

The following observations were noted regarding the data collection instrument;

- One response option to question 5 in section 4 of the questionnaire (refer to annexure A) was noted to be ambiguous and difficult to understand by most respondents.
- Some questions had fewer options than responses being given; namely, question 3 in section 2; question 13 in section 2; question 1 in section 3; question 7 in section 3 and question 4 in section 4.
- Some sections lacked clear instruction on how to respond, especially after responding to question 1 of section 2.
- Several spelling and numbering errors were noted; namely, item 5 in section 2; item 8 in section 2; question 12 in section 2; item 6 in section 4 and question 7 in section 4.

3.4.4.2 Application of the instrument pretest findings

The findings of the pretest led to the following changes/modifications on both data collection instrument and on conducting of the research process:

3.4.4.2.1 Selection of respondents

- For the main study, sensitization was done every morning, Monday to Friday during the health education talks at the clinic, for five weeks prior to data collection.
- To match the pace of respondent selection and data collection, so as to avoid long waiting time for respondents, two more research assistants were selected and trained (refer to section 3.5.3 of this chapter).
- All selected respondents were asked to ascertain if they were the actual patient or whether they were collecting the ARV's on behalf of the index patient. This saved time for both the respondents and the researchers.
- No respondent was given preferential treatment based on age, gender or other characteristics but rather, all were given an equal chance of being selected into

the study using the sampling techniques discussed in section 3.3.1.5.2 of this chapter.

3.4.4.2.2 Data collection process

A little more time (2-3minutes) was given at the beginning of the data collection exercise to re-orient the respondents to the study, share anticipated benefits of the study, adverse events, their rights and the researcher's obligation in the study, as a way to allow them to relax and create rapport.

3.4.4.2.3 Data analysis

One data entry clerk (data capturer) was employed for the purpose of timely data entry. As suggested by Burns and Grove (2009:462), the quality of data collected was ensured by firstly, orienting the data capturer to the instrument and the designed data capture screen (spread sheet). Secondly, after data capture was completed, the data was checked by the statistician for missing information, miscoding, and re-coding of some items that had been entered incorrectly. The statistician also ran calculation of the internal consistency of the instrument as discussed in section 3.5.2.1.

3.4.4.2.4 Data collection instrument

Changes made to the data collection tool are discussed in section 3.5.1.2 of this chapter.

All in all, the identified issues with regard to feasibility of the study, clarity of questions, order of questions, appropriateness of the questions, length of the questionnaire and other procedural concerns were all used to make the necessary changes on what became the final version of the data collection instrument and the research methods and procedure.

3.5 MEASURES TO ENSURE VALIDITY AND RELIABILITY

3.5.1 Validity

Validity refers to the degree to which an instrument measures what it is supposed to measure (Polit & Beck, 2008:457; Brink (2006:209). Polit and Beck (2008: 458), contend that the more evidence obtained that an instrument is measuring what it is intended to measure that it is valid, the higher the level of trust the researchers would put into inferences based on the findings.

According to De Vos et al (2005:160), Brink (2006:160-162), and Polit and Beck (2008:286-287), there are four major classifications or types of validity namely:

- Content validity
- Face validity
- Criterion validity and
- Construct validity.

For the current study, content, face and construct validity were considered to be appropriate.

3.5.1.1 Content validity

Content validity is concerned with the degree of representativeness or sampling adequacy of the content or elements or instances of the phenomenon or constructs being measured. According to content validity is concerned with the degree to which an instrument has an appropriate sample of items for the construct being measured and adequately covers the construct domain De Vos et al (2005:160-161; Polit & Beck (2008:458). In other words, content validity is an assessment of how well the instrument represents all the components of the variable to be measured, and this type of validity is mainly used in the development of questionnaires or interview guides (Brink, 2006:160).

To ensure that content validity was met in this study,

- a review of relevant literature was done before the development of the instrument. This review helped to ensure that all the necessary variables are included in the instrument (Brink, 2006:160).
- content validity was met by ensuring a ‘jury opinion”. Jury opinion is whereby researchers or other experts make judgments on the extent to which the measure covers the universe of facets that make up the concept (De Vos et al, 2005:161 cites Monette et al, 2002). The questionnaire was evaluated by two senior clinicians working with the Swaziland National AIDS Program (SNAP), the research supervisor, a statistician and pretesting of the instrument, to ensure consistency and that the tool included all attributes of the phenomena to be measured.

3.5.1.2 Face validity

Face validity, according to Brink (2006:160), means that the instrument appears to measure what it is supposed to measure. It refers to whether an instrument looks as though it is measuring the appropriate construct (Polit & Beck, 2008:458). It is the weakest kind on instrument validity according to Brink (2006:160). However, according to De Vos et al (2005:161), this aspect of validity is an important and desirable exercise without which resistance to full participation in the study may be encountered on the part of the respondents; this in turn may adversely affect the results obtained.

In this study face validity was ensured by conducting an appropriate literature review to construct questions relevant to the study. The questionnaire was evaluated for its face validity by two senior clinicians working with the Swaziland National AIDS Program, the research supervisor, a statistician and the test respondents, to ensure that it appears at “face value” to be a relevant measure of the attributes under investigation (De Vos et al, 2005:161). The two senior clinicians of the SNAP were Dr. Velephi Okello, National ART co-ordinator and Dr. Marriane Calnan, Physician and HIV/AIDS Case Manager (refer to annexure M).

Necessary changes or comments following the evaluation was made to the instrument. The following changes were made to the data collection instrument:

- Ambiguous questions were either deleted or rephrased; namely, question 13 in section 3 (the last option was deleted); question 5 in section 4 (rephrased) and question 4 in section 4 (the last option was deleted and replaced with another option).
- Some options were added for some questions; namely, option “other” was added for question 2 in section 2 and question 10 in section 2; option “not applicable” was added to question 1 in section 3; option “None” was added for question 9 in section 3; question 11 in section 3 and question 2 in section 4.
- Spelling and numbering errors were corrected for question 3 in section 2; question 6 in section 2; question 12 changed to 11 (numbering error) and question 13 in section 3 (option 2).
- Further instruction, “tick all applicable” was added for question 2 in section 2 and question 10 in section 2.

3.5.1.3 Construct validity

Construct validity ensures that abstract concepts are measured adequately, and logically, and identification of the relationship between variables is made with an instrument based on theory and clear operational definitions Construct validity is used to explore the relationship between the results obtained by an instrument to the measures of the underlying theoretical concepts of the instrument (Burns & Grove, 2005: 217-218; Brink, 2006:162). According to Polit and Beck (2008:461), construct validity concerns inferences from the measures used to operationalize the variables. Operationalisation refers to the process of defining vague or ambiguous concepts and allowing the concept to be measured, empirically and quantitatively (Expereiment.resources.com, 2011) Refer to section 3.4.2 and annexure A.

In this study, the questionnaire was based on the literature reviewed guided by the relevance to the key constructs of the study. The questionnaire was divided into four sections, with two of the four sections of the questionnaire covering the main constructs to be measured; namely, “HIV disclosure practices” and “sexual practices”. Most of the Items and questions used to measure “HIV disclosure practices” and “sexual practices” were structured and comprising of a number of declarative statements in the form of a four Likert scale. The data obtained from Likert scales was treated as interval data (Brink, 2006:154). Refer to section 3.4.2 of this chapter and annexure A. This helped to create a common understanding between the researcher and the readers. The expert opinion of the senior clinicians at the Swaziland National AIDS Program, the research supervisor and statistician also helped to ensure construct validity of the measuring instrument (refer to annexure M and annexure I).

3.5.1.4 Internal and external validity

3.5.1.4.1 Internal validity

Burns and Grove (2005:215), define internal validity as the extent to which the findings of the study reflect reality rather than the influence of extraneous variables. Internal validity concerns the validity of inferences that, given an empirical relationship, the observed effects/outcomes can be attributed to the manipulated, independent variables rather than to uncontrolled extraneous factors(Polit & Beck, 2008:756; Brink, 2006:99).

According to Burns and Grove (2005:215), descriptive research they state, “are weak with regard to internal validity”.

To enhance internal validity in this study the following as suggested by Burns and Grove (2005:215-217), was employed:

- A structured data collection instrument (questionnaire) was used to minimise the effects of extraneous variables on the responses of the respondents.
- The study was conducted in a natural environment; that is, the Mbabane National Referral VCT/ART Clinic.
- The use of a valid and reliable data collection instrument was ensured as discussed in section 3.5.2.1 of this chapter (Cronbach’s alpha coefficient for the instrument (as a whole) used in this study was 0.875).

3.5.1.4.2 External validity

Polit and Beck (2008:287), define external validity as the extent to which inferences about observed relationships in a study will hold over variations in persons, setting, time, or measures of the outcome. In other words, external validity concerns the degree to which the results of a study can be generalised to the target population and to other collectivities of the population across time and setting (Brink, 2006:101; Cooper & Schindler, 2006:284). According to Burns and Grove (2005:218-219), external validity is an important aspect in descriptive research.

To enhance external validity in this study, the following was done as suggested by Burns and Grove (2005:215-218):

- Random sampling was used to ensure a representative sample of the target population. Random sampling ensured that all HIV positive people on antiretroviral therapy at the Mbabane National Referral VCT/ART Clinic had an equal chance of participating in the study.

- Low response rates were avoided by personal administration of the data collection tool (questionnaire) by the researcher.
- The Hawthorne effect and social desirability were avoided by having assured all respondents of anonymity, privacy and confidentiality of information collected so that they would truthfully complete the questionnaire without fearing that they might be identified and victimised on the basis of their responses. According to Brink (2006:101), the Hawthorne effect is a situation whereby the respondents behave or respond in a particular manner because they are aware of that they are being observed, a social desirability refers to a situation whereby respondents give answers that they perceive are acceptable or consistent with prevailing social norms (Polit & Beck, 2008:766).

3.5.2 Reliability

Reliability refers generally to the extent to which independent administration of the same instrument (or highly similar instruments) consistently yields the same (or similar) results under comparable conditions, if used repeatedly over time on the same person or sample, or if used by two researchers (De Vos et al, 2005:163; Brink, 2006:163-164). Reliability also refers to the accuracy and consistency of information obtained in a study; in other words, reliability is primarily concerned with how well rather than what is being measured (Polit and Beck (2008:196).

Although perfect reliability is seldom attained however for this study the following procedures/steps were employed to increase the reliability of measures, as argued by Polit and Beck (2008:457):

- Use of multiple indicators (items) of a variable (concept); for example, using two or more questions (indicators) in a questionnaire to measure each aspect of a variable.

- Pre-testing the instrument and replications; this refers to developing a draft or drafts, or preliminary versions, of a measure and testing these before applying the final version. The questionnaire was pre-tested on 10 HIV positive people on antiretroviral drugs. They were not be included in the study. This helped to determine the clarity of the questions, unacceptable questions and consistency of the responses.
- Clearly operationalising all constructs, this means developing an unambiguous, clear theoretical definition for each construct and then making sure that each measure indicates only one specific concept. To achieve this, all the key constructs; namely, “HIV disclosure”, “sexual practices” and “antiretroviral therapy”, were theoretically defined using at least three different sources, then a set of items/ questions were developed for each of the key constructs, in a form of a questionnaire to measure the key constructs of the study (refer to section 3.4.2 and annexure A).
- The alpha coefficient was calculated and compared with the values obtained for the questionnaire in the pretest, to estimate the reliability of the instrument.
- To avoid intra or inter-observer variations, (difference in measurement by two or more observers),
  - i. The research assistants were trained in the use of the data collection tool so that they apply and collect data using the instrument uniformly (refer to section 3.5.3.3 of this chapter).
  - ii. Clearly defined and non-overlapping categories were ensured in the questionnaire (refer to annexure A).
  - iii. A set criterion was used to select the research assistants (refer to section 3.5.3.2 of this chapter).

3.5.2.1 Reliability coefficient

Reliability coefficients are important because they give an indication of the quality of data collection instruments (Polit & Beck, 2008:491). And if the measures are unreliable, then the researcher’s assumptions may not be adequately tested. One possibility when data fails to confirm a prediction is that the instrument is unreliable and not necessarily that there is not a relationship between variables. Thus, information about an instrument's reliability becomes of paramount importance in interpretation of the research findings.

The Cronbach's alpha coefficient is a statistical estimate of reliability of a psychometric instrument. This is a measure of the internal consistency or homogenicity; that is, how closely related a set of items or subparts in a data collection instrument are (Polit & Beck, 2008:749; Brink, 2006:164).

The SPSS version 14 was used to compute the alpha coefficient for the scheduled data collection instrument. The alpha coefficient obtained was 0.875. According to Burns and Grove (2009:463), a reliability coefficient of 0.70 is considered sufficient for a newly developed psychometric data collection instrument. Basing on the alpha coefficient estimate obtained, the instrument used for data collection in this study was considered reliable.

3.5.3 Training of research assistants (Data collectors)

3.5.3.1 Need for research assistants

The researcher sought to use research assistants in data collection for the following reasons:

- Firstly, since the researcher was working (on duty) at place of employment and was not able to collect the data himself from the respondents, hence the need to employ research assistants.
- Secondly, the relatively big sample size (see section 3.3.1.6 of this chapter) would be overwhelming for one person to do the data collection, hence the need to employ research assistants.

- Thirdly, since the researcher had targeted to finish the data collection process by end of December 2010, the relatively short time available necessitated help of research assistants.
- Fourthly, the researcher is not natively Swazi and since matters of sexuality are culturally “sensitive” matters in the Swazi culture, use of people (research assistants) who understand the Swazi culture better in data collection, was deemed to be more appropriate by the researcher. Also, some of the questions and items in the questionnaire that might have required clarification necessitated people (research assistants) who understood the local dialect, a quality the researcher did not have.

3.5.3.2 Selection of research assistants

The research assistants (1 male and one female) were recruited from within the respective hospital for the pilot and main study using a set criterion. The reason for selection of assistant of different gender is that there could be some respondents who may not be comfortable taking to researchers of specific gender. The criterion for the selection of the assistants was:

- 20-40 years of age to enhance respect for both the respondents and for the researcher. Some respondents may not be comfortable talking to researchers they perceive are younger or older than themselves. To enhance congruity and avoid unremarkable appearances as suggested by Polit and Beck (2008:382).
- Have a minimum educational level of form 4, for a better comprehension of terminology used in the data collection instrument, a view supported by Polit and Beck (2008:382).
- Must be fluent in both English and SiSwati; since they will be using tools written in English and then translate to SiSwati as they administer the tool.
- Should have basic knowledge of HIV and antiretroviral therapy, so that they can be in position to clarify any aspects that may arise during tool administration.

3.5.3.3 Training of research assistants

A half day training for the data collectors was conducted by the researcher at the Mbabane National Referral VCT/ART Centre, and the scope of training covered both general and specific aspects related to the research.

The training outline suggested by Polit and Beck (2008:382-383), was used to guide the development of the training content. Table 3.1 exhibits the outline of the training course content, and this was considered adequate owing to the small scope of the study.

Table 3.1 Training outline for research assistants

- i. **Introduction.**
  - a. Background and purpose of the study
  - b. Study schedule
- ii. **Initial study procedures**.
  - a. Identification of respondents
  - b. Ethical principles to be upheld in the study
  - c. Set-up or organization of study setting
- iii. **The role of research assistants (Data collectors)**
  - a. Creation of an appropriate environment
  - b. Recording information
  - c. Avoiding researcher interruption in data collection
- iv. **Instructions of actual data collection**
  - a. Introduction to respondents before data collection
  - b. Introducing the study to respondents
  - c. Obtaining informed consent from respondents or guardians
  - d. Administering the data collection instrument
- v. **Concluding the data collection Administrative study procedures**
  - a. Returning of filled-in questionnaires to researcher
  - b. Editing of the completed questionnaires by researcher.
  - c. Payment for the work done by research assistants.

(Source: Polit and Beck, 2008)

3.6 METHODS OF DATA ANALYSIS

Data analysis in quantitative approaches refers to the categorization, ordering, manipulation and summarizing of numeric data through the application of statistical procedures for the purpose of describing phenomena or assessing the magnitude and reliability of relationships among phenomena, in meaningful terms (Polit & Beck, 2008:763; Brink, 2006:170).

With the help of a statistician (refer to annexure I for statistician's resume), the collected data was captured using Epi-info version 3.5.1 and analysed using the Statistical Package for Social Sciences (SPSS) computer program, version 14.0. Most of the questions and items included in the structured questionnaire were closed ended. These questions and items were coded for easy computer analysis. The computer generated responses to the open-ended questions and items, were categorized and their frequencies manually generated by the researcher. The obtained data from the instrument were treated as interval data (refer to section 3.4.2 of this chapter) and was analysed using descriptive statistics and the results organised, summarised and presented in form of frequency tables, percentages, graphs and charts (Brink, 2006: 171).

Proportions were computed from the Chi-square (X^2) (contingency tables) that allowed for exploration or identification of significant relationships between the key variables in this study (Polit & Beck, 2008: 601) (refer to chapter 4;section 4.3.4 of this dissertation).

3.7 ETHICAL CONSIDERATIONS

Guido (2006:2) defines ethics as the science relating to moral actions and moral values, and values are personal beliefs about the truths and worth of thoughts, objects, or behaviour. According to Polit and Beck (2008:753), ethics refers to a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal, and social obligations to the study participants. De Vos et al (2005:57); in their exploration of the terminology, “ethics”, state that ethics refer to a set of moral principles which is suggested by an individual or group, is subsequently widely accepted, and which offers rules and behavioural expectations about the most correct conduct towards all people/institutions involved in the research process.

To discuss the ethical principles employed in this study, the outline suggested by Van der wal (2005:151) was adopted.

3.7.1 Ethical principles regarding participants

3.7.1.1 Beneficence

According to Polit and Beck (2008:170), the principle of beneficence means that it is the researcher's duty to minimize harm and maximize benefits, and the dimensions of this principle include:

3.7.1.1.1 Right to freedom from harm and discomfort

According to Polit and Beck (2008:170), freedom from harm and discomfort means that it is the researcher's obligation to avoid, prevent, or minimise harm (non-maleficence). The discomfort and harm could be physical, emotional, spiritual, economical, social or legal (Brink, 2006:32; Burns & Grove, 2009:199).

In this study, no invasive methods was used in data collection or at any stage of the research process, nor was coercion employed. Since most of the respondents come from far, data collection was restricted to the morning hours of the day to allow for early travel of respondents back to their homes. This might have helped to minimise disruption to the respondents' lives.

3.7.1.1.2 Right to protection from exploitation

The ethical principle of “right to protection from exploitation”, according to Polit and Beck (2008:171), ensures that participants are assured that their participation, or information they provide will not be used against them in any way or expose them to situations for which they have not been prepared.

The fact that the respondents were not compensated for their participation in the study and yet the researcher was aiming at attaining a master’s degree based on the information they provided, could be seen as a form of exploitation. However, to maintain this ethical principle, the researcher reassured the respondents that the findings of the study were going to shared with the concerned Ministry of Health to whom such study findings might be helpful in developing strategies/interventions to help them (respondents) in the areas of HIV disclosure and sexual practices.

3.7.1.2 Respect for human dignity

3.7.1.2.1 Right to self-determination

Self-determination means that the prospective participants/respondents have the right to decide voluntarily whether to participate in a study, without risking any penalty or prejudicial treatment. This also includes the right to ask questions, to refuse to give information, or to withdraw from the study (Polit & Beck, 2008:171-172).

In this study, the respondents held the right to independent decision, without any form of coercion, whether or not to participate. The respondents were reassured that none of them would be victimised or disadvantaged from accessing care services because they have refused to participate in the study or disclosed any information. They also retained the right to withdraw from the study at any time and/or decline answering any question as they wished.

3.7.1.2.2 Right to full disclosure

Full disclosure means that the researcher has fully described the nature of the study, the person’s right to refuse participation, the researcher’s responsibilities, and likely risks and benefits (Polit & Beck, 2008:172). In this study, every respondent was given a summary of the potential benefits and risks of the research and this was printed on each consent form and read out aloud to every respondent before the data collection tool was administered.

3.7.1.2.3 Informed consent

According to De Vos et al (2005:59 citing Williams et al., 1995), “informed consent” implies that the respondents are given adequate information on the goal of the investigation, the procedures to be followed in the study, possible advantages and disadvantages and dangers to which they may be exposed, as well as the credibility of the researcher. The researcher may provide this information in written, verbal or taped form and the respondent’s willingness to participate in the study is acknowledged by his/her signature and that of the researcher (Brink, 2006:36-37).

A signed informed consent was obtained from the respondents before data collection as proof of their willingness to participate in the study (refer to annexure E), and before signing of the consent form, information was given to the respondents regarding the study and their right to participation or refusal to participate in the study or to withdraw at any stage of the study (refer to annexure J).

3.7.1.3 Justice

The Oxford Mini Dictionary and Thesaurus (2002:340) defines ‘justice’ as fair-mindedness, morally right, deserved and appropriate behaviour or treatment. Justice connotes fairness and equity (Polit & Beck, 2008:173).

3.7.1.3.1 Right to fair treatment

Fair treatment means that the researcher must treat people who decline to participate in a study or who withdraw from the study after agreeing to participate in a non-prejudicial manner. This involves honouring all agreements with participants, say to make any payments as promised; demonstration of sensitivity to and respect for the beliefs, habits, and lifestyles of people from different backgrounds or cultures; participants are given access to research personnel for any desired clarification, and participants are accorded courteous and tactful treatment at all times (Polit & Beck, 2008:173-174).

In this study, no respondent was preferentially or prejudicially treated based on their age, gender, cultural, social background or other characteristics. All respondents had access to the researcher's address and contacts in case they needed clarification on any matter pertaining to the study, as indicated in the questionnaire. Respondents were also informed that no monetary benefits would be given to anyone for their participation in the study.

3.7.1.3.2 Right to privacy

The Oxford Mini Dictionary and Thesaurus (2002:481) defines 'privacy' as being undisturbed or unobserved. This means that the respondent has the right to determine the extent to which, and the general circumstance under which, his or her private information will be shared with or withheld from others. Such information includes their attitudes, beliefs, behaviour, opinions and medical records (Brink, 2006:33).

In this study, privacy was ensured by collecting data within the non-occupied clinic consultation/counseling rooms where other people cannot hear or intrude, and the questionnaire will be administered to the respondents one at a time.

3.7.1.3.3 Confidentiality

Confidentiality in research refers to the researcher's responsibility to prevent all data collected during the study from being divulged or made available to any other person (Brink, 2006:35; Polit and Beck, 2008:180).

In this study, confidentiality was ensured by keeping securely all information collected at the researcher's home, in a lockable cabin and the electronic data base was only accessible to the statistician and researcher who had pass words to the data base.

3.7.1.3.4 Anonymity

Anonymity refers to unknown or undisclosed name or authorship (The Oxford Mini Dictionary, 2002:22). This refers to the researcher's act of keeping the respondent's identities secret with regard to their participation in the research study, and the researcher cannot link the respondents to their data (Brink, 2006:34; Polit and Beck, 2008:180).

In this study, anonymity was ensured by having used numbers and not names on the data collection instruments (questionnaires). These numbers were not be related to any patient identifier numbers given to the respondents before by the clinic during the course of care.

3.7.2 Ethical principles regarding the institution

Several institutions such as governments, hospitals, universities and the like where research is conducted have established formal committees and protocols for reviewing research proposals before they are implemented (Polit & Beck, 2008:168;184). The review is a policy that protects the researcher and research subjects, and ensures that the intended research is conducted in accordance with the established scientific and ethical guidelines (Brink, 2006:42).

3.7.2.1 Permission to conduct the study

Permission to conduct the study was sought from the research and ethics committee of the Ministry Of Health of Swaziland, the hospital senior management and clinic in-charges. Permission was also sought from the research and ethics committee of Unisa (refer to annexure D, F, G and H – copy of letter for permission to conduct study from Ministry Of Health-Swaziland, permission to pre-test data collection tools and conduct research at study site, Unisa ethical clearance certificate and permission to conduct study from Mbabane National Referral VCT/ART Clinic supervisor respectively).

3.7.2.2 Avoidance of disruption or interference

To avoid disruption or interference with the daily clinic activities or programmes, non clinic staff were involved in the data collection process, permission was obtained to secure one or two rooms not in use for the purpose of data collection. Although respondents were selected during normative clinic consultation process, administration of the tool was done after patient had received necessary care and before they left the clinic.

3.7.3 Ethical principle regarding scientific integrity of researcher

Brink (2006:40), argues that besides protecting the rights of the respondents/subjects, the researcher must demonstrate respect for the scientific community by protecting the integrity of the scientific knowledge. With regard to the scientific integrity of the researcher, Van der Wal (2005:157), states that, “the scientific integrity of a researcher must be indisputable and incontrovertible”. This involves ethical responsibilities of the researcher with regard to competence, conduct and communication/reporting of the research findings.

3.7.3.1 Competence of the researcher

The competence and scientific integrity of the researcher are relevant to the entire research process. For educational purposes, the research should be assessed in the same way as other educational projects, and the researcher competence in educational research is often supplemented by the input of the research supervisors and promoters. For educational research, a formal contract between student researcher and supervisor or promoter is very important (Van der Wal, 2005:158).

In this study, a written formal contract was given by the University of South Africa detailing the supervisor (Dr. DM Van der Wal), the student and intended topic of study. The supervisor guided the student researcher all through the stages of the research.

3.7.3.2 Conduct and reporting of research findings

3.7.3.2.1 Veracity

According to Guido (2006:6), veracity concerns telling the truth and incorporates the concept that individuals should always tell the truth, and this principle compels that the whole truth be told. In this study, all procedures and data collected were made available and open for scrutiny for all the appropriate person(s) or institutions involved with/in the study. No data were fabricated by the researcher or anyone else.

3.7.3.2.2 Fidelity

Fidelity refers to keeping one’s promises or commitments (Guido, 2006:6). In this study, all agreements made with respondents and/or institutions were adhered to and in the need for any changes or formulation of new agreements, then the respondents or institutions were to be approached to do so. Neither changes nor formulation of new agreements was done during this study.

3.7.3.2.3 Avoidance of plagiarism

Plagiarism refers to the appropriation of someone's ideas, results, or words without giving due credit, including information obtained through the confidential review of research reports (Polit & Beck, 2008:188). *Cyberplagiarism is* a type of plagiarism involving downloading, cutting and pasting parts of, or entire articles from the Internet or web. To ensure scientific honesty with regard to avoidance of plagiarism, all sources of information used in this study whether published or not and those obtained from the internet/web were duly referenced (refer to references) (Van der Wal, 2005:159 cites Eysenbach, 2000).

3.7.3.2.4 Avoidance of falsification/fabrication

According to Polit and Beck (2008:188), falsification involves manipulation of research materials, equipment, or processes; changing or omitting data or distortion of results such that the research is not accurately represented in research reports. Falsification can also be engineered through applying inappropriate statistical measures to data. Fabrication refers to making up data or study results and reporting them.

All data and findings generated during the current study are reported as per the actual data collected during the study without any intentional misinterpretation. The collected data was made available to the appropriate authorities in case they needed to verify the findings.

3.7.3.2.5 Maintaining attribution and citation

Attribution refers to crediting an author, artist or scientist with a particular work or an idea while *citation* is the precise rewriting or quoting or acknowledgment of " intellectual credit" to a person's scholarly or artistic creations (Van der Wal, 2005:159 cites University of Alberta; Ashcroft, 2002).

To ensure scientific integrity with regard to attribution and citation, all sources of information used, authors and content were duly acknowledged within the text and in the list of references (see references)

3.7.3.2.6 Maintaining copyright and intellectual property

Whereas *copyright* refers to the legal entitlement an author, artist or scientist and publisher or distributor has to exclusive financial benefits from a work (Van der Wal, 2005:160), *intellectual property* refers to the original creative outcome of the artistic and scientific ventures of individuals that can be protected through copyright, trademark, patent, industrial design or integrated circuit topography (Van der Wal, 2005:160 cites University of Alberta; MRC par 10.4.1). To ensure scientific integrity with regard to copyright and intellectual property, all authors and publishers were duly acknowledged in the list of references (see references).

3.7.3.2.7 Ensuring equality

Equality refers to equal opportunity and equal treatment for the participants to be included in a study; this ethical principle was crucial during the participant sampling and recruitment stage, especially when the participants know the researcher. Random sampling in quantitative research to some extent resolves this dilemma (Van der Wal, 2005:160).

Since the current study employed quantitative research approaches, the principle of equality was ensured by performing a systematic random sampling during participant recruitment into the study. All respondents were treated equally regardless of age, gender or other characteristics (refer to section 3.3.1.5.2 & 3.4.4.2.1 of this chapter).

3.7.3.2.8 Cooperation with contributors

According to De Vos et al (2005:64-65), research projects are often so expensive and comprehensive that researchers may not be able to handle it on their own in terms of finances and time. For this reason, the researcher may involve colleagues in the research project either formally or informally, to assist with different aspects in the course of the study. It is therefore important that the extent to which acknowledgement is given to each participant is given careful consideration.

All contributors in this study were duly acknowledged in this research report in their various capacities, for their contributions in the study.

3.7.3.2.9 Debriefing and referrals

The Oxford Mini Dictionary (2002:152) defines “debriefing” as questioning to obtain facts about a completed mission. According to Polit and Beck (2008:182), debriefing sessions after data collection is completed, gives an opportunity to the respondents to ask questions or air out complaints regarding the data collection process or the research. Debriefing also permits the researcher to rectify any misconceptions that may have arisen in the minds of the participants (De Vos et al, 2005:66).

Every respondent in this study was given 5 - 10 minutes after the data collection exercise to ask any questions regarding the research or data collection process or express any complaints that they might have had. Clarifications were made before the respondent left and any comments about the study were documented (refer to annexure K of this dissertation) . Any respondents requiring further health, social, psychological and other support, were appropriately referred.

3.7.3.3 Dissemination or publication of findings

The researcher has the ethical obligation to ensure at all times that the investigation proceeds correctly and that no one is deceived by the findings; that is, the researcher should ensure that he/she compiles the report as accurately and objectively as possible. The information must then be formulated and conveyed clearly and unambiguously to avoid misappropriation by subjects, the general public, and even colleagues. Well-defined scientific terminology is essential for ensuring a more or less uniform interpretation (of study findings) by readers. The subjects should also be informed about the findings in an objective manner without offering too many details or impairing the principle of confidentiality (De Vos et al, 2005: 65-66; Van der Wal, 2005:160).

The findings of this study were represented as accurately and objectively as possible, in a clear written form. The report findings were summarised in a concise form and shared with the respondents during the clinic health education sessions; with the clinic staff at the weekly staff meetings; with the Mbabane Government Hospital doctors at the weekly doctors’ meeting. A copy of the research report was handed to the office of the director of health services of the Ministry Of Health; the Ethics and Research Committee, the Mbabane Government Hospital Management, and the University of South Africa, where the report will be published in the University’s website. An article of the report findings will be published in a renowned journal yet to be selected by the University of South Africa.

3.8 SUMMARY

In this chapter, the research design and methodology were discussed. A non-experimental quantitative design involving a descriptive and exploratory format was employed to investigate the research objectives and questions. A self-designed structured questionnaire was used to generate the data from HIV positive persons on antiretroviral therapy at the Mbabane National Referral VCT/ART Centre on the phenomenon of interest. Other aspects of research design, such as population, sampling technique, data analysis, and ethical considerations were also explained.

The next chapter, chapter 4, discusses aspects of data analysis, presentation and description or interpretation of findings.

CHAPTER 4

DATA ANALYSIS, PRESENTATION AND DESCRIPTION OF FINDINGS

4.1 INTRODUCTION

This chapter discusses the data analysis, presentation and interpretation of the study findings. The purpose of the study was to identify and describe, quantitatively, context-specific factors influencing HIV sero-status disclosure and sexual practices among HIV positive persons receiving antiretroviral drugs at the Mbabane National Referral VCT/ART Centre, Swaziland.

The main objectives of the study were to:

- identify the underlying factors influencing HIV disclosure among PLWHA on antiretroviral therapy.
- identify the factors influencing sexual practices among HIV positive people receiving antiretroviral drugs.
- describe the HIV disclosure practices among HIV positive persons on antiretroviral therapy.
- describe the sexual practices among HIV positive persons receiving antiretroviral therapy.
- determine the relationship between HIV status disclosure and sexual practices among HIV positive persons on antiretroviral therapy.

A self-designed questionnaire which was divided into four sections (socio-demographic data, disclosure practices, sexual practices and antiretroviral therapy) was used as the data collection tool (refer to annexure A). Data were then collected from 340 respondents over a period of 10 days and analysed.

4.2 DATA ANALYSIS

According to Polit and Beck (2008:763), data analysis in quantitative studies refers to the manipulation of numeric data through the application of statistical procedures for the purpose of describing phenomena or assessing the magnitude and reliability of relationships among phenomena. Data analysis also involves categorizing, ordering, manipulating and summarising the data and describing them in meaningful terms (Brink, 2006:170). The primary purpose of data analysis according to De Vos et al (2005: 218), is to reduce the data to an intelligible and interpretable form so that the relations of research problems can be studied or tested and conclusions drawn. In this study, the data collected was analysed using the Statistical Package for Social Sciences (SPSS) computer program, version 14.0

The obtained data was analysed using descriptive statistics and the results organised, summarised and presented in the form of frequency tables, percentages, graphs, charts, diagrams, measures of central tendency (mode, mean, median), simple correlation tests and degree of variation (standard deviation), (Brink, 2006: 171). Inferential statistics were used to test significance of relationships, and the Chi-square (X^2) was used to explore the significance, and relationships between the variables in this study. All of this assisted in answering the research questions and attaining the research objectives.

4.3 DATA PRESENTATION AND DESCRIPTION OF FINDINGS

A total of 340 respondents participated in the study and the data obtained were organised according to the sections as indicated in the questionnaire, and the data are presented here in form of tables, pie charts and graphs. The relationships between the key study variables (disclosure, sexual practices and antiretroviral therapy) and the demographics are demonstrated using cross tabulation and the Chi-square tests (X^2).

For items/questions where not all the respondents answered, the frequencies and percentages were calculated according to the number of responses obtained. The missing responses were thus not included in the computation of the frequencies and percentages for those items/questions.

The convention used in this chapter are:

- N = the total sample population (N=340)
- n = total of any variable under discussion
- f = the frequency of occurrence of a variable. Frequencies could relate directly to N or n. The researcher endeavoured to remind the reader of variables and items discussed by stating the N, n, f and % values. This was however not done with the same frequency in the text, but according to the researcher's judgment of its necessity towards easier understanding and reading.

4.3.1 SECTION ONE: SOCIO-DEMOGRAPHICS

The socio-demographic data covered the respondents' gender, age, region of the country they come from, type of residence (urban or rural), marital status, education level, religious orientation, employment status and nationality. Although this section is not central to the study, the obtained data assisted in the contextualization of the study findings and the formulation of appropriate recommendations (see chapter 5) relating to HIV disclosure and sexual practices of PLWHA on antiretroviral therapy.

4.3.1.1 Gender characteristics of the respondents

All respondents (100%; N=340) gave responses to this question, and 75.3% (*f*=256) of the respondents were females while 24.7% (*f*=84) were males (refer to table 4.1). The proportion of females is higher than the 60% of HIV positive persons on antiretroviral therapy at Mbabane National Referral VCT/ART as reported by the Ministry of Health (MOH-M&E Department, 2009).

Table 4.1: Gender distribution of the respondents (N=340)

Gender	**Frequency** ***f***	**Percentage** **%**
Female	256	75.3
Male	84	24.7
Total	**340**	**100.0**

4.3.1.2 Age distribution of the respondents in years

All respondents answered this question (100%; N=340) and their ages ranged from 15 to equal or above 60 years. No respondent was observed to be less than 18 years of age. Of the respondents, 0.3% (*f*=1) was 15 to 19 years; 6.2% (*f*=21) were 20-24 years; 18.8% (*f*=64) were 25 to 29 years; 19.4% (*f*=66) were 30 to 34 years; 20.9% (*f*=71) fell into the category of 35 to 39 years; 13.2% (*f*=45) in the category 40 to 44 years; 8.8% (*f*=30) were 45 to 49 years; 6.8% (*f*=23) were 50 to 54 years; 2.9% (*f*=10) were 55 to 59 years and 2.7% (*f*=9) were 60 or above of age (refer to table 4.2).

Table 4.2: Age distribution of the respondents (N=340).

Age group (years)	**Frequency *f***	**Percentage %**
15 – 19 years	1	0.3
20 – 24 years	21	6.2
25 – 29 years	64	18.8
30 – 34 years	66	19.4
35 – 39 years	71	20.9
40 – 44 years	45	13.2
45 – 49 years	30	8.8
50 – 54 years	23	6.8
55 – 59 years	10	2.9
60 and above	9	2.7
Total	**340**	**100.0**

The age groups 25 to 29; 30 to 34 and 35 to 39 years, make up nearly 60% of the total respondents. In line with the above findings, the age group 25 to 39 years is generally observed in Swaziland to exhibit steady increase in HIV prevalence (MOH, 2008: ix;10). Figure 4.1 provides a pie diagram of the age distribution of respondents. These age groups are thus of special interest in the current study.

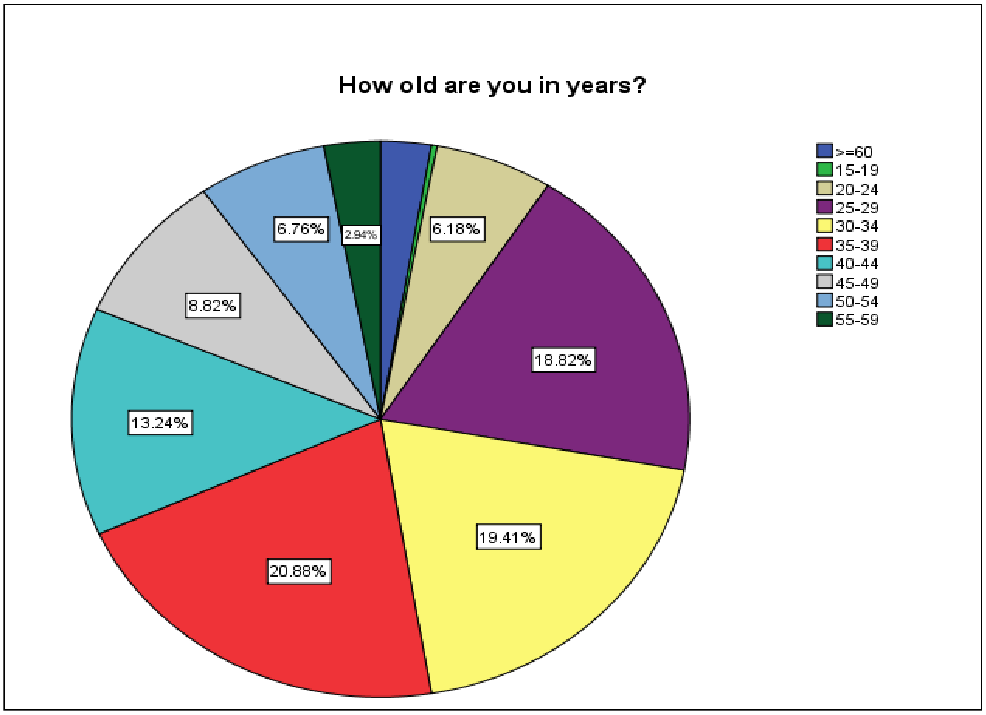

Figure 4.1

Age distribution of the respondents (N=340)

4.3.1.3 Region where respondents live

One hundred percent (N=340) responses were obtained for this question, and of the respondents, 74.7% (*f*=254) were from Hhohho Region; 20.3% (*f*=69) were from Manzini region; 3.5% (*f*=12) were from Lubombo Region and 1.5% (*f*=5) from Shiselweni Region (refer to figure 4.2 as well as figure 1.1 in chapter 1 of this dissertation).

The Hhohho Region had the highest frequency (74.7%) of respondents probably because the study site (Mbabane National Referral VCT/ART Centre) besides being the national referral HIV clinic, is also the main referral health facility for the Hhohho Region.

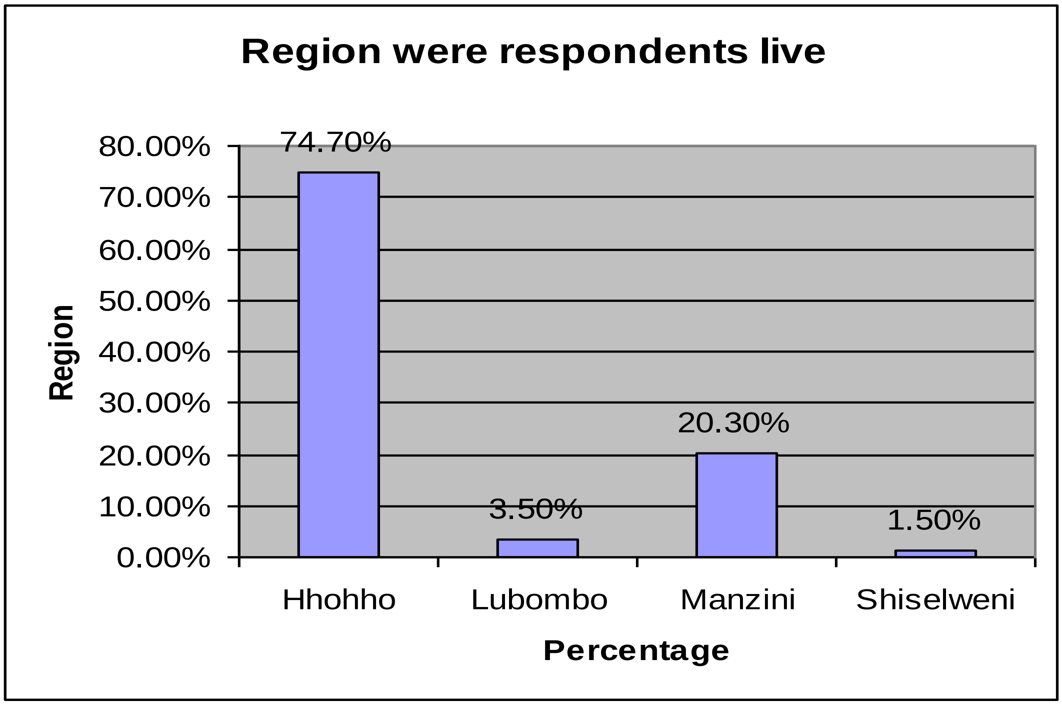

Figure 4.2

Region where respondents live (N=340)

4.3.1.4 Respondents area of residence

Of the respondents, 100% (N=340) answered this question. One hundred and sixty one respondents (16; 47.4%) lived in rural areas while 52.6% (*f*=179) lived in urban areas (refer to figure 4.3). The respondents were almost evenly distributed between the urban and rural areas.

The MOH (2008:12 and 24) reports a similar even picture in the distribution of HIV prevalence in the rural (37.9%) and urban (42.7%) areas of Swaziland. This can be attributed to the fairly mobile population and the small size of the country.

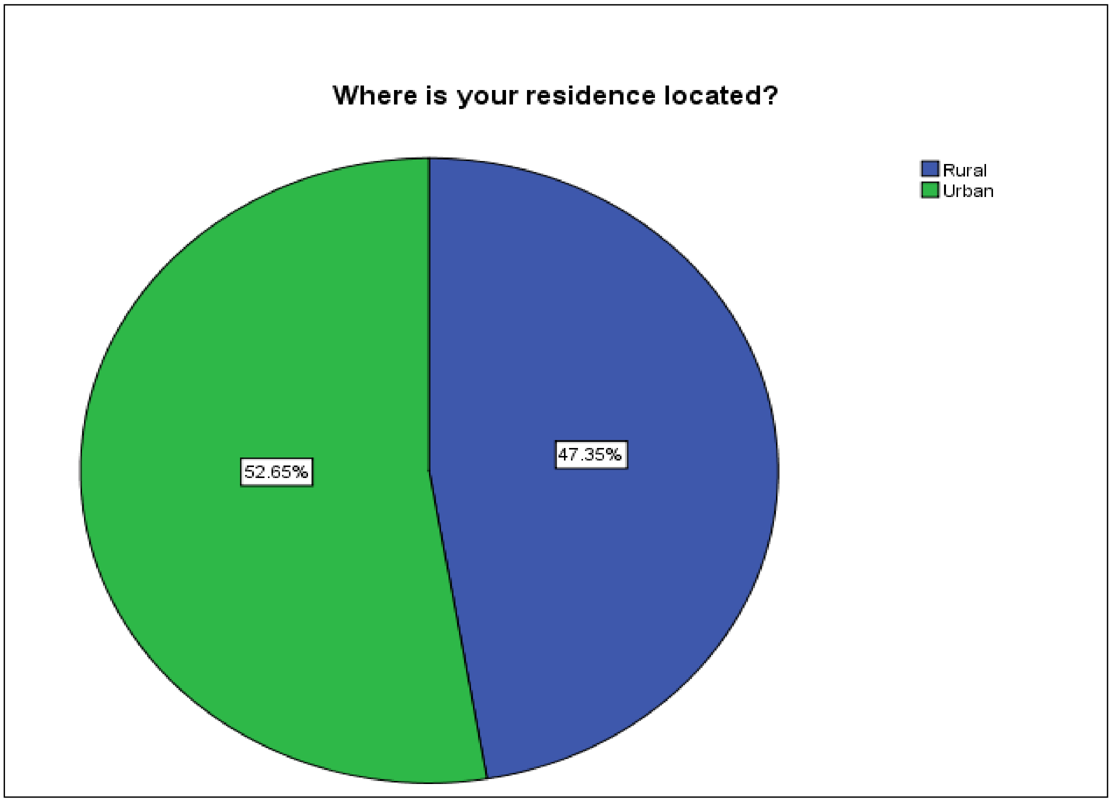

Figure 4.3

Respondents area of residence (N=340)

4.3.1.5 Marital status of the respondents

All respondents (100%; N=340) answered this question. The responses to this item are as follows: 37% (*f*=126) respondents were married; 32.1% (*f*=109) were co-habiting; 16.8% (*f*=57) were single; 8.8% (*f*=30) were widows or widowers; 2.9% (*f*=10) were divorced or separated and 2.4% (*f*=8) of the respondents did not fall under any of the named categories (refer to figure 4.4). Sixty nine point one (69.1%; *f*=235) of respondents were married or co-habiting.

This representation is reflected differently by the 2008 Swaziland HIV sentinel surveillance, which showed that within the general population, 43.8% of married or co-habiting women and 57.6% of previously married or co-habiting women were HIV positive (MOH, 2008:24).

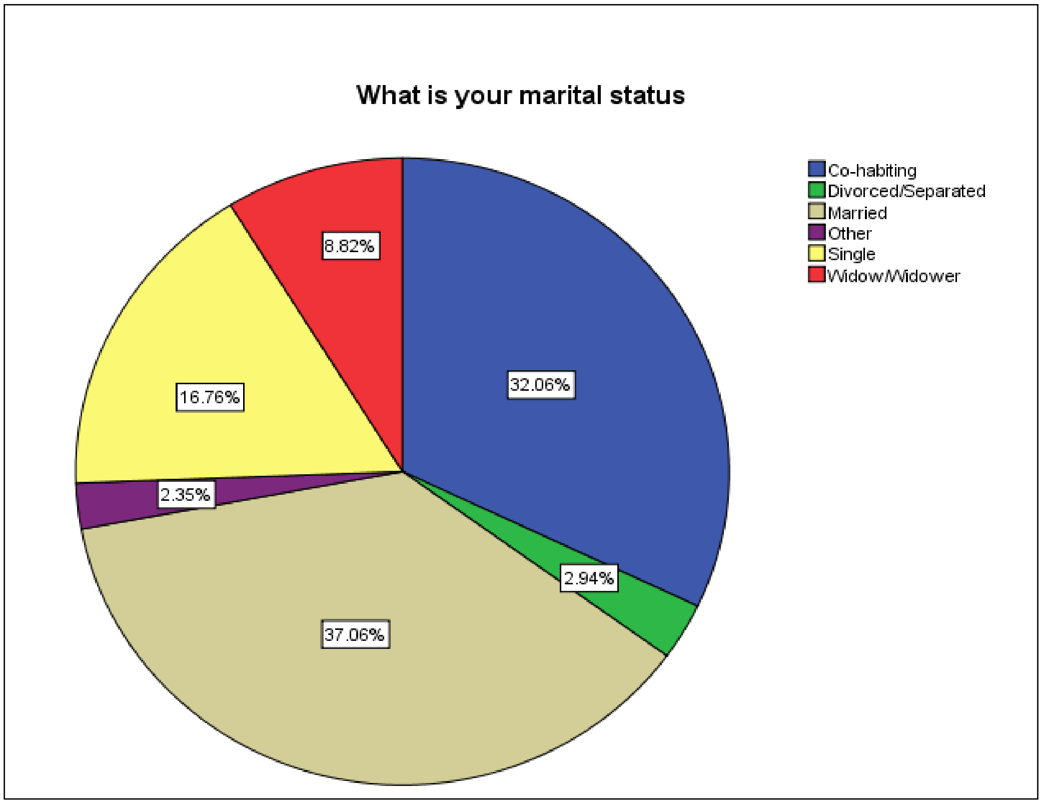

Figure 4.4

Distribution of respondents' marital status (N=340)

4.3.1.6 Respondents highest level of education

All the respondents (N=340) answered this question. Of the respondents, 56.5% (*f*=192) had secondary education as highest level of education; 31.8% (*f*=108) had primary education; 7.4% (*f*=25) had no education; 3.8% (*f*=13) had tertiary education; 0.3% (*f*=1) had non-formal education and 0.3% (*f*=1) had vocational training (refer to figure 4.5).

The SDHS (2008:224) reported HIV prevalence to be lowest among people with higher/tertiary education (27%). As the sample for the current study was selected using probability systematic sampling, the study findings portray a similar trend with only 3.8% of respondents, all HIV positive, having attained a tertiary education as highest level of education.

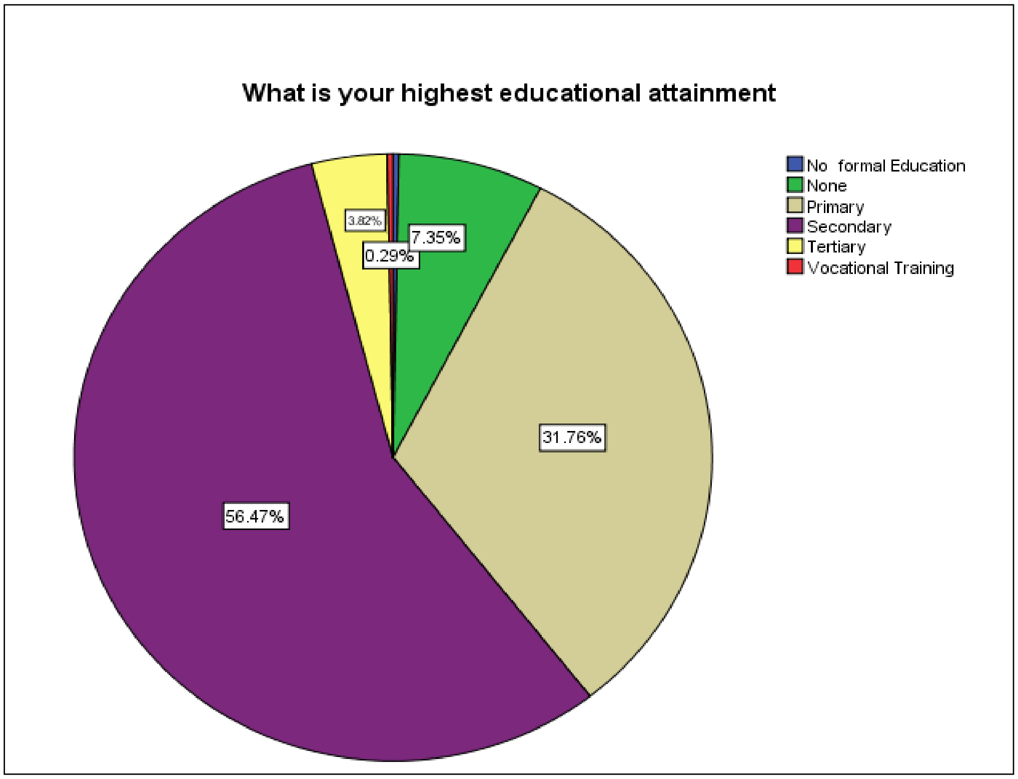

Figure 4.5

Distribution of respondents' education level (N=340)

4.3.1.7 Respondents' religion or religious belief

One hundred percent response (N=340) was recorded for this question and of the respondents, 95.9% (*f*=326) were Christian; 3.5% (*f*=12) were of other religious beliefs (traditional, Bahai) while 0.6% (*f*=2) were Moslems (refer to table 4.3). Wikipedia (2010) reports that Christianity constitutes up to 83%, Islam 1% and other religious beliefs

(Bahai, Hindu, Buddhists and traditionalists) making up the rest of the religious beliefs in Swaziland.

Table 4.3: Respondents' religious belief (N=340)

Religious belief	**Frequency** ***f***	**Percentage** **%**
Christianity	326	95.9
Islam	2	0.6
Other (Traditional & Bahai)	12	3.5
Total	**340**	**100.0**

4.3.1.8 Respondents' employment status

All respondents (N=340) answered this question, and 51.2% (*f*=174) were unemployed; 38.2% (*f*=130) were employed by an institution or company while 10.6% (*f*=36) were self employed (refer to figure 4.6).

Slightly more than half of the respondents (51.2%; *f*=174) were unemployed at the time of the study. This high unemployment rate is probably due to the fact that as HIV disease progresses, the infected person's ability to be productive is hampered. The study unemployment rate is slightly higher than the Swaziland national unemployment rate (40%) reported by the African Global Sister Cities Foundation (AGSCF) (2009) and the World Bank (2011).

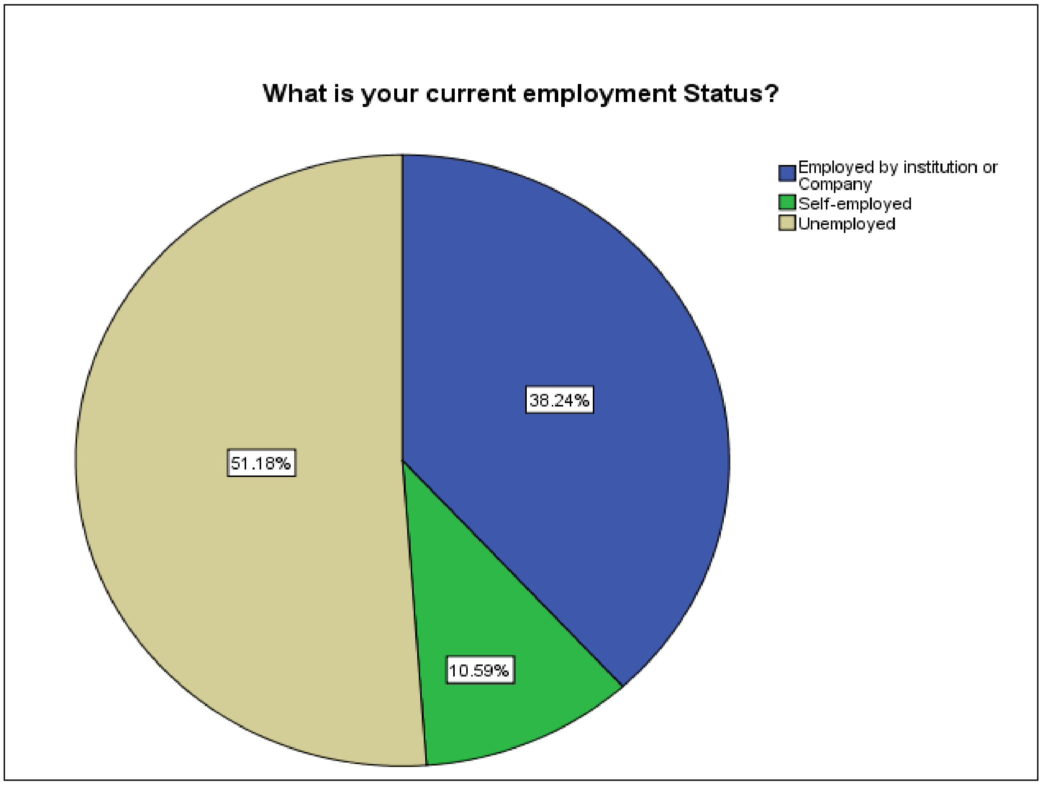

Figure 4.6

Respondents' employment status (N=340)

4.3.1.9 Respondents' nationality

A hundred percent (N=340) response rate was obtained for this item. The majority of respondents, 98.2% (*f*=334) were Swazi nationals and 1.8% (*f*=6) were non-Swazi (refer to figure 4.7).

The findings closely reflect the picture portrayed by Absolute Astronomy (2009) and US State Department (2011), which reports that the majority of Swaziland's population is ethnically Swazi, mixed with a small number of Zulu and white Africans of British origin.

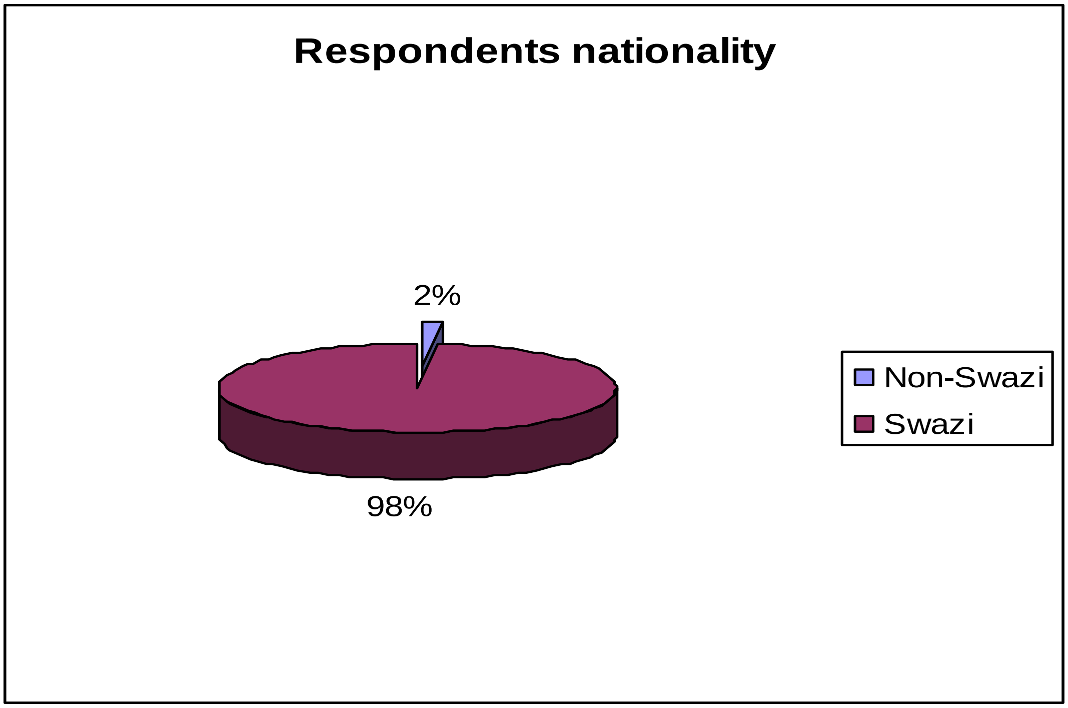

Figure 4.7

Respondents' nationality (N=340)

4.3.2 SECTION TWO: HIV DISCLOSURE AND NON-DISCLOSURE PRACTICES

To explore the disclosure practices of PLWHA on antiretroviral therapy, this section covers the following topics, when an HIV test was first done, to whom HIV status was revealed; disclosure of HIV status to sexual partners; motivating factors for disclosure; response of persons to whom disclosure was made; personal feelings about decision to disclose; perceived benefits of disclosure and the disadvantages of having disclosed HIV status. In addition, this section covers aspects relating to reasons for non-disclosure; persons to whom disclosure of HIV was hoped to be made in future and any perceived benefits of doing so for those who have not disclosed.

4.3.2.1 HIV disclosure status in general

All respondents answered this question (N=340). Of these, 320 (94.1%) had disclosed their HIV status while 20 (5.9%) had never disclosed their HIV status to anyone (refer to table 4.4 and figure 4.8).

The general disclosure rate in this study, 94.1% is closely related to the findings of the Ethiopian study by Deribe et al (2008:5) of 95%, and a South African study by Nachega et al (2005:198), of 90% disclosure.

Table 4.4 Disclosure rates of HIV status in general (N=340)

Disclosure	**Frequency** ***f***	**Percentage** **%**
No	20	5.9
Yes	320	94.1
Total	**340**	100.0

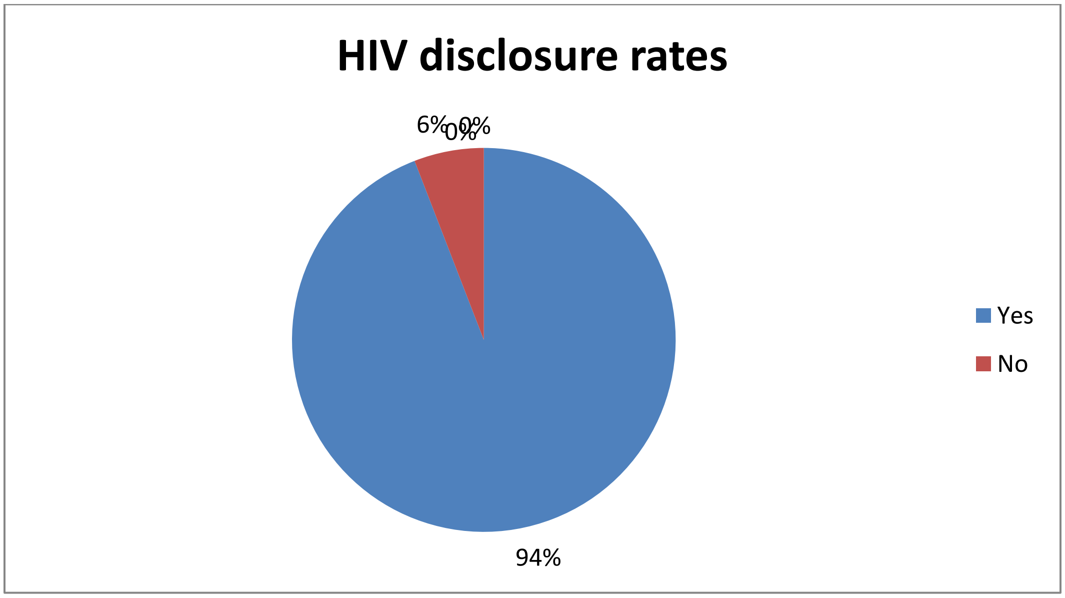

Figure 4.8

General HIV disclosure rates (N=340).

4.3.2.1.1 Disclosed respondents group (n=320)

4.3.2.1.1.1 Time of first HIV test

All respondents (n=320) who answered "yes" to the question on disclosure responded to this question. Of these 320 respondents, 7.8% (*f*=25) tested within 6 months prior to the study; 10.9% (*f*=35) tested between 6 months to 1 year prior to the study; 26.9% (*f*=86) tested 1 to 2 years prior to the research; 32.5% (*f*=104) tested 3 to 4 years and 21.9% (*f*=70) tested for HIV more than 5 years prior to the study (refer to table 4.5).

The study findings show that a majority of respondents (81.3%) took their first HIV test more than a year prior to the time of the study. The highest proportion (32.5%, n=104) took their first HIV test 3 to 4 years prior to the study.

Table 4.5 Time of first HIV test (N=340)

Time test was done	**Frequency *f***	**Percentage %**	**Cumulative frequency**	**Cumulative percentage**
Last 6 months	25	7.8	25	7.8
6 months – 1 year	35	10.9	60	18.7
1 – 2 years	86	26.9	146	45.6
3 – 4 years	104	32.5	250	78.1
More than 5 years ago	70	21.9		
Total	**320**	**100.0**	**320**	**100**

4.3.2.1.1.2 Persons to whom HIV status was revealed

All respondents (100%; n=320) who disclosed answered this question. Of these respondents, 57.5% (*f*=184) disclosed their HIV status to spouses or sexual partners; 15.6% (*f*=50) disclosed to siblings; 11.9% (*f*=38) disclosed to their child (chilren); 7.5% (*f*=24) disclosed to their parents; 2.5% (*f*=8) disclosed to employers; 4.1% (*f*=13) disclosed to friends and 0.9% (*f*=3) disclosed to others (religious/spiritual leaders), (refer to table 4.6 and figure 4.9).

Table 4.6 Persons to whom HIV status was revealed(n=320)

Persons to whom disclose is made	**Frequency** ***f***	**Percentage** **%**
Spouse/partner	184	57.5
Siblings	50	15.6
Children	38	11.9
Parents	24	7.5
Employer	8	2.5
Friends	13	4.1
Other (religious leaders)	3	0.9
Total	**320**	**100.0%**

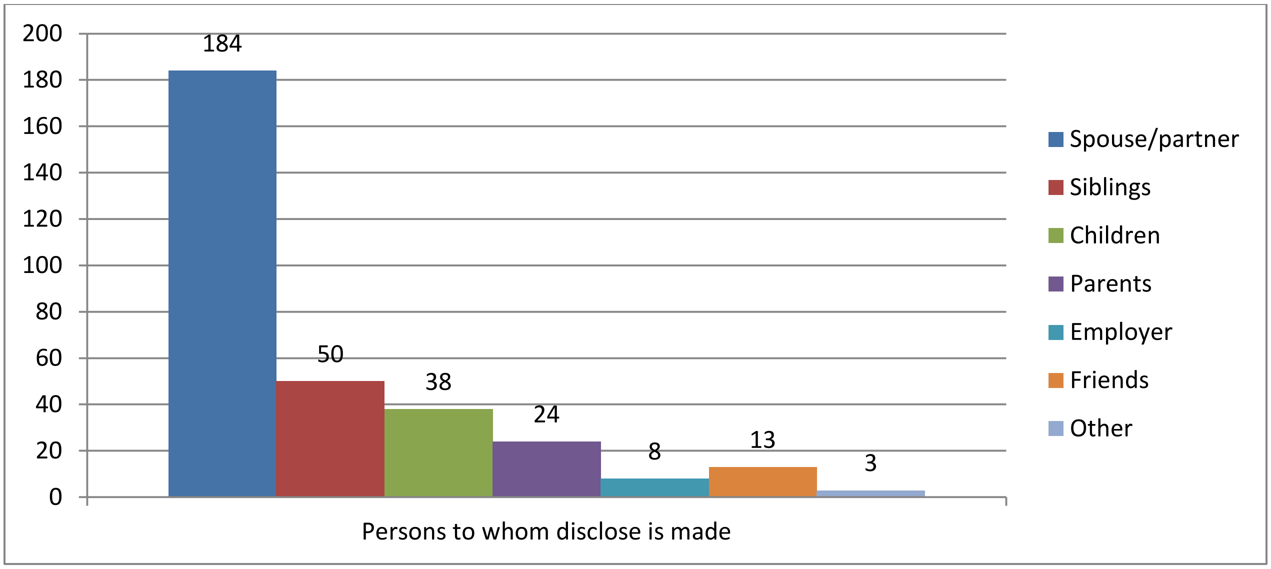

Figure 4.9

Persons to whom HIV status was revealed (n=320)

The study's 57.5% disclosure rate of HIV status to spouses or sexual partners is similar to 61% disclosure rate observed in a Swaziland study by Ericdotter and Skånberg (2005:13) and 64% disclosure rate among men and 51% among women, in a South Africa study by Fougelberg et al (2008:14).

4.3.2.1.1.3 Duration from diagnosis of HIV to first disclosure

All respondents whose answered "yes" to question 1 indicating that they have disclosed their HIV positive status responded to this question (100%, n=320). Of these respondents, 3.1% (*f*=10) indicated less than 1 month from time of diagnosis of HIV to time of disclosure of their HIV positive status; 13.1% (*f*=42) indicated between 1 to 3 months; 21.3% (*f*=68) between 6 to 12 months; 35.3% (*f*=113) between 1 to 3 years; 22.5% (*f*=72) between 3 to 5 years; and 4.7% (*f*=15) more than 5 years (refer to table 4.7).

The duration from time of diagnosis of HIV to disclosure of HIV positive status for 57.8% (*f*=185; n=320) of respondents was between 1 and 5 years, with the largest proportion

(35.3% (*f*=113) falling between 1 to 3 years. From the literature reviewed (refer to chapter 2; section 2.2.5 of this dissertation), it is observed that the tendency or likelihood to disclose HIV status among PLWHA increases with longer or increased duration from time of HIV diagnosis; a similar trend is portrayed in this study (Remien & Bradley, 2007:64E; WHO, 2004:2). However, other studies conducted in Ethiopia and the USA, observed a smaller proportion of PLWHA who delayed disclosure, in contrast to the current study findings (Deribe et al, 2008:5; Niccolai et al, 2006:104).

Table 4.7 Duration from HIV diagnosis to first disclosure (n=320)

Duration from HIV diagnosis to disclosure	**Frequency *f***	**Percentage %**	**Cumulative frequency**	**Cumulative percentage**
Less than 1 month	10	3.1	10	3.1
Between 1 – 3 months	42	13.1	52	16.2
Between 6 – 12 months	68	21.3	120	37.5
Between 1 – 3 years	113	35.3	233	72.8
Between 3 – 5 years	72	22.5	305	95.3
More than 5 years	15	4.7		
Total	**320**	**100.0**	**320**	**100**

4.3.2.1.1.4 Disclosure of HIV status to sexual partners

Some of the items comprising this section were not answered by all the respondents as indicated in table 4.8. This item required that respondents indicate whether they strongly agreed, agreed, disagreed or strongly disagreed with the specific statement regarding disclosure of HIV status to sexual partners. For the purposes of data interpretation, strongly agreed and agree were grouped together and disagree and strongly disagree also grouped together.

Of the 237 respondents who answered this item (n=237), 72.2% (*f*=171) strongly agreed and 16% (*f*=38) agreed that their sexual partners knew about their positive HIV status. Thus, 88.2% of respondents' sexual partners knew about their HIV positive status.

Of the 320 respondents who answered the second item of this question (n=320), 70.9% (*f*=227) disagreed and 22.8% (*f*=73) strongly disagreed that their sexual partners were "entitled" to know their HIV positive status. Thus, 93.7% disagree that their sexual partners are entitled to know their HIV positive status.

Regarding the respondents knowledge of their sexual partners' HIV status, 59.3% (*f*=140; n=236)) strongly agreed and 12.3% (*f*=29; n=236) agreed that they knew their sexual partners' HIV status. In total, 71.6% of the respondents agreed that they knew the HIV status of their sexual partners while 28.4% disagreed that they knew the HIV status of their sexual partners.

With regard to the importance of knowing their sexual partners' HIV status, of the 320 responses (n=320), 71.6% (*f*=229) agreed that it was not important to know the HIV status of their sexual partners while 28.4% (*f*=91) disagreed to the statement.

Table 4.8 Disclosure of HIV status to sexual partners

For this battery of items, the n values are diverse due to non-responses.

Disclosure to sexual partners	Strongly agree	Agree	Disagree	Strongly disagree	Total (n)
My sexual partner(s) know (s) about my HIV positive status	72.2% (*f*=171)	16% (*f*=38)	1.7% (*f*=4)	10.1% (*f*=24)	100% (n=237)
My sexual partner is “entitled” to know my HIV positive status	1.9% (*f*=6)	4.4% (*f*=14)	70.9% (*f*=227)	22.8% (*f*=73)	100% (n=320)
I know the HIV status of my sexual partner(s)	59.3% (*f*=140)	12.3% (*f*=29)	2.1% (*f*=5)	26.3% (*f*=62)	100% (n=236)
Knowing my sexual partner’s HIV status isn’t important	62.8% (*f*=201)	8.8% (*f*=28)	1.9% (*f*=6)	26.5% (*f*=85)	100% (n=320)

The findings indicate that a majority of respondents (88.2%) knew the HIV status of their sexual partners; however, 93.7% did not think that their sexual partners were “entitled” to know their HIV status. Also, 71.6% of the respondents knew the HIV status of their sexual partners and an equal proportion (71.6%) thought at the same time that it was not important to know the HIV status of their sexual partners. Table 4.8 exhibits the details.

4.3.2.1.1.5 Motivation for disclosure of HIV status

Except for the item relating to employment, all items were answered by all respondents who had disclosed their HIV status (100%; n=320). Grouping the strongly agree and agree together and disagree and strongly disagree, the following motivations for disclosure of HIV status among PLWHA on ART are observed (refer to table 4.9).

Of the 320 responses, 95% (*f*=304; n=320) reported that the need for physical and emotional support was a motivator for disclosure and 96.2% (*f*=308; n=320) believed that it would not be the right thing to do not to disclose their HIV positive status. Also, 78.1% (*f*=250; n=320) reported that desperation and no one to turn to were motivations for disclosure, while 67.8% (*f*=217; n=320) of the respondents refuted that the fear of death due to failing health was a motivation for disclosure of their HIV status. Similarly, 97.8% (*f*=313; n=320) disagreed that they were threatened or coerced to disclose their HIV status.

Of the 130 who answered this item, 69.2% (*f*=90; n=130) disagreed that the need for their employment benefits motivated them to disclose their HIV status. Of 320 respondents, 76.5% (*f*=245; n=320) agreed that they were motivated to disclose their HIV status because they knew that their HIV status would be known one way or the other.

Three hundred and five (*f*=305; n=320) 95.3% of the respondents agreed that the need to access HIV treatment motivated them to disclose their HIV status while 270 (84.3%; n=320) agreed that the concern for the health of their sexual partners was a motivator for disclosure. Two hundred and forty two (f=242; n=320;75.6%) respondents agreed that the need to get rid of the stress of keeping their HIV status a secret motivated them to disclose.

The findings indicate that the major motivators for disclosure were the belief that non-disclosure of HIV status was not the right thing to do, 96.2% (*f*=308; n=320); the need to access HIV treatment, 95.3% (f=305; n=320); the need for physical and emotional support, 95% (*f*=304;n=320); concern for the health of sexual partners, 84.3% (*f*=270; n=320); desperation and no one to turn to, 78.1% (*f*=250; n=320); the thought that the HIV status would be known in one way or the other, 76.5% (*f*=245; n=320); and the need to get rid of the stress of keeping the HIV status a secret, 75.6% (*f*=242; n=320).

The percentage of respondents who disclosed because of the need to access treatment in this study, 95.3% (*f*=305; n=320), is much higher than the observations made in a Ugandan study by Kadowa and Nuwaha (2009:28), of 33% (*f*=46; n=139). Also, the percentage of respondents who were motivated to disclose due to the need for physical and emotional support in this study, 95% (*f*=304; n=320), is far higher than the observations by Kadowa and Nuwaha (2009:28) , of 35% (*f*=48; n=139), in Uganda.

On the other hand, the main factors that did not motivate disclosure included threats or coercion, 97.8% (f=313; n=320); the need for employment benefits, 69.2% (f=90; n=130); and the fear of death due to failing health, 67.8% (*f*=217; n=320).

Table 4.9 Motivation for disclosure of HIV status

For this battery of items, the n values are diverse due to non-responses.

Motivators for disclosure	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Total (n)**
I needed physical and emotional support	73.8% (*f*=236)	21.2% (*f*=68)	3.4% (*f*=11)	1.6% (*f*=5)	100% (n=320)
I believe it wouldn't be the right thing to do if I didn't disclose	65.3% (*f*=209)	30.9% (*f*=99)	1.9% (*f*=6)	1.9% (*f*=6)	100% (n=320)
I was desperate and had no one or no where to turn to.	53.1% (*f*=170)	25% (*f*=80)	13.1% (*f*=42)	8.8% (*f*=28)	100% (n=320)
I knew I could die at any time due to my failing health/illness	21.6% (*f*=69)	10.6% (*f*=34)	15.3% (*f*=49)	52.5% (*f*=168)	100% (n=320)
I was coerced/ threatened to do so.	1.6% (*f*=5)	0.6% (*f*=2)	7.5% (*f*=24)	90.3% (*f*=289)	100% (n=320)
I needed my employment benefits	23.1% (*f*=30)	7.7% (*f*=10)	18.4% (*f*=24)	50.8% (*f*=66)	100% (n=130)
It would be known one way or the other	48.4% (*f*=155)	28.1% (*f*=90)	14.1% (*f*=45)	9.4% (*f*=30)	100% (n=320)
I needed access to HIV treatment, so I had to disclose	78.8% (*f*=252)	16.5% (*f*=53)	3.1% (*f*=10)	1.6% (*f*=5)	100% (n=320)
I was concerned about my sexual partners health	50.3% (*f*=161)	34% (*f*=109)	11.9% (*f*=38)	3.8% (*f*=12)	100% (n=320)
I needed to get rid of the stress of keeping my status a secret	45.3% (*f*=145)	30.3% (*f*=97)	19.4% (*f*=62)	5% (*f*=16)	100% (n=320)

4.3.2.1.1.6 Responses of people to whom HIV status was revealed

From the table 4.10, of the 320 (n=320) respondents who disclosed and who answered this item, 71.6% (*f*=229; n=320) disagreed that the people to whom they disclosed their HIV status were angry and upset with them; 68.1% (*f*=218; n=320) disagreed that they were discriminated against; 64.4% (*f*=206; n=320) disagreed that people were disappointed with them; and 70.3% (*f*=225; n=320) disagreed that they faced judgmental reactions from those to whom they revealed their HIV status. Of he fore mentioned 320 responses, 57.8% (*f*=185; n=320) agreed that the people they revealed their HIV status to were indifferent to them and 42.2% (*f*=135; n=320) disagreed to this statement.

On the other hand, of these 320 respondents, 93.4% (*f*=299; n=320) agreed that the people they revealed their HIV status to were caring and supporting; and 94.3% (*f*=302; n=320) found them sympathetic. Of the 54 responses to the item on ‘people disclosed to were encouraging’ all (*f*=54; n=54) indicated that those they disclosed their status to were encouraging (refer to table 4.10). The reason for the low response rate to this item is however not clear.

The high rates of positive responses from people to whom HIV status was disclosed in this study, being caring and supportive, 93.4% and being sympathetic, 94.3%, are closely related to the findings of an Indian study conducted by Taraphdar et al (2007:280), or 87.5%; a South African study conducted by Norman et al (2007:1778), of 94% and a French study conducted by Brou et al (2007:1915, of 82.1%, of positive responses from people to whom PLWHA had disclosed their HIV status.

Table 4.10 ***Responses of people to whom HIV status was revealed***

For this battery of items, the n values are diverse due to non-responses.

Responses/reactions of people disclosed to	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Total (n)**
Angry and upset with me	12.8% (*f*=41)	15.6% (*f*=50)	39.1% (*f*=125)	32.5% (*f*=104)	100% (n=320)
Discriminatory towards me	13.1% (*f*=42)	18.8% (*f*=60)	30.6% (*f*=98)	37.5% (*f*=120)	100% (n=320)
Disappointed with me	15% (*f*=48)	20.6% (*f*=66)	28.8% (*f*=92)	35.6% (*f*=114)	100% (n=320)
Judgmental towards me	11.6% (*f*=37)	18.1% (*f*=58)	36.5% (*f*=117)	33.8% (*f*=108)	100% (n=320)
Indifferent towards me	6.3% (*f*=20)	51.5% (*f*=165)	35.9% (*f*=115)	6.3% (*f*=20)	100% (n=320)
Caring and supportive towards me	77.5% (*f*=248)	15.9% (*f*=51)	4.7% (*f*=15)	1.9% (*f*=6)	100% (n=320)
Sympathetic towards me	77.8% (*f*=249)	16.5% (*f*=53)	3.8% (*f*=12)	1.9% (*f*=6)	100% (n=320)
Encouraging towards me	85.2% (*f*=46)	14.8% (*f*=8)	0% (*f*=0)	0% (*f*=0)	100% (n=54)

4.3.2.1.1.7 Feeling about decision to disclose HIV status

Of the 320 respondents that disclosed, all answered this item. Of these 320 respondents, 286 (89.4%) disagreed that they regretted disclosing their HIV status, 300 (93.8%) agreed that they felt at peace (less stressed) after having disclosed their HIV status, and 205 (64.1%) agreed that they felt no different after disclosing. Forty six point nine (46.9%) (*f*=150; n=320) of the respondents felt (agreed) that they would never disclose their status to anyone again while 53.1% (*f*=170; n=320) disagreed with the same statement (refer to table 4.11).

Of the 320 respondents, 273 (85.3%) agreed that they felt that they will disclose their HIV status to all new sexual partners. Also, of the 320 respondents, 296 (92.6%) disagreed that they feel exposed after disclosing their HIV status. While 288 (90%) of 320 respondents agreed that they feel free and unburdened after disclosing. Another 282 (88.1%) of 320 respondents disagreed that they felt detached from friends and family after disclosing their HIV status. Similarly, 234 (73.1%) of 320 respondents disagreed that they felt guilty and sad about their decision to disclose, and 220 (68.8%) also disagreed that they felt they cannot be part of any public activities anymore.

The findings show that the respondents had more positive feelings about their decision to disclose their HIV status as 93.8% (*f*=300; n=320) feel at peace; 90% (*f*=288; n=320) feel free and unburdened and, 85.3% (*f*=273; n=320) will disclose to any new sexual partner. On the negative side, 31.2% (*f*=100; n=320) cannot be part of any public activities; 26.9% (*f*=86; n=320) feel guilty and sad, 11.9% (*f*=38; n=320) feel detached; 10.6% (*f*=34; n=320) regret their decision; and 7.4% (*f*=24; n=320) feel exposed.

Table 4.11 Feelings about the decision to disclose (n=320)

Feelings about decision to disclose HIV status	Strongly agree	Agree	Disagree	Strongly disagree	Total (n)
I regret that decision	4.7% (*f*=15)	5.9% (*f*=19)	11% (*f*=35)	78.4% (*f*=251)	100% (n=320)
I feel at peace (less stressed)	77.2% (*f*=247)	16.6% (*f*=53)	5.3% (*f*=17)	0.9% (*f*=03)	100% (n=320)
Makes no difference	16.3% (*f*=52)	47.8% (*f*=153)	32.8% (*f*=105)	3.1% (*f*=10)	100% (n=320)
I will never disclose to any one again	23.8% (*f*=76)	23.1% (*f*=74)	25.3% (*f*=81)	27.8% (*f*=89)	100% (n=320)
I will disclose to any new sex partner(s)	74.1% (*f*=237)	11.2% (*f*=36)	5.6% (*f*=18)	9.1% (*f*=29)	100% (n=320)
I feel exposed	2.8% (*f*=9)	4.6% (*f*=15)	17.2% (*f*=55)	75.4% (*f*=241)	100% (n=320)
I feel free and unburdened	78.8% (*f*=252)	11.2% (*f*=36)	6.2% (*f*=20)	3.8% (*f*=12)	100% (n=320)
I feel detached from my friends and family	5% (*f*=16)	6.9% (*f*=22)	13.4% (*f*=43)	74.7% (*f*=239)	100% (n=320)
I feel guilty and sad	9.4% (*f*=30)	17.5% (*f*=56)	20.9% (*f*=67)	52.2% (*f*=167)	100% (n=320)
I feel I can not be part of any public activities anymore	13.1% (*f*=42)	18.1% (*f*=58)	16.6% (*f*=53)	52.2% (*f*=167)	100% (n=320)

4.3.2.1.1.8 Perceived benefits of disclosure

This question was an open-ended type question and 259 respondents (n=259) gave responses to this item. The responses were grouped under the named themes and the respective frequencies computed (refer to table 4.12).

Of the 259 responses, 158 (61%) received material support as a benefit for disclosure; 30 (11.5%) received counseling and emotional support; 19 (7.3%) have peace of mind;

22 (8.4%) are living “positively”; and 16 (6.2%) of the respondents reported that they had gained “freedom” and emotional relief as a benefit of disclosing their HIV status.

The top five benefits observed in this current study are: material support (61%), counseling/emotional support (11.5%), living positively with HIV (8.4%), peace of mind (7.3%) and gained freedom/emotional relief (6.2%) are also reflected by WHO (2004:1), Norman et al (2007:1775), Ramos (2011), NAM (2008) and Bouillon et al (2007:S92) (refer to chapter 2; section 2.2.3).

Table 4.12 Perceived benefits of disclosure (n=259)

Benefits	**Frequency** ***f***	**Percentage** **%**
Acceptance from family and friend	3	1.2
Gained access to treatment	3	1.2
Received advice about health	3	1.2
Have a peace of mind	19	7.3
Received material support	158	61
Received Counseling/ emotional support	30	11.5
Received encouragement	1	0.4
Gained freedom/emotional relief	16	6.2
Got married	1	0.4
Improved relationship with spouse	1	0.4
Received spiritual “uplifting”	1	0.4
Living positively with HIV	22	8.4
Sexual Partner got tested for HIV	1	0.4
Total	**259**	**100.0**

4.3.2.1.1.9 Perceived disadvantages of disclosure of HIV status

This question was also an open-ended question and 270 of the respondents (n=270) answered this item. The responses were grouped under themes and the frequencies and percentages computed respectively (refer to table 4.13).

Of the 270 respondents, 159 (58.9%) said there were no disadvantages to disclosing one's HIV status, 61 (22.6%) reported that disclosure could lead to stigmatization and 44 (16.2%) mentioned discrimination as a disadvantage of disclosure of HIV status.

Table 4.13 Perceived disadvantage of disclosure (n=270)

Disadvantage of disclosure	**Frequency** ***f***	**Percentage** **%**
Causes denial from family and friends	1	0.4
One may be discriminated against	44	16.2
People gossip about your status	1	0.4
Creates misunderstanding and tension	2	0.7
May lead to Isolation	1	0.4
Leads to stigmatization	61	22.6
May cause stress	1	0.4
No disadvantages	159	58.9
Total	**270**	**100.0**

4.3.2.1.2 Non-disclosed respondent group (n=20)

Of the respondents (N=340), 20 (6%) had not disclosed their HIV status to anyone. The next set of questions focuses on this category of PLWHA.

4.3.2.1.2.1 Time when HIV test was first taken (n=20)

Of these 20 respondents, 7 (35%) had taken their first HIV test 6 months prior to the study; 5 (25%) had taken their first HIV test between 6 to 12 months prior to the study; 6 (30%) between 1 to 2 years prior to the study; and 2 (10%) between 3 to 4 years prior to the study (refer to table 4.14).

The findings show that up to 60% (*f*=12; n=20) of the respondents who had not disclosed their HIV status had taken their first HIV test under a year prior to the study, compared to 18.7% (*f*=60; n=320) of respondents among the group that disclosed their HIV status (refer to table 4.5 under section 4.3.2.1.1.1 of this chapter).

Table 4.14 Time when HIV test was first taken (n=20)

Time of first HIV test	**Frequency *f***	**Percentage %**	**Cumulative frequency**	**Cumulative percentage**
Last 6 months	7	35	7	35
6 months to 1 year	5	25	12	60
1 to 2 years	6	30	18	90
3 to 4 years	2	10	20	100
More than 5 years ago	0	0		
Total	**20**	**100.0**	**20**	**100**

4.3.2.1.2.2 Reasons for non-disclosure of HIV positive status

All 20 non-disclosure respondents (100%; n=20) answered this item (refer to table 4.15). Of the 20, 16 (80%), agreed that the fear of being stigmatized, being rejected and being discriminated against was reason for the non-disclosure of their HIV status; 12 (60%) of the 20 respondents disagreed that the need to avoid a separation or divorce was reason for their non-disclosure, while 9 of 12 (75%) mentioned that the need to protect their employment/source of income caused them not to disclose their HIV status.

Of the 20 respondents, 13 (65%) disagreed that the fear of being physically and emotionally abused by spouses/sexual partners contributed to their non-disclosure of HIV status, while 18 (90%) of the 20 respondents felt that the time to disclose their HIV status was not yet right. The responses were almost equally distributed among those who agreed (55%; *f*=11) and those who disagreed (45%; *f*=9), that the fear of being accused of infidelity was reason for their non-disclosure of HIV status. Similarly, 50% (*f*=10) of the respondents agreed and 50% (*f*=10) disagreed that the fear of upsetting/disrupting family members contributed to their non-disclosure; while 60% (*f*=12) agreed that they did not disclose their HIV status because they were still coming to terms with the idea of being HIV positive (refer to table 4.15).

The findings reveal at this point that the fear of being stigmatized, rejected and discriminated against, the need to protect employment/source of income, the feeling that the time to disclose was not yet right and the need for time to come to terms with the HIV positive status first, were the main reasons for non-disclosure. Eighty percent (80%; f=16; n=20) of those who did not disclose sighted stigmatisation as reason for non-disclosure compared to 22.6% (*f*=61' n=270) who sighted stigmatisation as a disadvantage of disclosure, among those who disclosed (refer to table 4.13 section 4.3.2.1.1.9 of this chapter). The significance of these factors will be tested later in the chapter (refer to section 4.3.5.1 to 4.3.5.5).

Table 4.15 Reasons for non-disclosure of HIV status (n=20)

Reasons for non disclosure	Strongly agree	Agree	Disagree	Strongly disagree	Totals (n)
I fear being stigmatized, rejected and discriminated	80% (*f*=16)	0% (*f*=0)	10% (*f*=2)	10% (*f*=2)	100% (n=20)
I need to avoid a separation or divorce	25% (*f*=5)	15% (*f*=3)	20% (*f*=4)	40% (*f*=8)	100% (n=20)
I need to protect my employment/source of income	50% (*f*=6)	25% (*f*=3)	16.7% (*f*=1)	8.3% (*f*=2)	100% (n=12)
I fear physically and emotionally being abused by my spouse/partners	25% (*f*=5)	10% (*f*=2)	25% (*f*=5)	40% (*f*=8)	100% (n=20)
I feel the time to disclose my status is not yet right	50% (*f*=10)	40% (*f*=8)	5% (*f*=1)	5% (*f*=1)	100% (n=20
I fear being accused for infidelity	35% (*f*=7)	20% (*f*=4)	10% (*f*=2)	35% (*f*=7)	100% (n=20)
I need to come to terms with the idea of being HIV + first	45% (*f*=9)	15% (*f*=3)	15% (*f*=3)	25% (*f*=5)	100% (n=20)
I fear upsetting/disrupting my family members	30% (*f*=6)	20% (*f*=4)	10% (*f*=2)	40% (*f*=8)	100% (n=20)

4.3.2.1.2.3 Preferred persons to disclose to HIV status in future

All 20 non-disclosed respondents(100%) answered this question. Of these 20 respondents, 9 (45%) preferred to disclose their HIV status to their spouse/sexual partners; 4 (20%) indicated that they will not disclose to anyone in the future; 3 (15%) were prepared to disclose to their children; and 2 (10%) to parents (refer to table 4.16).

Table 4.16 Preferred persons to disclose to in future (n=20)

Persons to whom disclose is made	**Frequency** ***f***	**Percentage** **%**
Spouse/partner	9	45
Siblings	1	5
Children	3	15
Parents	2	10
Employer	0	0
Friends	0	0
Other (religious leaders)	1	5
None	4	20
Total	**20**	**100.0%**

4.3.2.1.2.4 Perceived benefits of disclosure

This item was an open-ended question and only 10 respondents (n=10) of the 20 respondents who did not disclose, responded to this item. The responses were grouped under sub-themes and the respective frequencies and percentages computed accordingly. Of these 10 who responded, 40% (*f*=4; n=10), indicated that disclosure of HIV status could help to obtain material support from family and friends, 20% (f=2; n=10) indicated that disclosure could facilitate access to medical care for the infected person; and another 20% (*f*=2; n=10) of the respondents indicated that disclosure could facilitate access to counseling services. One respondent (*f*=1; n=10;10%) indicated that disclosure could help to plan for the future while another 10% (f=1; n=10) indicated that disclosure does not have any benefit (refer to table 4.17).

Sixty one (61%) reported increased material support as one of the benefits of disclosure, among those who disclosed compared to 40% among those who did not disclose. Also, 11.5% reported access to counseling and emotional support among those who disclosed compared to 20% among those who did not disclose their HIV status in this study. The benefits of disclosure cited by those who did not disclose as discussed above are also reported by WHO (2004:1), Norman et al (2007:1775), Ramos (2011), NAM (2008) and Bouillon et al (2007:S92) (refer to table 4.12 under section 4.3.2.1.1.8 and chapter 2; section 2.2.3 of this dissertation).

Table 4.17 Perceived benefits of disclosure (n=10)

Perceived benefits of disclosure	**Frequency** ***f***	**Percentage** **%**
Facilitates access to medical care	2	20
Facilitates access to counseling	2	20
Helps to plan for the future	1	10
Helps to obtain material support	4	40
No benefit	1	10
Total	**10**	**100%**

4.3.3 SECTION THREE: SEXUAL PRACTICES

4.3.3.1 Age of start of menstruation (menarche)

This item was to be answered by females only; therefore “not applicable” here refers to males and this item was omitted in the frequency table (refer to table 4.18 and figure 4.10). All females (n=256) answered this question.

Of these 256 respondents, 1 (0.4%) started her menstrual cycles before the age of 10 years; 2 (0.8%) at the age of 10 years; 4 (1.6%) at the age of 11 years; 14 (5.4%) at the age of 12 years; 34 (13.3%) at the age of 13 years; 59 (23%) at the age of 14 years; 64 (25%) at the age of 15 years; and 78 (30.4%) when they were above 15 years of age.

Of the 256, 21.5% (f= 55; n=256) started their menstrual cycles before the age of 14 years. The findings of a study conducted by Glynn, Kayuni, Floyd, Banda, Francis-Chizororo, Tanton, Molesworth, Hemmings, Crampin and French (2010), in northern Malawi, observed that; 55% of women had their menarche at less than 14 years compared to 21.5% in this current study.

Table 4.18 Age of menarche (start of menstruation) (n=256)

Age in years	**Frequency** ***f***	**Percentage %**	**Cumulative frequency**	**Cumulative Percentage**
<10 years	1	0.4	1	0.4
10 years	2	0.8	3	1.2
11 years	4	1.6	7	2.8
12 years	14	5.4	21	8.2
13 years	34	13.3	55	21.5
14 years	59	23.0	114	44.5
15 years	64	25.0	178	69.5
>15 years	78	30.5		
Total	**256**	**100**	**256**	**100**

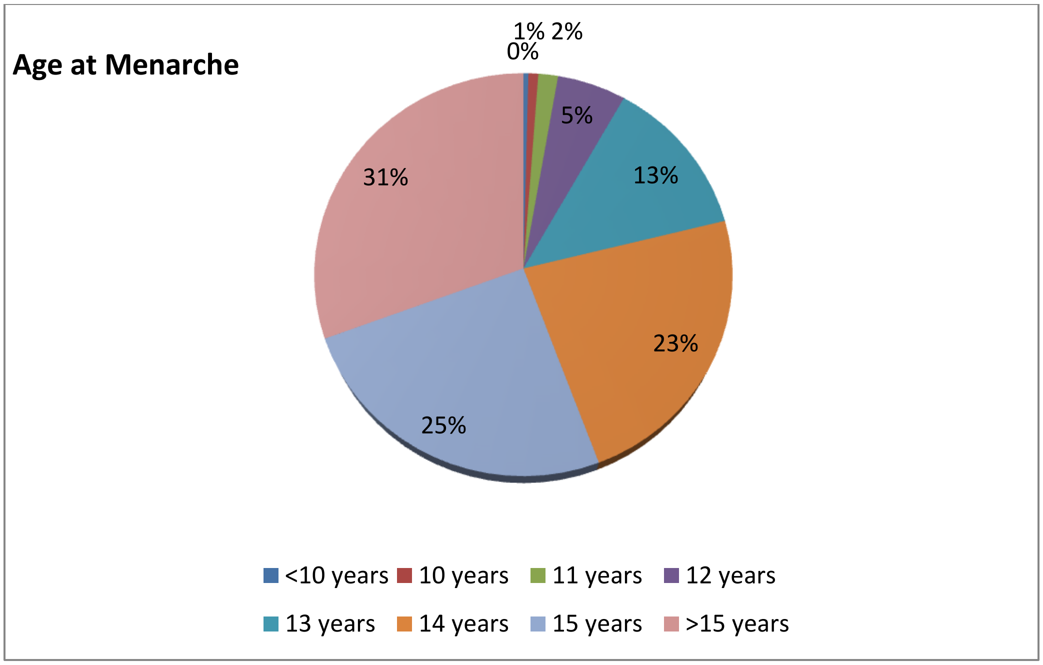

Figure 4.10

Age of Menarche (n=256)

4.3.3.2 ***Age at first sexual intercourse (Sexual debut)*** (N=340)

All respondents (100%; N=340) answered this question. Of the 340, none (0%) had had their first sexual intercourse by the age of 11 years. Two (*f*=2; 0.6%) had their first sexual intercourse at the age of 12 years, 5 (1.5%) at the age of 13 years, 8 (2.3%) at the age of 14 years, 30 (8.8%) at the age of 15 years and the majority, 295 (86.8%) had their first sexual intercourse when they were above the age of 15 years. All respondents had had sexual intercourse at some point in their life (refer to table 4.19 and figure 4.11).

Most of the respondents begun to be sexually active above the age of 15 years and these findings are closely related to that reported by AMICAALL-Swaziland (2007) , who observed 60.6% of males and 61.3% of females had sexual debut between 15 to 19 years of age. Similarly, a study conducted by Glynn et al (2010), in northern Malawi observed the median age for sexual debut for women was 17.5 years while for men it was 18.8 years.

Table 4.19 Age at first sexual intercourse (sexual debut) (N=340)

Age in years	Frequency *f*	Percentage %
<10 years	0	0
10 years	0	0
11 years	0	0
12 years	2	0.6
13 years	5	1.5
14 years	8	2.3
15 years	30	8.8
> 15 years	295	86.8
Never had sex	0	0
Total	**340**	**100.0**

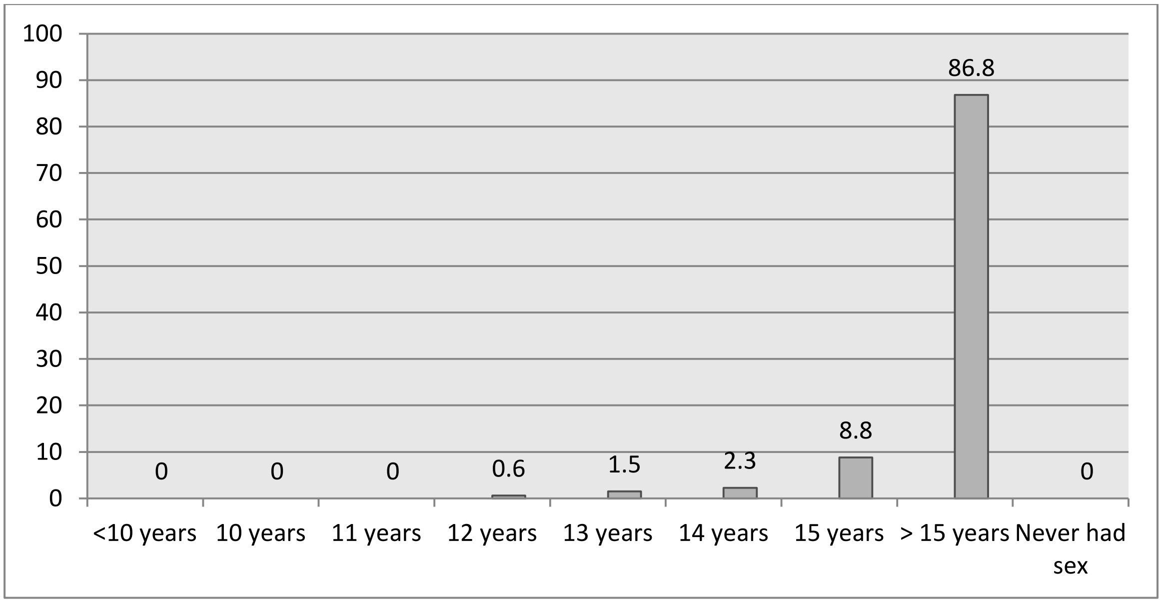

Figure 4.11

Age of sexual debut (N=340).

4.3.3.3 Number of biological children alive

All respondents (100%; N=340) answered this question. Of the 340, 38 (11.2%) had no living biological children; 137 (40.3%) had 1 to 2 living biological children; 131 (38.5%)

had 3 to 5 children; and 34 (10%) had more than 5 living biological children (refer to table 4.20 and figure 4.12).

The bigger proportions, 40.3% (*f*=137; n=340) had 1 or 2 children and 38.5% (*f*=131; n=340) had 3 to 5 living biological children. The study findings are closely related to the SDHS (2006-2007:101) findings, which observed that 41.4% of Swazi women and 35.2% of men consider 2 children to be an ideal number. In the same SDHS study, 19.2% of women and 25.9% of men preferred to have 3 children while 15.4% of women and 19.1% of men considered having 4 children; and 7.5% of women and 13.4% of men considered 5 and more children to be the ideal number of children.

Table 4.20 Number of biological children alive (N=340)

Number of children alive	**Frequency *f***	**Percentage %**
None	38	11.2
1-2	137	40.3
3-5	131	38.5
>5	34	10.0
Total	340	100.0

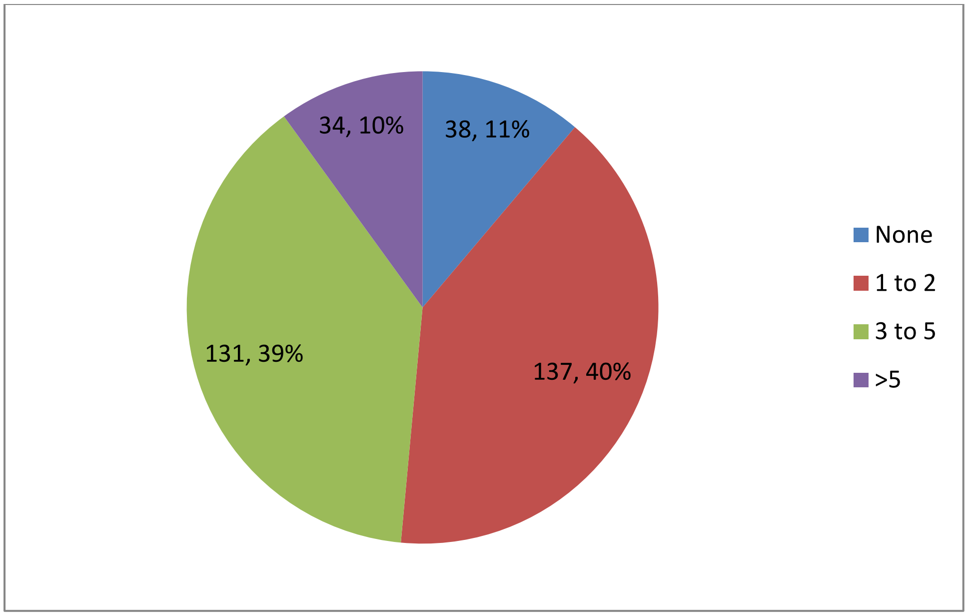

Figure 4.12

Number of biological children alive (N=340)

4.3.3.4 Number of children hoped for in life

All respondents (100%; N=340) answered this question. Of the 340, 11 (3.2%) did not hope/wish to have any more children; 106 (31.2%) hoped to have 1 to 2 children; 154 (45.3%) hoped to have 3 to 5 children; and 45 (13.2%) hoped to have more than 5 children in total; and 24 (7.1%) were not decided on the total number of biological children they wished to have (refer to table 4.21 and figure 4.13).

The larger proportion of respondents, 45.3% (*f*=154; n=340) hoped to have 3 to 5 biological children in total. Similarly, the SDHS (2006-2007:98) reported that 29.1% of Swazi women desired to have more children compared to 44% of men. The desire to have children as reported by the SDHS, was related to the number of living children that a person had. In a Nigerian study conducted by Garko (2007:125), most PLWHA expressed the desire to have children especially those who did not already have children. Also in the study by Chama et al (2007:814), it was observed that although 26.3% of PLWHA had no living child, 71.4% expressed the desire to have children.

In a Nigerian study by Iliyasu et al (2009:77), 167 (65.5%) of females and 52 (61.2%) of males expressed a desire to have more children, and out of these, 16 (7.3%) wanted to have one child, 106(48.4%) wanted to have two children and 86(40.2%) wanted to have 3 and more children. The relationship between the number of living children one has and the desired number (more) of children is further explored in section 4.3.5.5.4 and table 4.92).

Table 4.21 Number of biological children hoped for in life (N=340)

Number of children hoped for in life	**Frequency** ***f***	**Percentage** **%**
None	11	3.2
1-2 Children	106	31.2
3-5 Children	154	45.3
>5 children	45	13.2
Not decided	24	7.1
Total	**340**	**100.0**

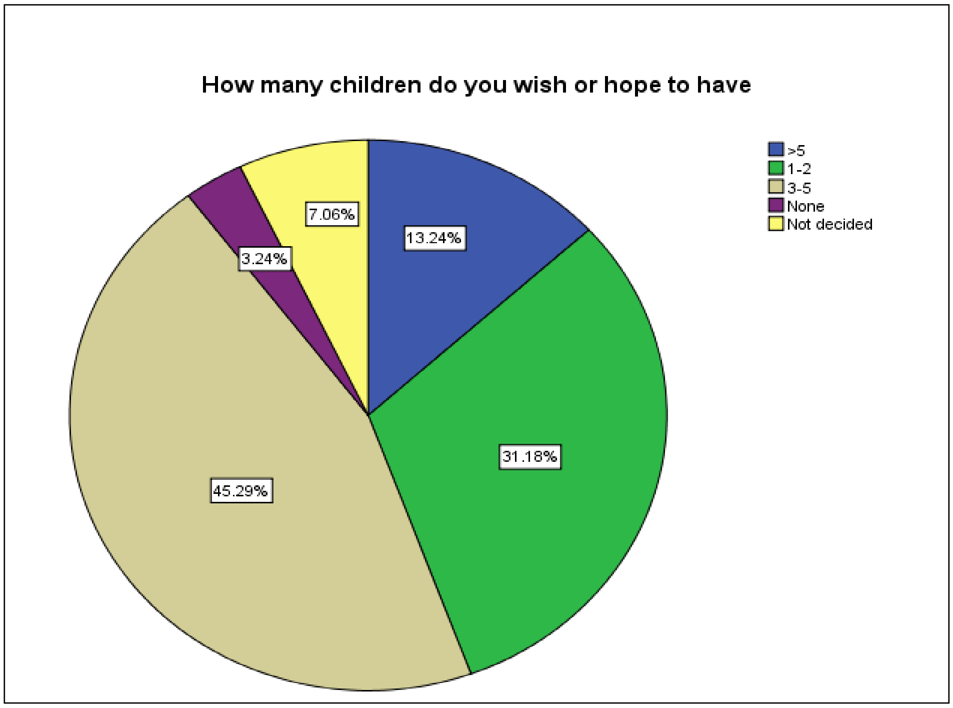

Figure 4.13

Number of children hoped for in life (N=340)

4.3.3.5 Type of relationship with sexual partners

All respondents (100%; N=340) answered this item. Of these 340, 107 (31.5%) described the relationship with their sexual partners to be casual; 153 (45%) had steady sexual relationships; and 80 (23.5%) had no sexual partners at the time of the study (refer to table 4.22 and figure 4.14). Similar findings to the current study were observed in a study conducted in South Africa that observed that 50% of PLWHA had steady sexual partners while 30% had no sexual partners. Also a study conducted in Uganda showed that 37% of sexually active PLWHA had regular/steady sexual partners while 25% had casual sexual partners (Nachega et al, 2005:198; Bunnell et al, 2006:88).

Table 4.22 Type of relationship with sexual partners (N=340)

Type of relationship	**Frequency *f***	**Percentage %**
Casual	107	31.5
Steady	153	45.0
No sexual Partner	80	23.5
Total	**340**	**100.0**

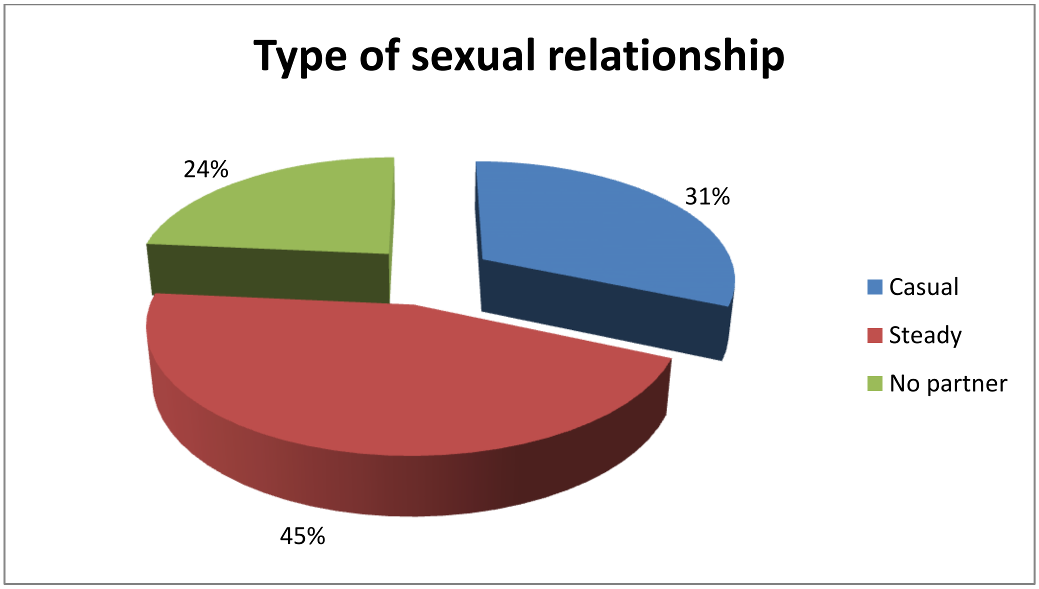

Figure 4.14

Type of sexual relationships (N=340)

4.3.3.6 Number of sexual partners

All the respondents (100%; N=340) answered this question. Of the respondents, 66.2% (*f*=225; N=340)) had had only one sexual partner 3 to 6 months prior to the study; 25.9% (*f*=88; N=340) had no sexual partners;, 7.7% (*f*=26; N=340)) had had 2 to 5 sexual partners; and 0.3% (*f*=1; N=340) had had more than 5 sexual partners 3 to 6 months prior to the study (refer to figure 4.15).

The majority (66.2%) of respondents had had only one sexual partner in the 3 to 6 months prior to the study. Observations made in a study conducted in Uganda revealed that the majority (80%) of sexually active PLWHA had only 1 sexual partner (Bunnell et al (2008:619). In another Ugandan study by Bunnell et al (2006:88-89), 92% of sexually active PLWHA were observed to have had only 1 sexual partner. While, in a South African study conducted by Kiene et al (2008:1782), 5.6% (*f*=4; n= 71) of PLWHA had more than 1 sexual partner.

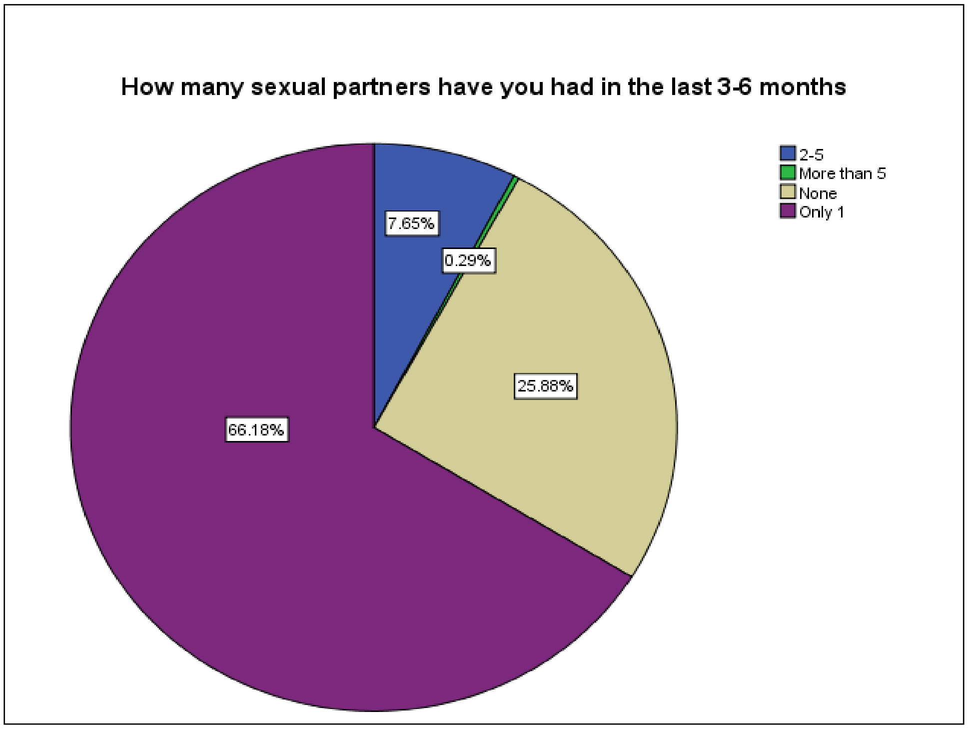

Figure 4.15

Number of sexual partners (N=340)

4.3.3.7 Frequency of sexual intercourse

All respondents (100%; N=340) answered this item. Of the 340 respondents, 86 (25.3%) indicated they were not having sex, 3 (0.9%) had daily sexual intercourse, 57 (16.8%) had sex several times a week, 76 (22.4%) had sexual intercourse once a week, 59

(17.4%) had sex once a month while another 59 (17.4%) had sexual intercourse once in a long time (see table 4.23 and figure 4.16).

The response “never” in this instance did not mean that the respondents had never had sex in their life time; rather it meant that the respondents were not having sexual intercourse prior to the study. Otherwise, there was an even distribution in sexual activity with regard to frequency of sexual intercourse with the exception of daily sexual intercourse.

Table 4.23 Frequency of sexual intercourse (N=340).

Frequency of sexual intercourse	**Frequency *f***	**Percentage %**
Never	86	25.3
Daily	3	0.9
Several times a week	57	16.8
Once a week	76	22.4
Once a month	59	17.4
Once in a long time	59	17.4
Total	**340**	**100.0**

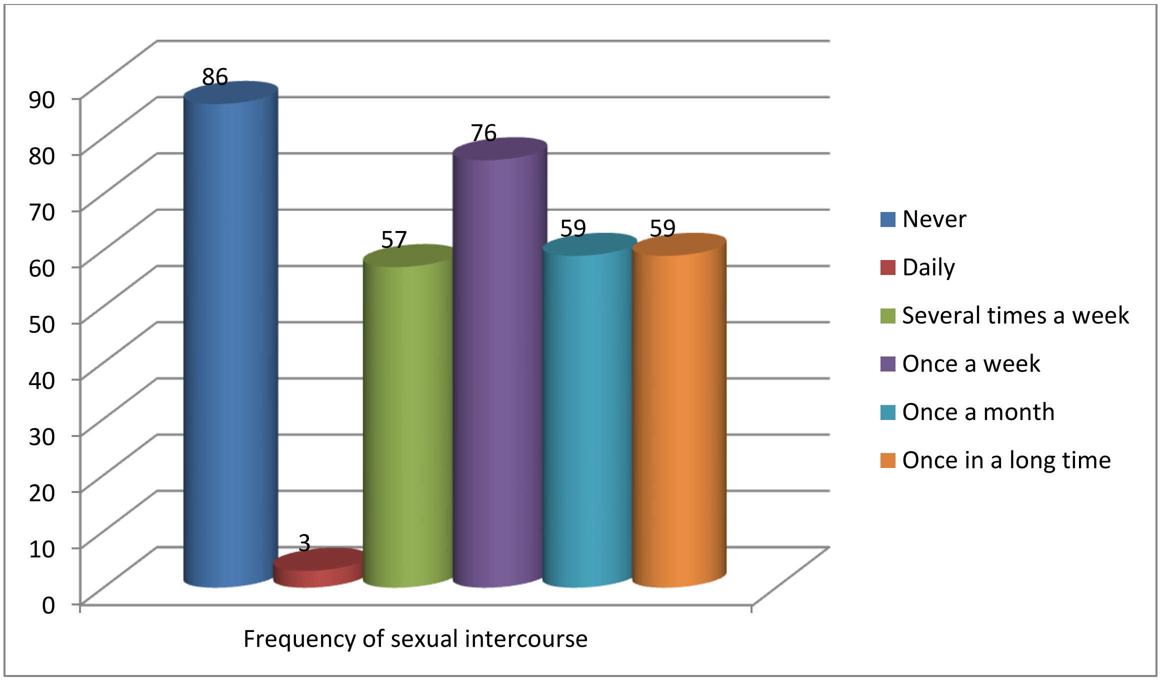

Figure 4.16

Frequency of sexual intercourse (N=340).

4.3.3.8 The decision on when to have sex

Of the 340 respondents, 85 reported that they were not sexually active at the time of the study and so the analysis was done for the 255 respondents (n=255) who were sexually active at the time of the study. Also the responses “strongly agree and agree”, and “disagree and strongly disagree” were also grouped together for purposes of analysis and interpretation.

Of these 255 respondents (n=255), 159 (62.3%) agreed that they decided on when to have sex; 233 (87.5%) agreed that their sexual partners decided on when to have sex; 146 (57.2%) agreed that the place where they are with sexual partners sets the tone to have or not to have sex. One hundred and seventy five (n=175; 68.6%) agreed that the time available to them and their sexual partners determines on whether they have sex or not; while 250 (98%) disagreed that their friends help them to decide on when to have sex (refer to table 4.24).

These findings show that the factors that influence the decision on when to have sex are: sexual partners of the respondents who play a leading role (87.5%) on deciding when to have sex, the time available to have sex (68.6%); the respondents themselves deciding on when to have sex; (62.3%) and the place (environment) that sets the tone for sex (57.2%). Friends seem to have very little influence on the decision on when to have sex (2%).

Table 4.24 The decision on when to have sex (n=255)

Decision to have sex	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Totals (n)**
I decide on when to have sex	23.1% (*f*=59)	39.2% (*f*=100)	33.7% (*f*=86)	4% (*f*=10)	100% (n=255)
My partner decides on when to have sex	56.9% (*f*=145)	30.6% (*f*=78)	12.1% (*f*=31)	0.4% (*f*=1)	100% (n=255)
The place where we are sets the tone for sex or not	23.9% (*f*=61)	33.3% (*f*=85)	30.2% (*f*=77)	12.6% (*f*=32)	100% (n=255)
Available time we have determines whether we have sex or not	35.3% (*f*=90)	33.3% (*f*=85)	17.7% (*f*=45)	13.7% (*f*=35)	100% (n=255)
Friends help to decide when to have sex	1.2% (*f*=3)	0.8% (*f*=2)	3.9% (*f*=10)	94.1% (*f*=240)	100% (n=255)

4.3.3.9 Contraception/family planning method used

All the respondents (100%; N=340) answered this item. Of the 340 respondents, 229 (67.3%) respondents used condoms as method of contraception/family planning; 6 (1.8%) used pills; 13 (3.8%) used injectables; 1(0.3%) used implants; 1 (0.3%) used the natural method; 1 (0.3%) used a surgical contraceptive method; and 89 (26.2%) did not use any contraceptive (refer to figure 4.17).

The majority of respondents (67.3%) used condoms as their method of contraception. Similar findings were observed in a study conducted in Uganda that reported 80% condom use among PLWHA, while another study conducted in Nigeria reported that 19.4% (65 of 335) of respondents used condoms; 2.4% (8 of 335) used oral contraceptive pills; and 0.6% (2 of 335) abstained from sexual intercourse (Andia et al, 2009:340; Iliyasu et al, 2009:77).

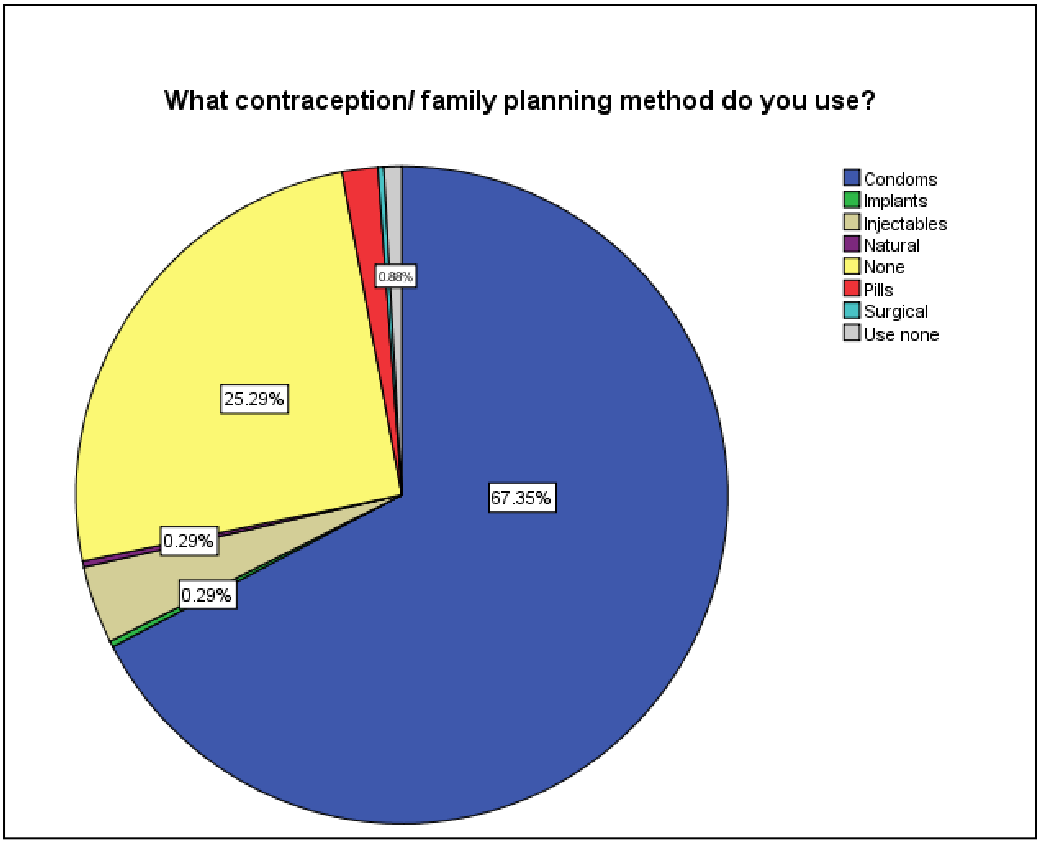

Figure 4.17

Contraception/family planning method used (N=340).

4.3.3.10 Type of surgical contraception used

Only 1 of 340 (0.3%) respondent used a surgical method of contraception. The respondent is a female who had a tubal ligation (refer to figure 4.17 above). The percentage of those who used surgical contraception in the current study is lower than that reported in a study conducted in Uganda were the percentage of surgical contraception was 8%. However, the general trend in both studies is that the number of PLWHA opting for surgical contraception is much lower than for the other contraception methods (Bunnell et al, 2008:621).

4.3.3.11 Frequency of condom use

Of the 340 respondents, 255 (75%) were sexually active at the time of the study.

Of these 255 respondents, 179 (70.2%) reported that they used condoms all the time; 62 (24.3%) used condoms most of the time; 9 (3.5%) used condoms sometimes; while 5 (2%) reported that they used condoms only rarely (refer to figure 4.18).

The findings show that a majority of PLWHA (70.2%) use condoms consistently and similar findings were observed in a study conducted in Ethiopia, where 31% of HIV positive women were observed to use condoms always and 68% reported condom use in the most recent sexual intercourse with their regular sexual partner (Gari et al, 2009:13).

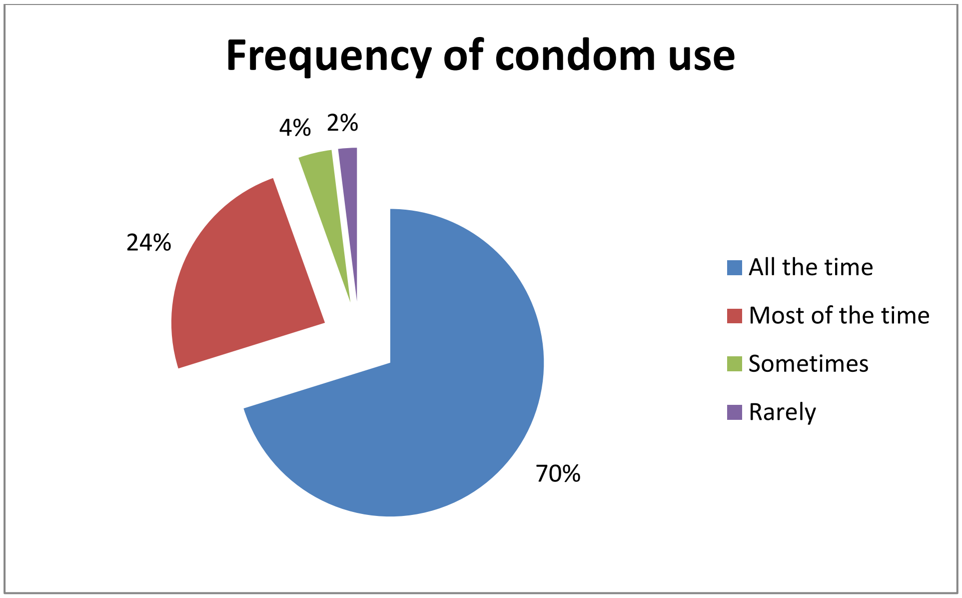

Figure 4.18

Frequency of condom use (n=255)

4.3.3.12 Reasons for condom use

Of the 340 respondents, 72% (n=245) answered this item. Of the 245 respondents, 152 (62%) agreed that they used condoms if their sexual partners insisted on using them; 243 (99.2%) agreed that they used condoms because they wanted to avoid infecting their sexual partners with HIV; 187 (76.3%) agreed that they used condoms to avoid pregnancy; while 243 (99.2%) agreed that they used condoms to avoid contracting sexually transmitted infections (STI's). On the other hand, 173 (70.6%) disagreed that their reason for use of condoms was that condoms increased their sexual sensation; while166 (67.8%) agreed that they used condoms because they were advised or told by a health care provider that they should always use condoms (refer to table 4.25).

The study findings show that the concern of the respondents about infecting their sexual partners and avoiding contracting other STIs both standing at 99.2% (n=245) were leading reasons for using a condoms. Besides these two reasons for using condoms, other reasons were; for contraception (76.3%); advice by health care providers (67.8%);

and insistence of sexual partners (62%). Notably, 70.6% refuted that they used condom because condoms increased their sexual sensation.

Table 4.25 Reasons for condom use among respondents (n=245)

Reasons for condom use	Strongly agree	Agree	Disagree	Strongly disagree	Total (n)
I use condoms if my partner insists on using them	40.8% (*f*=100)	21.2% (*f*=52)	33.5% (*f*=82)	4.5% (*f*=11)	100% (n=245)
I use the condom to avoid infecting my partner with HIV	65.7% (*f*=161)	33.5% (*f*=82)	0.8% (*f*=2)	0% (*f*=0)	100% (n=245)
I use the condoms to avoid getting pregnant	49.8% (*f*=122)	26.5% (*f*=65)	12.2% (*f*=30)	11.4% (*f*=28)	100% (n=245)
If there is risk of contracting an STI	61.6% (*f*=151)	37.6% (*f*=92)	0% (*f*=0)	0.8% (*f*=2)	100% (n=245)
I use the condom because they increase my sexual sensation	11.4% (*f*=28)	18% (*f*=44)	45.3% (*f*=111)	25.3% (*f*=62)	100% (n=245)
I use them because my care provider says I should always use them	55.1% (*f*=135)	12.6% (*f*=31)	18.4% (*f*=45)	13.9% (*f*=34)	100% (n=245)

4.3.3.13 Decision on condom use

Of the 340 respondents, 245 (72%) responded to this item (n=245). Of these 245 respondents, 225 (91.8%) agreed that they made the decision on when to use condoms; 142 (58%) agreed that their partners made the decision on when to use condoms; 195 (79.6%) disagreed that their friends helped them decide when to use condoms; also155 (63.3%) disagreed that the place where they were determined whether they used condoms or not. With regard to whether the available time to have sex determined condom usage, 53.1% (130) of respondents agreed while 46.9% (115) disagreed. One hundred and ninety-five (*f*=195; n=245; 79.6%) agreed that they used condoms for casual relationships while 60% (147) disagreed that they used condoms in steady sexual relationships (refer to table 4.26).

The study findings reveal that the individual's (respondent) decision and the nature/type of sexual relationship played a major role in making the decision to use a condom; this was especially true for casual sexual relationships, 79.6% *f*=195; n=245) compared to steady relationships, 40%(*f*=98; n=245). However, the insistence of sexual partners to use condoms, the place, time available to have sex and friends played a lesser important role in making the decision on condom use.

Table 4.26 Decision on condom use (n=245).

Reasons for condom use	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Total (n)**
I decide on when to use a condom	62% (*f*=152)	29.8% (*f*=73)	7.8% (*f*=19)	0.4% (*f*=1)	100% (n=245)
My partner decides on when to use a condom	13.5% (*f*=33)	44.5% (*f*=109)	3.7% (*f*=9)	4.1% (*f*=10)	100% (n=245)
My friends help me decide on when to use a condom	3.7% (*f*=9)	16.7% (*f*=41)	9.8% (*f*=24)	69.8% (*f*=171)	100% (n=245)
The place where we are determines condom use	10.6% (*f*=26)	26.1% (*f*=64)	28.6% (*f*=70)	34.7% (*f*=85)	100% (n=245)
Available time for sex determines use of a condom	31% (*f*=76)	22% (*f*=54)	23.7% (*f*=58)	23.3% (*f*=57)	100% (n=245)
I use a condom for casual sexual relationship (s)	44.5% (*f*=109)	35.1% (*f*=86)	8.6% (*f*=21)	11.8% (*f*=29)	100% (n=245)
I use condoms in steady sexual relationships	16.7% (*f*=41)	23.3% (*f*=57)	38.8% (*f*=95)	21.2% (*f*=52)	100% (n=245)

4.3.3.14 Reasons for non-condom use

Sixty three (63) respondents (n=63) gave responses to this item. Of the 63 respondents, 54 (85.7%) disagreed that condoms were for promiscuous people; 52 (82.5%)

disagreed that condoms reduce sexual sensation; 43 (68.3%) disagreed that condom use makes no difference; 56 (88.9%) disagreed that condoms carry in them infections like HIV; 37 (58.7%) disagreed that they did not know how to use condoms. Another 42 (66.7%) disagreed that they did not know the importance of condoms. Forty six (73%) also disagreed that non-condom use was because they were not 100% protective so there was no need to use them; and 54 (85.7%) indicated that the major reason for non-condom use was partner refusal (refer to table 4.27).

The findings show that partner refusal (85.9%; n=63) is the single most indicated factor or reason for not using condoms. Of importance too is the fact that 7 (11.1%) respondents agreed that condoms carry infections like HIV; 26 (41.3%) agreed that they did not know how to use condoms; while 21 (33.3%) agreed that they did not know the importance of using condoms. These are all “preventable” reasons. In a French study conducted by Spire et al (2005:1431), 43% of PLWHA reported sexual partner’s refusal to use condoms and 61% reported that it was a shared decision not to use condoms. In another study by Bunnell et al (2008:621), in Uganda, 13% of PLWHA reported partner refusal as reason for non-condom use.

Table 4.27 Reasons for non-condom use (n=63).

Reasons for non-condom use	Strongly agree	Agree	Disagree	Strongly disagree	Totals (n)
Condoms are for promiscuous people	3.2% (*f*=2)	11.1% (*f*=7)	14.3% (*f*=9)	71.4% (*f*=45)	100% (n=63)
Sexual sensation reduces with condom use	3.2% (*f*=2)	14.3% (*f*=9)	30.1% (*f*=19)	52.4% (*f*=33)	100% (n=63)
Use of condoms makes no difference	7.9% (*f*=5)	23.8% (*f*=15)	25.4% (*f*=16)	42.9% (*f*=27)	100% (n=63)
Condoms carry in them infections like HIV	6.3% (*f*=4)	4.8% (*f*=3)	17.5% (*f*=11)	71.4% (*f*=45)	100% (n=63)
I don’t know how to use condoms	25.4% (*f*=16)	15.9% (*f*=10)	19% (*f*=12)	39.7% (*f*=25)	100% (n=63)
I don’t know the importance of using condoms	11.1% (*f*=7)	22.2% (*f*=14)	14.3% (*f*=9)	52.4% (*f*=33)	100% (n=63)
Condoms are not 100% protective, so why use them?	9.5% (*f*=6)	17.5% (*f*=11)	15.9% (*f*=10)	57.1% (*f*=36)	100% (n=63)
My partner refuses to use condoms	60.3% (*f*=38)	25.4% (*f*=16)	7.9% (*f*=5)	6.4% (n=4)	100% (n=63)

4.3.4 SECTION FOUR: ANTIRETROVIRAL THERAPY

All respondents (100%; N=340) were on antiretroviral therapy (refer to figure 4.19). This was an inclusion criterion aspiring respondents had to meet.

4.3.4.1 Duration between HIV diagnosis and access to care

All respondents (100%; N=340) responded to this item. Of the 340 responses, 8 (2.4%) accessed ART/HIV care less than a month from time of diagnosis of HIV; 34 (10%) accessed ART/HIV care between 1 and 3 months; 56 (16.4%) accessed ART/HIV care between 6 and 12 months; 162 (47.6%) accessed ART/HIV care between 1 and 3 years; 72 (21.2%) accessed ART/HIV care between 3 and 5 year; and 8 (2.4%) accessed ART/HIV care more than 5 years after the diagnosis of HIV (refer to table 4.28 and figure 4.19).

The findings show that most respondents (47.6%) accessed ART/HIV care between 1 and 3 years from the time of being diagnosed with HIV, and nearly two thirds (*f*=234; N=340; 68.8%) of respondents accessed ART/HIV care between 1 and 5 years from the time of diagnosis of HIV. In other words, the majority of respondents (68.8%) accessed care after 1 year of diagnosis of HIV, whereas for 12.4% (*f*=42; N=340), the duration from HIV diagnosis to accessing HIV care ranged from less than a month to 3 months. In a Cameroon study conducted by Marcellin et al (2009:1017), 57% (*f*=1787; n=3151) of the respondents took 6 months from HIV diagnosis to first medical consultation for HIV care; 28% (*f*=887; n=3151) took between 1 and 6 months; while 15% (*f*=477; n=3151) took 6 months from HIV diagnosis to first medical consultation for HIV care. In the same study, the median delay from HIV diagnosis to initiation of ART was 1.9 months.

Table 4.28 Duration between HIV diagnosis and access to care (N=340)

Duration between HIV diagnosis and access of ART	**Frequency *f***	**Percentage %**	**Cumulative Frequency**	**Cumulative Percentage**
Less than a month	8	2.4	8	2.4
Between 1-3 months	34	10	42	12.4
Between 6-12 months	56	16.4	98	28.8
Between 1-3 years	162	47.6	260	76.4
Between 3-5 years	72	21.2	332	97.6
More than 5 years	8	2.4		
Total	**340**	**100.0**	**340**	**100**

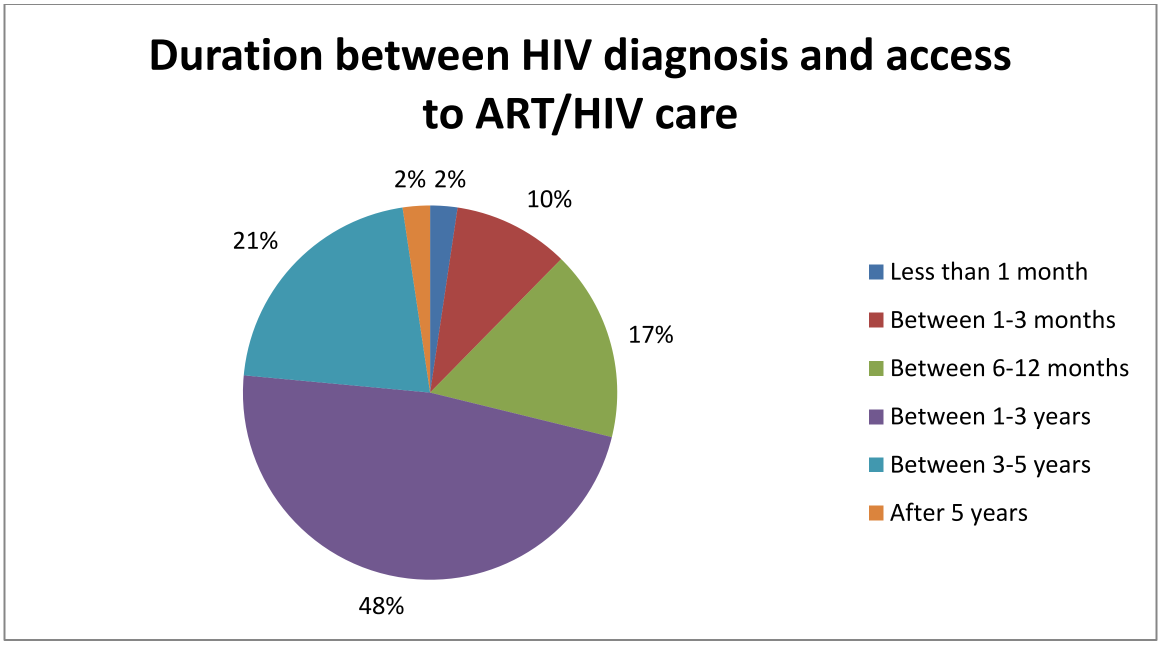

Figure 4.19

Duration between HIV diagnosis and access to care (N=340)

4.3.4.2 Duration on antiretroviral therapy

All the respondents (100%; N=340) responded to this item. Of the 340 respondents, 9 (2.6%) had used ARVs for less than 1 month; 30 (8.8%) had used ARVs for between 1 and 3 months; 63 (18.5%) had used ARVs for between 6 and 12 months; 125 (36.8%) had used ARVs for between 1 and 3 years; 86 (25.3%) had used ARVs for between 3 and 5 years; and 27 (7.9%) had been on ART for more than 5 years prior to the study (refer to table 4.29 and figure 4.20).

The study findings show that the majority of respondents (1 to 3 years and 3 to 5 years), 62.1% (*f*=211; N=340) had been on ART between 1 and 5 years prior to the study. A similar trend is observed with regard to time taken between HIV positive diagnosis and disclosure where 35.3% (*f*=113; n=320) disclosed within 1 to 3 years and 22.5% (*f*=72; n=320) disclosed between 3 to 5 years. It was observed that cumulatively, 57.8% (*f*=185; n=320) disclosed between 1 and 5 years (refer to section 4.3.2.1.1.3 for disclosure frequencies and section 4.3.5.4.1 for the Chi-square test for the relationship between duration on ART and disclosure).

Table 4.29 Duration on antiretroviral therapy (N=340)

Duration on antiretroviral therapy	Frequency *f*	Percentage %
Less than a month	9	2.6
Between 1-3 months	30	8.8
Between 6-12 months	63	18.5
Between 1-3 years	125	36.8
Between 3-5 years	86	25.3
More than 5 years	27	7.9
Total	**340**	**100.0**

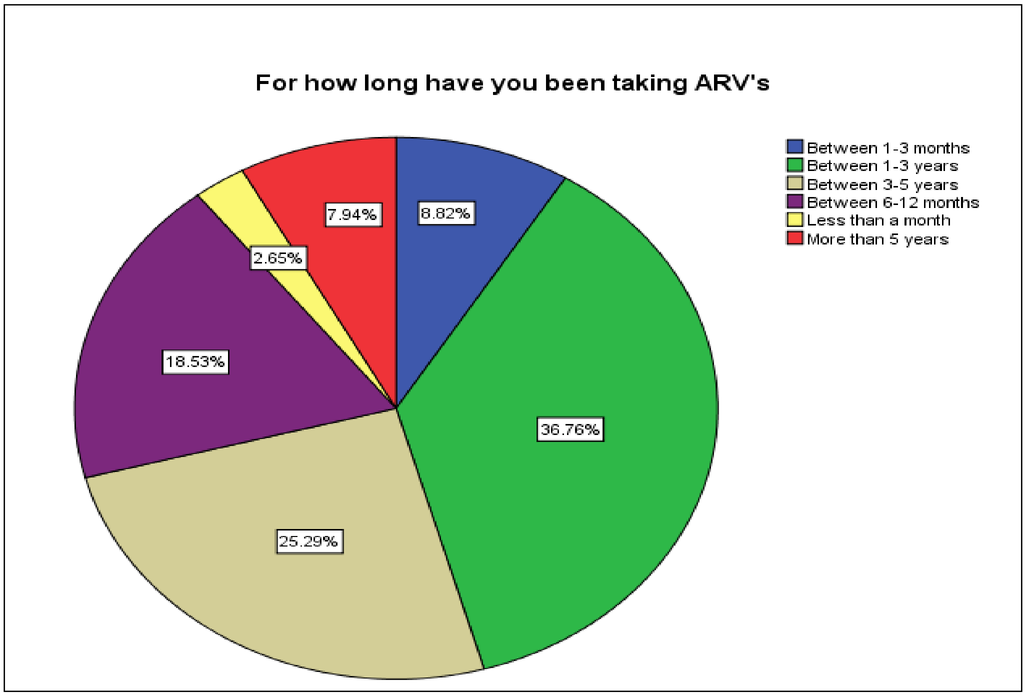

Figure 4. 20

Duration on antiretroviral therapy (N=340)

4.3.4.3 People to whom ARV use has been disclosed

All respondents (100%; N=340) responded to this item. Of the 340 respondents, 197 (57.9%) had disclosed that they were taking ARVs to their spouses/sexual partners; 58 (17.1%) had disclosed ARV use to their siblings; 34 (10%) had disclosed that they were on ART to their children; 16 (4.7%) had disclosed ARV use to their parents; 6 (1.8%) had disclosed to their employers; 12 (3.5%) had disclosed ARV use to their friends; and 17 (5%) had not disclosed to anyone that they were using ARVs (refer to figure 4.21).

The study findings show that most respondents (57.9%) disclosed ARV use to their spouses/sexual partner and they (respondents) least disclosed ARV use to their employers. Respondents were also observed not to have disclosed ARV use at all to their spiritual leaders and similar low disclosure rates to religious leaders is observed in the case of disclosure of HIV status (refer to section 4.3.2.1.1.2 and table 4.6). This may be due to the fact that some religious teachings consider HIV to be a result of promiscuity and so some people may avoid to be “labeled” promiscuous. Also low ARV use disclosure to employers observed in this section may be attributed to the fear of loss of employment or income (or need to protect employment/source of income), 75% (*f*=9; n=12) (refer to table 4.15 under section 4.3.2.1.2.2).

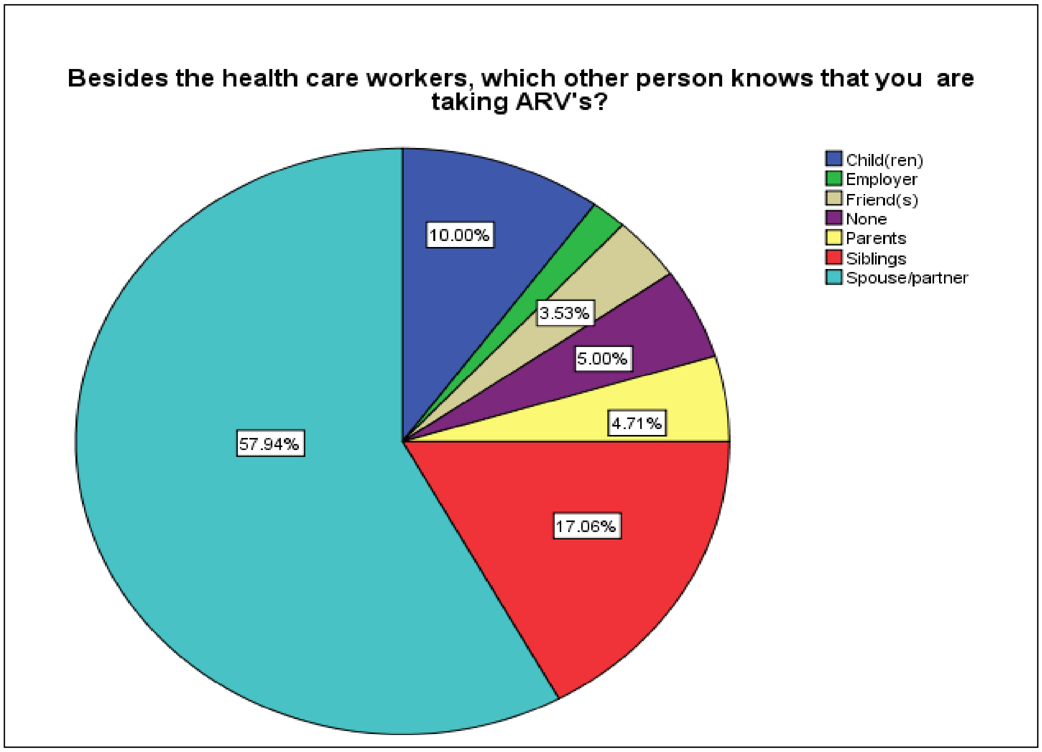

Figure 4.21

People to whom ARV use has been disclosed (N=340)

4.3.4.4 Effect of ARV's on sexual life/drive

All respondents (100%; N=340) responded to this item. Of the 340, 116 (34.1%) indicated that ARVs decreased their sexual drive; 7 (2.1%) indicated that ARVs had moderately decreased their sexual drive, 161 (47.4%) indicated that the use of ARVs made no difference to their sexual drive; 14 (4.1%) indicated that ARVs had significantly increased their sexual drive; while 42 (12.4%) indicated that the use of ARVs had slightly increased their sexual drive (refer to table 4.30).

Notably, 34.1% (*f*=116; N=340) reported that the use of ARVs had decreased their sexual drive. In a European study conducted by Asboe, Catalan, Mandalia, Dedes, Florence, Schrooten, Noestlinger and Colesbunders (2007:955), 24% (*f*=160; n=668) HIV positive men reported moderate to severe impairment of sexual drive. In the same study, erectile dysfunction was associated with long duration of ARV treatment.

Table 4.30 Effect of ARVs on sexual life/drive (N=340)

Effect of ARVs on sexual life/drive	Frequency *f*	Percentage %
Decreased my sexual drive	116	34.1
Moderately increased my sexual drive	7	2.1
No difference on my sexual life	161	47.4
Significantly increased my sexual drive	14	4.1
Slightly increased my sexual drive	42	12.4
Total	**340**	**100.0**

4.3.4.5 Use of ARV's and having children

All respondents (100%; N=340) answered this item. Of these 340 respondents, 201 (59.1%) agreed that people using ARVs should not have children; 194 (57.1%) disagreed that people using ARVs can have children as they choose to; while 195 (57.4%) disagreed that people using ARVs should not have children with HIV negative persons. There was an almost even distribution; 174 (51.2%) agreed, while 166 (48.8%) disagreed that people using ARVs should have children only with other HIV positive persons. Of the 340 respondents, 249 (73.2%) agreed that people using ARVs should have children only when recommended by health care providers (refer to table 4.31).

The current study findings show mixed views concerning having children for people on ART with the exception of having children only when recommended by health care providers. It also shows how much the respondents rely on health care providers when it comes to having children for people using ARVs. Notably, 59.2% (*f*=201; N=340), of the respondents agree that people who are using ARVs should not have children.

Table 4.31 Use of ARVs and having children (N=340)

Use of ARVs and having children	Strongly agree	Agree	Disagree	Strongly disagree	Totals (n)
People using ARVs should not have children	47.1% (*f*=160)	12.1% (*f*=41)	25% (*f*=85)	15.8% (*f*=54)	100% (n=340)
People using ARVs should have children as they choose to	17.3% (*f*=59)	25.6% (*f*=87)	36.8% (*f*=125)	20.3% (*f*=69)	100% (n=340)
People using ARVs shouldn't have children with HIV negative persons	26.5% (*f*=90)	16.2% (*f*=55)	20% (*f*=68)	37.3% (*f*=127)	100% (n=340)
People using ARVs should have children only with other HIV positive persons	22.9% (*f*=78)	28.2% (*f*=96)	22.4% (*f*=76)	26.5% (*f*=90)	100% (n=340)
People using ARVs should have children only when recommended by health care providers	49.1% (*f*=167)	24.1% (*f*=82)	12.7% (*f*=43)	14.1% (*f*=48)	100% (n=340)

4.3.4.6 Perceived sexual life changes with use of ARVs

This item was answered by 133 (n=133) respondents and the responses to the open ended question were grouped under subthemes and the respective frequencies computed accordingly.

Two main themes were derived from the data; namely, abstinence and consistent condom use. Of these 133 respondents, 36 (27.1%) indicated that the sexual life changes they made as a consequence of using ARVs was abstinence. While 97 (72.9%) indicated that, as a result of using ARVs, they now consistently use condoms (refer to figure 4.22).

This study findings show that the one most important sexual life change the respondents made as a result of using ARVs was consist condom use at every sexual encounter. This sexual life change could have been influenced or brought about as a result of the HIV counseling and education sessions given to PLWHA at the clinic regarding aspects of “positive living” and safer sex practices for HIV positive persons.

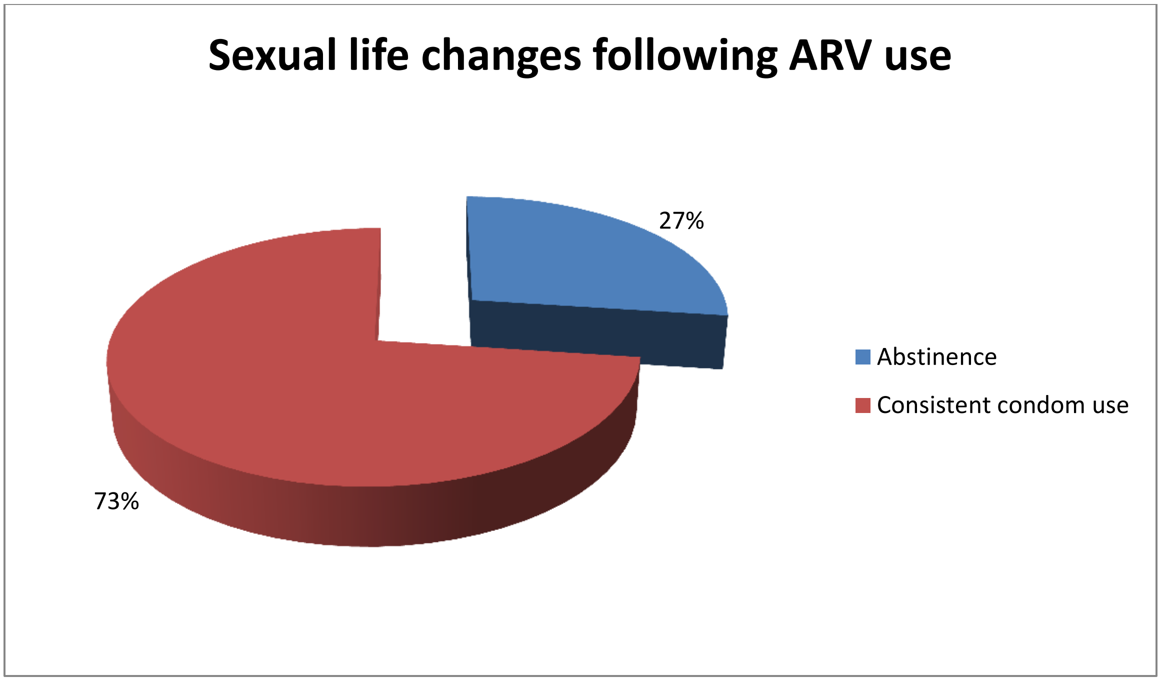

Figure 4.22

Sexual life changes following ARV use (n=133).

4.3.5 RELATIONSHIP BETWEEN VARIABLES

This part of the presentation and interpretation of findings looks at the associations between the key study variables and the significance of the associations.

4.3.5.1 Disclosure and socio-demographics

4.3.5.1.1 Disclosure and gender

Of the 320 respondents who disclosed their HIV status, 245 (76.6%) were female while 75 (23.4%) were males. And of the 20 respondents who did not disclose, 11 (55%) were female and 9 (45%) were male. Among those who disclosed, more females disclosed their HIV status (95.7%; *f*=245; n=320) compared to their male counterparts (89.3%; *f*=75; n=320) (refer to table 4.32).

Table 4.32 Disclosure and gender (N=340)

			Gender		
			Female	Male	Total
Disclosure	No	Count	11	9	20
		% within Gender	4.3%	10.7%	5.9%
	Yes	Count	245	75	320
		% within Gender	95.7%	89.3%	94.1%
	Total	Count	**256**	**84**	**340**
		% within Gender	**100.0%**	**100.0%**	**100.0%**

From the above results it could be assumed that there is a relationship between disclosure and one's gender – that females are more likely to disclose their status than men. To test the significance of the association between disclosure and gender, a Chi-square test was performed (refer to table 4.33).

The result of the Chi-square test indicate that the calculated $X^2 = 4.7$, is greater than the critical $X^2 = 3.84$ at 0.05 p value (probability level) and 1 degree of freedom (df). Also the p value, 0.03 is less than 0.05. This means that there is a statistically significant association between disclosure of HIV status and gender especially being of the female gender.

Table 4.33 Chi-square test of disclosure and gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.705	1	0.030
No. of Valid Cases	340		

The current study findings are related to those observed in France, India, Nigeria and West Africa, that observed higher disclosure rates among HIV positive females than males (Bouillon et al, 2007:S91; Taraphdar et al, 2007:280; Akani and Erhabor, 2006:88; Ndiaye et al, 2008:43) (refer to chapter 2; section 2.2.13).

4.3.5.1.2 Disclosure and Age

Of the 320 respondents who disclosed, 1 (0.3%) was in the age group 15 to 19 years; 21 (6.6%) were in age group 20 to 24 years; 59 (18.4%) were in age group 25 to 29 years; 59 (18.4%) were in age group 30 to 34; 69 (21.6%) were in age group 35 to 39 years; 45 (14.1%) were in the age group 40 to 44 years; 27 (8.4%) were in age group 45 to 49 years; 21 (6.6%) in age group 50 to 54 years; 9 (2.8%) were in age group 55 to 59 years; and 9 (2.8%) were above 60 years of age. While, of the 20 respondents who did not disclose, 5 (25%) were in age group 25 to 29 years; 7 (35%) were in age group 30 to 34 years; 2 (10%) were in age group 35 to 39 years; 3 (15%) were in age group 45 to 49 years; 2 (10%) in age group 50 to 54 years; and 1 (5%) in age group above 60 years (refer to table 4.34).

Regarding the disclosure rates by age groups; 100% (*f*=1; n=1) in age group 15 to 19 years disclosed; 100% (*f*=21; n=21) in the age group 20 to 24 years disclosed; 92.2% (*f*=59; n=64) in the age group 25 to 29 years disclosed; and 89.4% (*f*=59; n=66) in age group 30 to 34 years disclosed. In the age group 35 to 39 years, 97.2% (*f*=69; n=71) disclosed while 100% (*f*=45; n=45) disclosed in the age group 40 to 44 years. Ninety percent (90%; *f*=27; n=30) disclosed in the age group 45 to 49 years whereas, 91.3% (*f*=21; n=23) disclosed in the age group 50 to 54 years. In the age group 55 to 59 years, 90% (*f*=9; n=10) disclosed and 100% (*f*=9; n=9) disclosed in the age 60 years and above (refer to table 4.34).

Table 4.34 Disclosure and Age (N=340)

			Respondents age in years										
			15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	>60	Total
Disclosure	No	Count	0	0	5	7	2	0	3	2	1	0	20
		% within How old are you in years?	0.00%	0.00%	7.80%	10.60%	2.80%	0.00%	10.00%	8.70%	10.00%	0.00%	100.00%
	Yes	Count	1	21	59	59	69	45	27	21	9	9	320
		% within How old are you in years?	100.00%	100.00%	92.20%	89.40%	97.20%	100.00%	90.00%	91.30%	90.00%	100.00%	100.00%
	Total	Count	1	21	64	66	71	45	30	23	10	9	340
		% within How old are you in years?	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

From the above results, the disclosure rate seem to be evenly distributed among the different age groups; therefore the assumption is that there is no relationship between disclosure and one’s age.

The result of the Chi-square test indicates that the calculated X^2 = 10.6, is less than the critical X^2 =16.92 at 0.05 p value (probability level) and 9 degree of freedom (df). Moreover, the p value, 0.304 is greater than 0.05 (refer to table 4.35). This means that there is no significant relationship between disclosure of HIV status and one’s age.

These study findings are similar to those observed in a South African study were a multivariate analysis showed no significant association between disclosure and age of PLWHA (Nachega et al, 2005:198). The findings contrast the observations made in studies in West Africa, South Africa, India, Uganda, and USA, that showed that being of older age was associated with higher disclosure rates among PLWHA (Ndiaye et al, 2008:43; Wong et al, 2009:218;220; Taraphdar et al, 2007:280; Kadowa and Nuwaha, 2009:29; Emlet (2005:12) (refer to chapter 2; section 2.2.9).

Table 4.35 Chi-square test of disclosure and age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.600	9	0.304
No. of Valid Cases	340		

4.3.5.1.3 Disclosure and region were respondents live

Of the 320 respondents who disclosed, 245 (76.6%) were from the Hhohho Region and had a disclosure rate of 96.5% (*f*=245; n=254); 60 (18.8%) were from the Manzini Region and had a disclosure rate of 87% (*f*=60; n=69); 5 (1.6%) were from the Shiselweni Region all 100% (*f*=5; n=5) disclosed their HIV status; whereas, 10 (3.1%) were from the Lubombo Region and had a disclosure rate of 83.3% (*f*=10; n=12 (refer to table 4.36).

Table 4.36 Disclosure and region where respondents live (N=340)

			In which region do you currently live?				
			Hhohho	Manzini	Shiselweni	Lubombo	Total
Disclosure	No	Count	9	9	0	2	20
		% within In which region do you currently live?	3.50%	13.00%	0.00%	16.70%	5.90%
	Yes	Count	245	60	5	10	320
		% within In which region do you currently live?	96.50%	87.00%	100.00%	83.30%	94.10%
	Total	Count	254	69	5	12	340
		% within In which region do you currently live?	100.00%	100.00%	100.00%	100.00%	100.00%

From the results above, the assumption raised would be that there is an association between disclosure and the region where respondents lived and this would be especially true for the Shiselweni Region.

A Chi-square test was performed to test this relationship and the Chi square result $X^2 = 11.7$ was greater than critical Chi-square $X^2 = 7.81$ at p value 0.005 and 3 degrees of freedom. Also the p value 0.008 was less than 0.05 (refer to table 4.37). This means that there is a statistically significant relationship between disclosure and the region in Swaziland where the respondents live.

Table 4.37 Chi-square test of disclosure and region

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.735	3	0.008
No. of Valid Cases	340		

4.3.5.1.4 Disclosure and area of residence

Of the 320 respondents who disclosed their HIV status, 152 (47.5%) live in rural areas and had a disclosure rate of 94.4% (*f*=152; n=161); while, 168 (52.5%) lived in an urban setting and had a disclosure rate of 93.9% (*f*=168; n=179) (refer to table 4.38).

From these findings it could be assumed that disclosure of HIV status has no relation or association with the type of residence; that is, rural or urban. A Chi-square test was performed to test this assumption.

The result of the Chi-square test $X^2 = 0.047$ is less than the critical, $X^2 = 3.84$, at p value 0.05 and 1 degree of freedom. Also the p value, 0.828 was greater than 0.05 (refer to table 4.39). This means that there is indeed no relationship between disclosure and area of residence. These study findings are similar to those observed in India (Taraphdar et al, 2007:280). The findings contrast the observations made in two different studies in South Africa, that revealed statistically significant higher disclosure rates among urban dwellers than rural dwellers (Gaede et al, 2006:365; Lurie et al, 2008:490) (refer to chapter 2; section 2.2.12).

Table 4.38 Disclosure and area of residence (N=340)

			Where is your residence located?		
			Rural	Urban	Total
Disclosure	No	Count	9	11	20
		% within Where is your residence located?	5.6%	6.1%	5.9%
	Yes	Count	152	168	320
		% within Where is your residence located?	94.4%	93.9%	94.1%
	Total	Count	161	179	340
		% within Where is your residence located?	100.0%	100.0%	100.0%

Table 4.39 Chi-square test of disclosure and area of residence

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.047	1	0.828
No. of Valid Cases	340		

4.3.5.1.5 Disclosure and marital status

Of the 320 respondents who disclosed, 51 (15.9%) were single and the disclosure rate was 89.5% (*f*=51; n=57); 122 (38.1%) respondents were married and the disclosure rate was 96.8% (*f*=122; n=126); 109 (34.1%) were co-habiting and the disclosure rate was 93.6% (*f*=102; n=109); 27 (8.4%) were either widows or widowers with a disclosure rate of 90% (*f*=27; n=30); 10 (3.1%) were either divorced or separated and the disclosure rate in this category was 100% (*f*=10; n=10); while, others accounted for 8 (2.5%) all of whom disclosed their status, 100% (*f*=8; n=8) disclosure rate (refer to table 4.40).

These results suggest that those respondents who are married and those who are either divorced or separated are more likely to disclose than those of other marital status.

The Chi-square test result $X^2 = 5.990$ is less than the critical, $X^2 = 11.07$, at p value 0.05 and 5 degree of freedom. And also p value = 0.307 is greater than 0.05 (refer to table 4.41). This means that there is no statistically significant relationship between disclosure and marital status. These study findings contrast with observations of other studies conducted in Uganda, Ethiopia, Nigeria, India and South Africa, that observed that there was a significant association between disclosure and one's marital status, with married or co-habiting PLWHA reporting higher disclosure rates than other marital status (King et al, 2008:232; Gari et al, 2009:11; Akani and Erhabor, 2006:88; Iliyasu et al, 2009:76; Taraphdar et al, 2007: 281; Deribe et al, 2010:35; Makin et al, 2008:912) (refer to chapter 2; section 2.2.14).

Table 4.40 Disclosure and marital status (N=340)

			What is your marital status						
			Single	Married	Co-habiting	Widow/Widower	Divorced/ Separated	Other	Total
Disclosure	No	Count	6	4	7	3	0	0	20
		% within What is your marital status	10.50%	3.20%	6.40%	10.00%	0.00%	0.00%	5.90%
	Yes	Count	51	122	102	27	10	8	320
		% within What is your marital status	89.50%	96.80%	93.60%	90.00%	100.00%	100.00%	94.10%
	Total	Count	57	126	109	30	10	8	340
		% within What is your marital status	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 4.41 Chi-square test for disclosure and marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.990	5	0.307
No. of Valid Cases	340		

4.3.5.1.6 Disclosure and education/literacy level

Of the 320 respondents who disclosed their HIV status, 21 (6.6%) were not literate and the disclosure rate for this group was 100%; 108 (33.7%) had primary level as highest education level with a disclosure rate of 97.2% (*f*=105; n=109). One hundred and seventy nine (*f*=179; n=320; 55.9%) had attained secondary education and the disclosure rate for this group was 93.2% (*f*=179; n=192); while 13 (4.1%) of the respondents had attained tertiary education and the disclosure rate for this group was 100% (*f*=13; n=13). One (0.3%) had no formal education and another respondent (f=1; n=320; 0.3%) had vocational training, the disclosure rate was 100% (*f*=1; n=1) for these two respondents (refer to table 4.42).

Table 4.42 Disclosure and education/literacy level (N=340)

			Highest level of educational attainment							
			None	Primary	Secondary	Tertiary	Post Tertiary	No formal Education	Vocational Training	Total
Disclosure	No	Count	4	3	13	0	0	0	0	20
		% within What is your highest educational attainment	16.00%	2.80%	6.80%	0.00%	0.00%	0.00%	0.00%	5.90%
	Yes	Count	21	105	179	13	0	1	1	320
		% within What is your highest educational attainment	84.00%	97.20%	93.20%	100.00%	0.00%	100.00%	100.00%	94.10%
	Total	Count	25	108	192	13	0	1	1	340
		% within What is your highest educational attainment	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%

The current study results suggest that disclosure is related to one's education or literacy level and this specifically being the case for those who attained tertiary education.

To test whether there was truly a relationship between disclosure and education/literacy level, a Chi-square test was performed and the result showed that the Chi-square value X^2 = 7.714 is less than the critical value, X^2 =11.07, at p value of 0.05 and 5 degree of freedom . Also the p value, 0.173 is greater than 0.05 (refer to table 4.43). This means that there is no statistically significant relationship between disclosure and education/literacy level. These findings concur with study findings observed in South

Africa, Uganda and Ethiopia (Nachega et al, 2007: 198; Kadowa and Nuwaha, 2009:29; Gari et al, 2009:13).

Table 4.43 Chi-square test of disclosure and education/literacy level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.714	5	0.173
No. of Valid Cases	340		

4.3.5.1.7 Disclosure and religion/religious beliefs

Of the 320 respondents who disclosed, 309 (96.6%) were Christian and the disclosure rate among this group was 94.8% (*f*=309; n=326); 2 (0.6%) were Muslims and the disclosure rate was 100% (*f*=2; n=2); while, 9 (2.8%) were traditionalists and the disclosure rate among this group was 75% (*f*=9; n=12) (refer to table 4.44).

To test for any associations between disclosure and religious beliefs, a Chi-square test was conducted and the result showed that the calculated Chi-square value, $X^2 = 8.309$ is greater than the critical value, $X^2 = 5.99$, at p value 0.05 and 2 degree of freedom. Also the p value, 0.016 is less than 0.05 (refer to table 4.45). This means that there is a statistically significant association between disclosure and one’s religion/religious beliefs in this study. The findings of the current study concur with the observations of other studies conducted in Tanzania and France with regard to existence of association between disclosure and religious orientation, but it contrasts the “direction” of relationship (Watt et al, 2009:392; Bouillon et al, 2007:S91; Préau et al, 2008:523). The studies in the literature reviewed show that PLWHA who reported greater religious orientation were less likely to disclose. Although the current study did not investigate the “strength” of religious orientation, the findings show that higher disclosure rates were associated with being Christian or Moslim. The current study findings further contrasted with findings of studies conducted in Uganda and Abidjan, that reported no association between disclosure and religious orientation (Kadowa and Nuwaha, 2009:29; Brou et al, 2007:1916) (refer to chapter 2; section 2.2.15 of this dissertation).

Table 4.44 Disclosure and religion/religious beliefs (N=340)

			To which religion or religious belief do you belong						
			Christianity	Islam	Buddhism	Hinduism	Traditional	Atheism	Total
Disclosure	No	Count	17	0	0	0	3	0	20
		% within To which religion or religious belief do you belong	5.20%	0.00%	0.00%	0.00%	25.00%	0.00%	5.90%
	Yes	Count	309	2	0	0	9	0	320
		% within To which religion or religious belief do you belong	94.80%	100.00%	0.00%	0.00%	75.00%	0.00%	94.10%
	Total	Count	326	2	0	0	12	0	340
		% within To which religion or religious belief do you belong	100.00%	100.00%	0.00%	0.00%	100.00%	0.00%	100.00%

Table 4.45 Chi-square test of disclosure and religious beliefs

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.309	2	0.016
No of Valid Cases	340		

4.3.5.1.8 Disclosure and employment status

Of 320 respondents who disclosed their HIV status, 164 (51.3%) were unemployed and this group had a disclosure rate of 94.3% (*f*=164; n=174); those who were self-employed were 33 (10.3%) and had a disclosure rate of 91.7% (*f*=33; n=36); while those who were employed by an institution or company were 123 (38.4%) and had a disclosure rate of 94.6% (*f*=123; n=130) (refer to table 4.46).

The disclosure rates among the different employment status are almost evenly distributed and this may lead to the assumption that there is no relationship between disclosure and one's employment status. To test whether there was an association, a Chi-Square test was performed, and the results show that the chi-square value, X^2 = 0.455 is less than the critical value, X^2 = 5.99, at p value 0.05 and 2 degree of freedom. Furthermore, the p value, 0.797 is greater than 0.05 (refer to table 4.47). This means that there is no statistically significant relationship between disclosure and employment status; a finding also observed in studies conducted in India, South Africa, Uganda and Ethiopia (Taraphdar et al, 2007: 280; Nachega et al, 2005:198; Kadowa and Nuwaha, 2009:31 ; Gari et al, 2007: 13) (refer to chapter 2; section 2.2.11.

Table 4.46 Disclosure and employment status (N=340)

			What is your current employment Status?			
			Unemployed	Self-employed	Employed by institution or Company	Total
Disclosure	No	Count	10	3	7	20
		% within What is your current employment Status?	5.70%	8.30%	5.40%	5.90%
	Yes	Count	164	33	123	320
		% within What is your current employment Status?	94.30%	91.70%	94.60%	94.10%
	Total	Count	174	36	130	340
		% within What is your current employment Status?	100.00%	100.00%	100.00%	100.00%

Table 4.47 Chi-square test of disclosure and employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.455[a]	2	0.797
No. of Valid Cases	340		

4.3.5.1.9 Disclosure and nationality

Of the 320 respondents who disclosed, 5 (1.6%) were non-Swazi and the disclosure rate in this group was 83.3% (*f*=5; n=6); while 315 (98.4%) were Swazi and the disclosure rate in this group was 94.3% (*f*=315; n=334) (refer to table 4.48). The disclosure rate was higher among the Swazi compared to the non-Swazi and this could be because the non-Swazi would perhaps fear being stigmatized and discriminated against and labeled as “importers” of HIV into the country.

The calculated Chi-square value, X^2 =1.283 was less than the critical value, X^2 =3.84 at p value 0.05 and 1 degree of freedom. Also the p value, 0.257 is greater than 0.05 (refer to table 4.49). This means that there is no statistically significant relationship between disclosure of HIV status and one’s nationality in this study.

Table 4.48 Disclosure and nationality (N=340)

			What is your nationality?		
			Non-Swazi	Swazi	Total
Disclosure	No	Count	1	19	20
		% within What is your nationality?	16.70%	5.70%	5.90%
	Yes	Count	5	315	320
		% within What is your nationality?	83.30%	94.30%	94.10%
	Total	Count	6	334	340
		% within What is your nationality?	100.00%	100.00%	100.00%

Table 4.49 Chi-square test of disclosure and nationality

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.283	1	0.257
No. of Valid Cases	340		

4.3.5.2 Sexual practices and socio-demographics

The variables considered/selected for cross tabulation under sexual practices in keeping with the objectives of the study included; condom use, number of sexual partners, type of sexual relationship and number of children hoped for.

4.3.5.2.1 Condom use and socio-demographics

4.3.5.2.1.1 Condom use and gender

Of the 229 (n=229) respondents who used condoms, 161 (70.3%) were female while 68 (29.7%) were male. However, among the males (84), 81% (*f*=68) used condoms compared to 19% (*f*=16) who did not use condoms. And among the females (256), 62.9% (*f*=161) used condoms compared to 37.1% (*f*=95) who did not use condoms. Although the general frequencies show that more females used condoms, the actual proportions of those who used condoms of the different gender, shows that males are more likely to use condoms than their female counterparts (refer to table 4.50).

The assumption would then be that there is a relationship between condom use and gender, especially for the male gender. The Chi-square value, X^2 =9.383 was greater than the critical value X^2 =3.84 at p value 0.05 and 1 degree of freedom. Also p value=0.002 is less than 0.05 (refer to table 4.51). This means that there is indeed a statistically significant relationship between condom use and one's gender. The current study findings are similar to the observations made in studies conducted in South Africa, Ethiopia and Guyana, which showed higher condom use rates among male PLWHA and high condom non-use rates among female PLWHA (Fougelberg et al, 2008:14; Gari et al, 2009:13; Florendo et al, 2006) (refer to chapter 2; section 2.3.3).

Table 4.50 Condom use and gender (N=340)

		Gender		
		Female	Male	Total
Condom use	No	95	16	111
	Yes	161	68	229
Total		256	84	340

Table 4.51 Chi-square test for condom and gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.383	1	0.002
No. of Valid Cases	340		

4.3.5.2.1.2 Condom use and age of respondents

Of the 229 (n=229) respondents who used condoms, two thirds (63.3%; *f*=145) were in the age groups 25 to 44 years and 16.6% (*f*=38) were above 45 years of age. The findings show that the older respondents (45 years and above) were less likely to use condoms, (52.8%; *f*=38; n=72) as opposed to those younger than 45 years (71.3%; *f*=191; n=268) (refer to table 4.52). In two separate South African studies, condom use was observed to decrease with increasing age and this was particularly true for the age 45 years and above (Lurie et al, 2008:487; Nachega et al, 2005:198).

The assumption from these findings is that there is an association between condom use and one's age. However, a chi-square test performed to examine this relationship showed that the chi-square value, $X^2 = 14.634$ was less than the critical value $X^2 = 16.92$ at p value 0.05 and 9 degrees of freedom. Also p value = 0.101 was greater than 0.05 (refer to Table 4.53). This means that there is no statistically significant association between condom use and one's age. A similar association was observed in studies conducted in South Africa and Cameroon (Kiene et al, 2006:1783; Dia et al, 2010:151)

Table 4.52 Condom use and age of respondents (N=340)

		How old are you in years?										
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	>=60	Total
Condom use	No	1	6	15	21	20	14	14	9	5	6	111
	Yes	0	15	49	45	51	31	16	14	5	3	229
Total		1	21	64	66	71	45	30	23	10	9	340

Table 4.53 Chi-square test of condom use and age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.634	9	0.101
No. of Valid Cases	340		

4.3.5.2.1.3 Condom use and region

Of the 229 (n=229) respondents who used condoms, the majority (76%; *f*=174) were from the Hhohho Region; however, considering the proportion of condom use for the different regions, condom use was highest in Shiselweni Region (80%; *f*=4; n=5); followed by Hhohho Region (68.5%; *f*=174; n=254); then Manzini Region (63.8%; *f*=44; n=69); and lastly, the Lubombo Region (58.3%; *f*=7; n=12). With the exception of Shiselweni Region (due to small numbers) the rate of condom use in the other regions is fairly evenly distributed (refer to table 4.54).

The Chi-square value, X^2 =1.364 was less than the critical value X^2 =7.81 at p value 0.05 and 3 degrees of freedom. The p value for the statistics, 0.714 is greater than 0.05 (refer to table 4.55). This means that there is no statistically significant association between condom use and the region.

Table 4.54 Condom use and region (N=340)

		In which region do you currently live?				Total
		Hhohho	Lubombo	Manzini	Shiselweni	
Condom use	No	80	5	25	1	111
	Yes	174	7	44	4	229
Total		254	12	69	5	340

Table 4.55 Chi-square test of condom use and region

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.364	3	0.714
No. of Valid Cases	340		

4.3.5.2.1.4 Condom use and area of residence

Of the 229 (n=229) respondents who used condoms, 131 (57.2%) were from urban areas and 98 (42.8%) were from rural areas. There were more urban dwellers who used condoms (73.2%; *f*=131; n=179) than those who lived in rural areas (60.7%; *f*=98; n=161) (refer to table 4.56). The current study findings show that urban dwellers are more likely to use condoms than their rural counterparts. This may be the case because several health facilities in the urban areas act as condom outlet points and increased access to safer sex education or information for the urban dweller as compared to the rural dwellers.

The findings raise the assumption that there is an association between condom use and one's type of residence (urban or rural). The Chi-square value obtained, X^2 =5.846 was greater than the critical value X^2 = 3.84 at p value 0.05 and 1 degree of freedom (refer to table 4.57). Also, the p value 0.016 was less than 0.05. This means that there is indeed a significant association between condom use and one's residence. The current study findings are consistent with observations made in South Africa, Cameroon and Uganda, that showed a consistently high condom use among urban dwellers compared to rural dwellers (Lurie et al, 2008:489; Dia et al, 2010:152; Bunnell et al, 2008:621) (refer to chapter 2; section 2.3.7).

Table 4.56 Condom use and area residence (N=340)

		Where is your residence located?		
		Rural	Urban	Total
Condom use	No	63	48	111
	Yes	98	131	229
Total		161	179	340

Table 4.57 Chi-square test of condom and area residence

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.846	1	0.016
No. of Valid Cases	340		

4.3.5.2.1.5 Condom use and marital status

Of the 229 respondents who used condoms, 106 (46.9%) were married; 96 (41.9%) were co-habiting; and 23 (10%) were single. The proportion of condom users for the different marital status was highest among the co-habiting group, 88.1%' (*f*=96; n=109) and the married, 84.1% (*f*=106; n=126); and lowest among the widows/widowers, 6.7%(*f*=2; n=28), who also had the highest rate of non-condom use (93.3%; *f*=28; n=30) (refer to table 4.58).

The current findings suggest that there is an association between condom use and one's marital status that being true for especially the co-habiting and married couples.

A Chi-square test performed gave a Chi-square value of X^2=132.458, which is greater than the critical value, X^2 = 11.07 at p value 0.05 and 5 degree of freedom (refer to table 4.59). Also the p value obtained, 0.000 was less than 0.05. This means that there is a statistically significant association between condom use and one's marital status.

The current study findings contrast the observation in a Ugandan study that showed that condom use was less likely among married or co-habiting compared to unmarried/single PLWHA (Bunnell et al, 2008:619-621). The findings further contrast the observations of two South African studies were there was no association between condom use and marital status of PLWHA (Nachega et al, 2005:198; Lurie et al, 2006:489).

Table 4.58 Condom use and marital status (N=340)

		What is your marital status						Total
		Single	Married	Co-habiting	Widow/ Widower	Divorced/ Separated	Other	
Condom use	No	34	20	13	28	9	7	111
	Yes	23	106	96	2	1	1	229
Total		57	126	109	30	10	8	340

Table 4.59 Chi-square test of condom use and marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	132.458	5	0.000
No. of Valid Cases	340		

4.3.5.2.1.6 Condom use and education/literacy level

Of the 229 respondents who used condoms, 131 (57.2%) attained secondary education; 73 (31.9%) attained primary school; and 16 (7%) had no education. The proportion of condom use for the various categories was evenly distributed with the exception of vocational training and no formal education category. In the no education 16 respondents (64%; n=25) indicated condom use; primary education 73 (67.6%; n=108), secondary education 131 (68.2%; n=192) and tertiary education 7 (53.8%; n=13) (refer to table 4.60).

Based on the current study findings, the assumption is that there is no relationship between condom use and level of education or literacy level. The Chi-square value, X^2 =2.246 was less than the critical value X^2 = 11.07 at p value 0.05 and 5 degrees of freedom. The p value, 0.814 was also greater than 0.05 (refer to table 4.61). This means that there is no statistically significant relationship between condom use and level of education. These findings are similar to the studies from two separate South African studies that reported no association between condom use and literacy level (Nachega et al, 2005:198; Kiene et al, 2006:1783). However, the findings are contrasted by the observations in studies conducted in South Africa, India and Cameroon, where higher rates of condom use was found to be associated with higher education/literacy levels (Lurie et al (2008:487; Deb et al, 2009:209; Dia et al, 2010:152).

Table 4.60 Condom use and literacy level (N=340).

		What is your highest educational attainment							Total
		No formal Education	None	Primary	Secondary	Tertiary	Post Tertiary	Vocational Training	
Condom use	No	0	9	35	61	6	0	0	111
	Yes	1	16	73	131	7	0	1	229
Total		1	25	108	192	13	0	1	340

Table 4.61 Chi-square test of condom use and literacy level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.246	5	0.814
No. of Valid Cases	340		

4.3.5.2.1.7 Condom use and religion/religious beliefs

Of the 229 (n=229) respondents who reported condom use, 219 (95.6%) were Christian, 2 (0.9%) were of the Islamic faith and the rest, 8 (3.5%), belonged to other religious beliefs. The rate of condom use within the various groups seemed to be evenly distributed with the exception of those of the Islamic faith, 100% (*f*=2; n=2). Christians also reported the highest rate of non-condom use, 31% (*f*=107; n=326) (refer to table 4.62). Generally there are high rates of condom use among the various religious groups. Similar findings were observed in the RAND (2007), study that people who considered religion to be an important part of their life were less likely to participate in risky sexual behaviours (refer to chapter 2; section 2.3.13).

The current study findings would suggest that there is no relationship between religious orientation and condom use. To test this relationship, a Chi-square test was performed and the result showed that the Chi-square value, X^2 =0.977 was less than the critical value X^2 =5.99 at p value 0.05 and 2 degree of freedom (refer to table 4.63). Also the p value 0.614 was greater than 0.05. This means that there is no significant association between condom use practices and religious beliefs.

Table 4.62 Condom use and religious beliefs (N=340)

		To which religion or religious belief do you belong			
		Christianity	Islam	Other	Total
Condom use	No	107	0	4	111
	Yes	219	2	8	229
Total		326	2	12	340

Table 4.62 Chi-square test of condom use and religious beliefs

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.977	2	0.614
No. of Valid Cases	340		

4.3.5.2.1.8 Condom use and employment status

Of the 229 (n=229) respondents who reported condom use, 117 (51.1%) were unemployed; 85 (37.1%) were employed by an institution or company; and, 27 (11.8%) were self-employed. The findings indicate that the unemployed were more likely to use condoms than the other categories. Also, of the 111 who did not use condoms, the highest non-condom use rate was observed among the unemployed, 51.3% (*f*=57) and the lowest rate among the self-employed (8.1%; *f*=9) (refer to table 4.64). These findings contrast the observations made in South Africa where condom use increased with increasing socio-economic/employment status of the respondents (Nachega et al, 2005:198; Lurie et al, 2008:487).

Considering the rates of condom use within the various employment status, the condom use rates were: self-employed, 75% (*f*=27; n=36); unemployed, 67.2% (*f*=57; n=174); and employed by institution or company, 65.4% (*f*=45; n=130).

The even distribution of condom use rates among the various employment categories suggests that there is no relationship between condom use and employment status. A Chi-square test result showed that X^2 = 1.187 was less than the critical value X^2 =5.99 at p value 0.05 and 2 degrees of freedom. Moreover, the p value, 0.552 was greater than 0.05 (see table 4.65). This means that there is no statistically significant relationship between condom use and employment status. Similar findings were observed in Cameroon, South Africa and the United Kingdom (Dia et al, 2010:151; Kiene et al, 2006:1783; Williamson, Dodds, Mercey, Hart and Johnson, 2008:1067).

Table 4.64 Condom use and employment status (N=340)

		What is your current employment Status?			
		Employed by institution or Company	Self-employed	Unemployed	Total
Condom use	No	45	9	57	111
	Yes	85	27	117	229
Total		130	36	174	340

Table 4.65 Chi-square test of condom use and employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.187	2	0.552
No. of Valid Cases	340		

4.3.5.2.2 Condom use and type of sexual relationship

Of the 229 (n=229) respondents who reported condom use, 132 (57.6%) were in steady sexual relationships, while 94 (41.1%) were in casual sexual relationships. Although the general rate of condom use within the casual relationship group (87.9%; *f*=94; n=107) and steady relationship (86.3%; *f*=132; n=153) was evenly distributed, those in steady relationships seem slightly more likely not to use condoms (13.7%; *f*=21; n=153) than those in casual relationships (12.1%; *f*=13; n=107) (refer to table 4.66).

Based on the findings, there seems to be a relationship between condom use and the type of sexual relationship, with condom use being higher in casual than steady relations. The Chi-square value X^2 =192.535 was greater than the critical value, X^2 =5.99 at p value 0.05 and 2 degrees of freedom. Also the p value, 0.000 is less than 0.05 (refer to table 4.67). This means that there is a significant association between condom use and type of sexual relationship. The current study findings are similar to those of two separate studies conducted in South Africa that showed that increased condom use (reduced risky sexual behaviour) was more likely among those in steady sexual relationships than those in casual sexual relationships (Lurie et al, 2008:480; Kiene et al, 2006:1782).

Table 4.66 Condom use and type of sexual relationship (N=340)

		How would you describe the relationship you have with your partner(s)?			Total
		Casual	No Partner	Steady	
Condom use	No	13	77	21	111
	Yes	94	3	132	229
Total		107	80	153	340

Table 4.67 Chi-square test of condom use and type of sexual relationship

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	192.535	2	0.000
No. of Valid Cases	340		

4.3.5.2.3 Condom use and number of sexual partners

Of the 229 (n=229) respondents who reported condom use, 197 (86%) had only 1 sexual partner and of the 111 who did not use condoms, the majority, 81 (73%) had no sexual partner at the time of the study. However, within the individual sexual partner categories, condom use was highest among those who had 2 to 5 sexual partners, at 96.2% (*f*=25; n=26); followed by the “only 1” sexual partner group at 87.6% (*f*=197; n=225). The findings suggest that those with more sexual partners (2 to 5) are more likely to use condoms than those with only 1 sexual partner (refer to table 4.68).

To test the relationship between condom use and number of sexual partners, a Chi-square test was performed and the value, X^2 =194.834 was greater than the critical value, X^2 =7.81 at p value 0.05 and 3 degrees of freedom. Also the p value, 0.000 is less than 0.05 (refer to table 4.69). This means that indeed there is a statistically significant association between condom use and the number of sexual partners.

The current study reveals that PLWHA with 2 to 5 sexual partners are more likely to use condoms than those with only 1 sexual partner. In contrast to the study findings, a South African and United Kingdom study observed increased unprotected sexual risk practices among PLWHA with 2 and more sexual partners (Kiene et al (2006:1782; Williamson et al, 2008:1067), and a French study showed no association between condom use and number of sexual partners (Bouhnik et al, 2007:S60-61) (refer to chapter 2; section 2.3.12).

Table 4.68 Condom use and number of sexual partners (N=340)

		How many sexual partners have you had in the last 3-6 months				
		None	Only 1	2-5	More than 5	Total
Condom use	No	81	28	1	1	111
	Yes	7	197	25	0	229
Total		**88**	**225**	**26**	**1**	**340**

Table 4.69 Chi-square test of condom use and number of sexual partners

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	194.834	3	0.000
No. of Valid Cases	340		

4.3.5.2.4 Condom use and knowledge of HIV status of sexual partner(s)

Of the 229 respondents who used condoms, 153 (66.8%) knew the HIV status of their sexual partners, while 56 (24.5%) did not know the HIV status of their sexual partners. And of the 111 who did not use condoms, 16 (14.4%) knew their sexual partner's HIV status while 11 (9.9%) did not know the HIV status of their sexual partners (refer to table 4.70).

The current study findings suggest that respondents who knew their sexual partners' HIV status were more likely to use condoms and vice versa. Thus, there is an association between knowledge of partner's HIV status and the use of condoms.

The computed Chi-square value, X^2 =158.848 was greater than the critical value, X^2 = 5.99 at p value 0.05 and 2 degrees of freedom. Also the p value, 0.000 is less than 0.05 (refer to table 4.71). This means that there is indeed an association between condom use and knowledge of a sexual partner's HIV status. Similar findings were observed in studies conducted in Uganda and Thailand, which reported positive association between knowing the status of a sexual partner and increased condom use (Bunnell et al, 2008:621; Punpuing & Richter, 2009:2-3). In contrast, findings from a French study observed no association between lack of knowledge of a sexual partner's status and practicing unsafe (unprotected) sexual intercourse among men; while for women, there was a positive association between lack of knowledge of a sexual partner's status and practicing unsafe (unprotected) sexual intercourse (Bouhnik et al, 2007:S59) (refer to chapter 2; section 2.3.9).

Table 4.70 Condom use and partner's HIV status (N=340)

	Condom use		
	No	Yes	Total
Partner status	84	20	104
No	11	56	67
Yes	16	153	169
Total	111	229	340

Table 4.71 Chi-square test of condom use and partner's HIV status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	158.848	2	0.000
No. of Valid Cases	340		

4.3.5.3 Sexual practices and disclosure

The items considered for sexual practices were condom use, type of sexual relationship, number of sexual partners and number of children hoped for.

4.3.5.3.1 Condom use and disclosure

Of the 229 (n=229) respondents who reported condom use, 224 (97.8%) had disclosed their HIV status. The rate of condom use was 70% (*f*=224; n=320) among those who disclosed, compared to 25% (*f*=5; n=20) among those who did not disclose. Non-condom use was also highest (75%; *f*=15; n=20) among those who had not disclosed their HIV status and lowest among those who had disclosed (30%; *f*=96; n=320) (refer to table 4.72).

The current study findings suggests that condom use is more likely among people who have disclosed their HIV status as opposed to those who have not disclosed their HIV status.

To test the relationship between condom use and disclosure, a Chi-square test was performed and the value, X^2 =17.335 was greater than the critical value X^2 = 3.84 at p value 0.05 and 1 degree of freedom. Also the p value, 0.000 is less than 0.05 (refer to table 4.73). This means that there is indeed a significant association between condom use and disclosure of HIV status. The findings of the current study are similar to the findings of the studies conducted in South Africa, United States (New York) and Uganda, which observed that practicing risky sexual behaviour (non-condom use) was more likely among those who had not disclosed than those who had disclosed (Simbayi et al, 2006:31;33; Parsons et al, 2005:S92-93; Lurie et al, 2006:489; Wong et al, 2009:219; King et al, 2008:232) (refer to chapter 2; section 2.3.14).

Table 4.72 Condom use and disclosure (N=340)

		Have you ever disclosed your HIV positive status to anyone		
		No	Yes	Total
Condom use	No	15	96	111
	Yes	5	224	229
Total		20	320	340

Table 4.73 Chi-square test of condom use and disclosure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.335	1	0.000
No. of Valid Cases	340		

4.3.5.3.2 Type of sexual relationship and disclosure

Of 153 respondents who had steady sexual partners, 149 (97.4%) had disclosed; theremore, of the 107 respondents who had casual sexual partners, 101 (94.4%) had disclosed. Respondents with casual sexual partners had a slightly higher (30%; *f*=6; n=20) non-disclosure rate compared to 20% (*f*=4; n=20) among those with steady sexual partners (refer to table 4.74). The disclosure rates were thus high for both groups (casual and steady sexual relationships).

The study findings suggest that there is no relationship between type of sexual relationship and disclosure. And the Chi-square test performed revealed that the Chi-square value, X^2 =9.294 was greater than the critical value, X^2 =5.99 at p value 0.05 and 2 degrees of freedom. Also the p value, 0.01 was less than 0.05 (refer to table 4.75). This means that contrary to the suggestions of the frequencies of cross tabulation, there is a significant relationship between type of sexual relationship and disclosure practices.

The current study findings concur with observations of studies conducted in United States (New York) and Uganda that showed that safer sex practices (condom use) were more likely with sexual partners to whom disclosure had been done (King et al, 2008:232; Parsons et al, 2005:S92-93) (refer to chapter 2; section 2.3.14).

Table 4.74 Type of sexual relationship and disclosure (N=340)

		Have you ever disclosed your HIV positive status to anyone		
		No	Yes	Total
How would you describe the relationship you have with your partner(s)?	Casual	6	101	107
	No Partner	10	70	80
	Steady	4	149	153
Total		20	320	340

Table 4.75 Chi-square test of sexual relationship type and disclosure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.294	2	0.010
N of Valid Cases	340		

4.3.5.3.3 Number of sexual partners and disclosure

Of the 225 respondents who had only 1 sexual partner, 216 (96%) had disclosed, while all 26 (100%) of the respondents with 2 to 5 sexual partners had disclosed. The 1 (100%) respondent with more than 5 sexual partners had also disclosed (refer to table 4.76).

The findings of the current study seem to suggest that there is no relationship between number of sexual partners and disclosure. A Chi-square test revealed that the Chi-square value, X^2 =10.088 was greater than the critical value, X^2 =7.81 at p value 0.05 and 3 degrees of freedom. Also the p value, 0.018 was less than 0.05 (refer to table 4.77). This means that contrary to the suggestions of the frequencies, there is in fact a significant association between the number of sexual partners one has and disclosure practices. The findings concur with observations made in studies in South Africa, USA that show an association between disclosure practices and number of sexual partners. The named studies particularly report increased number of sexual partners among those who have not disclosed (Simbayi et al (2006:31;33; Sullivan, 2005:33) (refer to chapter 2; section 2.3.14).

Table 4.76 Number of sexual partners and disclosure (N=340)

		Have you ever disclosed your HIV positive status to anyone		Total
		No	Yes	
How many sexual partners have you had in the last 3-6 months	2-5	0	26	26
	More than 5	0	1	1
	None	11	77	88
	Only 1	9	216	225
Total		**20**	**320**	**340**

Table 4.77 Chi-square test of number of sexual partners and disclosure (N=340)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.088	3	0.018
No. of Valid Cases	340		

4.3.5.3.4 Number of children hoped for and disclosure

Of the 45 respondents who hope to have more than 5 children, 43 (95.6%) disclosed; while of the 106 who hoped for 1 to 2 children, 99 (93.4%) had disclosed; and of the 154 who hoped for 3 to 5 children, 146(94.8%) had disclosed (refer to table 4.78). The even proportions would suggest that there is no relationship between number of children hoped for and disclosure. The Chi-square value of X^2 =3.532 was less than the critical value of X^2 =9.49 at p value 0.05 and 4 degrees of freedom. Also the p value, 0.473 was greater than 0.05 (refer to table 4.79). This means that there is no statistically significant relationship between number of children hoped for and disclosure.

The current study findings contrast the observations of a qualitative study conducted in Kenya study that showed that HIV positive pregnant women did not want to disclose their HIV status in order to maintain the possibility of being in a relationship and becoming pregnant (Ujiji et al, 2010:5;7).

Table 4.78 Number of children hoped for and disclosure (N=340)

		Have you ever disclosed your HIV positive status to anyone		Total
		No	Yes	
How many children do you wish or hope to have	>5	2	43	45
	1-2	7	99	106
	3-5	8	146	154
	None	2	9	11
	Not decided	1	23	24
Total		**20**	**320**	**340**

Table 4.79 Chi-square test of number of children hoped for and disclosure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.532	4	0.473
No. of Valid Cases	340		

4.3.5.4 Duration of ARV use and other variables

Since all respondents in the study were on antiretroviral therapy (ART), it was deemed necessary to cross tabulate other items, in keeping with the research objectives, with the item “Duration of ARV use”.

4.3.5.4.1 Duration of ARV use and disclosure

Of the 9 (n=9) respondents who had used ARVs for less than 1 month, 6 (66.7%) had disclosed; 93.3% (*f*=28; n=30) of respondents who had used ARVs for 1 to 3 months had disclosed; while of the 92.1% (*f*=58; n=63) of respondents who had used ARVs for 6 to 12 months had disclosed. Also of the 125 (n=125) respondents who had used ARVs for 1 to 3 years, 122 (97.6%) had disclosed their HIV status, whereas 93% (*f*=80; n=86) of respondents who had used ARVs for 3 to 5 years had disclosed their HIV status. Of the 27 respondents who had used ARVs for more than 5 years, 26 (96.3%) had disclosed their HIV status (refer to table 4.80).

With the exception of those who had used ARVs for less than one month (66.7%), the disclosure rates among those who had used ARVs for more than one month was quite high (ranging from 92.1% to 97.6%). The current study findings suggest that longer duration of ARV use is related to the increased disclosure of HIV status.

To test the relationship between duration of ARV use and disclosure, a Chi-square test was performed and the results revealed that the Chi-square value, X^2 =15.919 was greater than the critical value, X^2 =11.07 at p value 0.05 and 5 degrees of freedom. Also the p value, 0.007 was less than 0.05 (refer to table 4.81). This means that there is indeed a statistically significant association between duration of ARV use and the likelihood to disclose HIV status. Similar findings were observed in studies conducted in Guyana, Uganda, South Africa, West Africa and Ethiopia that showed that increased duration of ARVs use among PLWHA was associated with increased disclosure. The increased likelihood of disclosure with increased duration of ART use generally follows from the fact that disclosure becomes easier the longer someone has been living with HIV, as he or she becomes more comfortable with the HIV status. For many PLWHA, the timing of disclosure is one of the biggest challenges and it often takes time, even years, before disclosure happens (Florendo et al, 2006; Bateganya et al, 2005:760; Fougelberg et al, 2006:13; Ndiaye et al (2008:43; Gari et al, 2009:11; WHO, 2004:2; Remien & Bradley, 2007:64E) (refer to chapter 2 ; section 2.4.11).

Table 4.80 Duration of ARV use and disclosure (N=340)

		Have you ever disclosed your HIV positive status to anyone		
		No	Yes	Total
For how long have you been taking ARV's?	Less than a month	3	6	9
	Between 1-3 months	2	28	30
	Between 6-12months	5	58	63
	Between 1-3 years	3	122	125
	Between 3-5 years	6	80	86
	More than 5 years	1	26	27
Total		**20**	**320**	**340**

Table 4.81 Chi-square test of duration of ARV use and disclosure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.919	5	0.007
No. of Valid Cases	340		

4.3.5.4.2 Duration of ARV use and condom use

Of the 9 respondents who had used ARVs for less than a month, 66.7% (*f*=6) did not use condoms, and 57.3% (*f*=16; n= 30) of respondents who had used ARVs for 1 to 3 months, did not use condoms. However, of the 63 respondents who had used ARVs for 6 to 12 months, 63.5% (*f*=40) used condoms; 70.4% (*f*=88; n=125) of the respondents who had used ARVs for 1 to 3 years used condoms; while, 76.7% (*f*=66; n=86) of the respondents who had used ARVs for 3 to 5 years disclosed their HIV status. Also of the 27 who had used ARVs for more than 5 years, 66.7% (*f*=18) disclosed their HIV status (refer to table 4.82).

The current study findings show that people who have used ARVs for longer durations (6 months and more) are more likely to use condoms than those who have used ARVs for durations shorter than 6 months.

To test for the relationship between duration of ARV use and condom use, a Chi-square test was performed and the Chi-square value, $X^2 = 14.985$ was greater than the critical value, $X^2 = 11.07$ at p value 0.05 and 5 degrees of freedom. Also the p value, 0.010 was less than 0.05 (see table 4.83). This means that there is indeed a significant association between the duration of ARV use and condom use. The current study findings concur with observations in studies conducted in Côte d'Ivoire, Uganda and the USA that showed that ARV use is associated with increased condom use (protected sex) (Diabeté, Alary and Koffi, 2008:154-155 Andia et al, 2009:340; Diamond et al (2005:214) (refer to chapter 2; section 2.4.12).

Table 4.82 Duration of ARV use and condom use (N=340)

		Condom use		
		No	Yes	Total
For how long have you been taking ARV's?	Less than a month	6	3	9
	Between 1-3 months	16	14	30
	Between 6-12 months	23	40	63
	Between 1-3 years	37	88	125
	Between 3-5 years	20	66	86
	More than 5 years	9	18	27
Total		**111**	**229**	**340**

Table 4.83 Chi-square test of duration of Arv use and condom use

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.985	5	0.010
No. of Valid Cases	340		

4.3.5.4.3 Duration of ARV use and type of sexual relationship

Five (55.6%; n=9)) respondents who had used ARVs for less than a month had no partners; 12 (40%; n=30) of the respondents who had used ARVs for 1 to 3 months had steady sexual partners; while 24 (53.3%; n=45) of the respondents who had used ARVs for 6 to 12 months had casual sexual partners. Also, 55 (44%; n=125) of the respondents who had used ARVs for 1 to 3 years had steady sexual partners; whereas 45 (52.3%; n=86) of the respondents who had used ARVs for 3 to 5 years had steady sexual partners; and 15 (55.6%; n=27) of the respondents who had used ARVs for more than 5 years had steady sexual partners (refer to table 4.84).

The study findings show that use of ARVs for 1 and more years seems to have a relationship with having a steady sexual partner and ARV use for less than a year is related to having casual sexual partners.

A Chi-square test was performed to test this relationship and the Chi-square value, X^2 =15.494 was less than the critical value, X^2 =18.31 at p value 0.05 and 10 degrees of freedom. Also the p value, 0.115 was greater than 0.05 (refer to table 4.85). This means that there is no statistically significant relationship between duration of ARV use and the type of sexual relationship. The current study findings contrast with the findings of studies conducted in Uganda where it was observed that ARV use was associated with increase in casual sexual relationships (Bateganya et al, 2005:764-766).

Table 4.84 Duration of ARV use and type of sexual relationship (N=340)

		How would you describe the relationship you have with your partner(s)?			
		Casual	No Partner	Steady	Total
For how long have you been taking ARV's?	Less than a month	0	5	4	9
	Between 1-3 Months	9	9	12	30
	Between 6-12months	24	17	22	63
	Between 1-3 years	42	28	55	125
	Between 3-5 years	27	14	45	86
	More than 5 years	5	7	15	27
Total		**107**	**80**	**153**	**340**

Table 4.85 Chi-square test of duration of ARV use and type of sexual relationship

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.494	10	0.115
No. of Valid Cases	340		

4.3.5.4.4 Duration of ARV use and number of sexual partners

Considering how many sexual partners one had had for the different durations of ARV use, 5 (55.6%; n=9) of respondents who had used ARVs for less than a month had no sexual partners; 17 (56.7%; n=30) of respondents who had used ARVs for 1 to 3 months had only 1 sexual partner; while 36 (57.1%; n=63) of respondents who had used ARVs for 6 to 12 months had only 1 sexual partner. Eighty three (66.4%; n=125) of respondents who had used ARVs for 1 to 3 years had only 1 sexual partner; 69 (80.2%; n=86) of respondents who had used ARVs for 3 to 5 years had only one sexual partner, and 17 (63%; n=27) of respondents who had used ARVs for more than 5 years had only 1 sexual partner (refer table 4.86).

The study findings show that increasing duration of use of ARVs may be related to having only one sexual partner. To test this relationship, a Chi-square test was performed and the Chi-square value, X^2 =29.379 was greater than the critical value, X^2 =25.00 at p value 0.05 and 15 degrees of freedom (refer to table 4.87). Also the p value, 0.014 was less than 0.05. This means that there is indeed a significant relationship between duration of ARV use and the number of sexual partners. The study findings are similar to the findings of a study conducted in Uganda that observed that ARV use was associated with reduced number of sexual partners (Bukenya, 2008:42;46).

Table 4.86 Duration of ARV use and number of sexual partners (N=340)

		How many sexual partners have you had in the last 3-6 months				
		2-5	More than 5	None	Only 1	Total
For how long have you been taking ARV's?	Less than a month	1	0	5	3	9
	Between 1-3 months	8	0	10	17	30
	Between 6-12 months	8	0	19	36	63
	Between 1-3 years	8	0	34	83	125
	Between 3-5 year	3	0	14	69	86
	More than 5 years	3	1	6	17	27
Total		**26**	**1**	**88**	**225**	**340**

Table 4.87 Chi-square test of duration of ARV use and number of sexual partners

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.379[a]	15	0.014
Likelihood Ratio	22.784	15	0.089
N of Valid Cases	340		

4.3.5.5 Other study findings

4.3.5.5.1 Number of children hoped for and gender

The current study findings show that being of the female gender was significantly associated with hoping to have 1 to 2 children, 80.2% (*f*=85; n=106) compared to males, 19.8% (*f*=21; n=106);. also, 77.9% (*f*=120; n=154) of females hoping to have 3 to 5 children compared 22.1% (*f*=34; n=154) males (refer to table 4.88). To test this relationship, a Chi-square test was performed and the Chi-square value, X^2 =9.959 was greater than the critical value, X^2 =9.49 at p value 0.05 and 4 degrees of freedom. Also the p value, 0.014 was less than 0.05. This confirms the existence of a statistically significant association between number of children hoped for and gender.

Table 4.88 Number of children hoped for and gender (N=340)

		Gender		Total
		Female	Male	
How many children do you wish or hope to have?	>5	27	18	45
	1-2	85	21	106
	3-5	120	34	154
	None	9	2	11
	Not decided	15	9	24
Total		**256**	**84**	**340**

4.3.5.5.2 *Number of children hoped for and age*

Among those respondents who hoped to have 1 to 2 children, 45.3% (*f*=29; n=64) were between 25 to 29 years of age; 42.4% (*f*=28; n=66) were in the 30 to 34 years age group; and 33.8% (*f*=24; n=71) were between 35 to 39 years old. Furthermore, among those who hoped to have 3 to 5 children, 39.1% (*f*=25; n=64) were aged 25 to 29 years; 48.5% (*f*=32; n=66) were in the 30 to 34 years age group; and 49.3% (*f*=35: n=71) were between 35 to 39 years old (refer to table 4.89). The Chi-square value, X^2 =160.141 was greater than the critical value, X^2 =50.998 at p value 0.05 and 36 degrees of freedom. Also the p value, 0.000 was less than 0.05. There is therefore a statistically significant association between number of children hoped for and age.

Table 4.89 Number of children hoped for and age (N=340)

		How old are you in years?										Total
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	>=60	
How many children do you wish or hope to have?	None	1	1	5	0	1	0	1	1	0	1	11
	1- 2	0	12	29	28	24	5	5	1	2	0	106
	3- 5	0	7	25	32	35	24	14	7	7	3	154
	>5	0	0	2	1	2	13	9	13	0	5	45
	Not decided	0	1	3	5	9	3	1	1	1	0	24
Total		**1**	**21**	**64**	**66**	**71**	**45**	**30**	**23**	**10**	**9**	**340**

4.3.5.5.3 *Number of children hoped for and marital status*

The findings show that 54.4% (*f*=31; n=57) of the single respondents; 25.4% (*f*=32; n=126) of the married respondents; and 33% ((*f*=36; n=109; 33%) of the co-habiting were seemingly more likely to hope for 1 to 2 children; while 28.1% (*f*=16; n=57) of the single respondents; 50.8% (*f*=64; n=126) of married respondents; and 45.9% (*f*=50; n=109) of the co-habiting respondents were significantly likely to hope for 3 to 5 children (refer to table 4.90). To test this relationship, a Chi-square test was performed and the chi-square value, X^2 =45.052 was greater than the critical value, X^2 =37.7 at p value 0.05 and 20 degrees of freedom. Also the p value, 0.001 was less than 0.05. There is therefore a statistically significant relationship between number of children hoped for and marital status..

Table 4.90 Number of children hoped for and marital status (N=340)

		What is your marital status						
		Single	Married	Co-habiting	Widow/ Widower	Divorced/ Separated	Other	Total
How many children do you wish or hope to have?	None	5	1	11	1	1	2	11
	1- 2	31	32	36	4	2	1	106
	3- 5	16	64	50	14	6	4	154
	>5	2	20	3	9	0	1	45
	Not decided	3	9	9	2	1	0	24
Total		**57**	**126**	**109**	**30**	**10**	**8**	**340**

4.3.5.5.4 Number of children hoped for and number of children alive

The findings show that 62% (*f*=85; n=137) of respondents who had 1 to 2 children hoped to have 1 to 2 children (realized their ideal number of children) and 29.9% (*f=41*; n=137) in the same group (those who had 1 to 2 children) hoped to have 3 to 5 children (in other words they had not yet realized their ideal number of children). Also, 83.2% (*f*=109; n=131) of the respondents who have 3 to 5 children hoped to have 3 to 5 children; in other words, they had realized their ideal number of children (refer to table 4.91). To test this relationship, a Chi-square test was performed and the Chi-square value, X^2 =431.224 was greater than the critical value, X^2 =21 at p value 0.05 and 12 degrees of freedom. Also the p value, 0.000 was less than 0.05. There is therefore, a significant association between number of children hoped for and number of children alive.

Table 4.91 Number of children hoped for and number of children alive (N=340)

		How many children do you wish or hope to have					
		None	1- 2	3- 5	>5	Not decided	Total
How man living biological children do you have?	None	10	18	4	0	6	38
	1- 2	1	85	41	1	9	137
	3- 5	0	3	109	12	7	131
	>5	32	0	0	0	2	34
Total		**11**	**106**	**154**	**45**	**24**	**340**

4.4 SUMMARY

In this chapter the data obtained via a self designed questionnaire are presented. The presentation follows the format of the questionnaire and the objectives set for the current research and relate to socio-demographic data, HIV disclosure and non-disclosure practices, sexual practices and antiretroviral therapy.

Associations among different variables were determined via Chi square (X^2) calculations. Statistically significant associations seem to exist among the following variables; namely, disclosure of HIV status was significantly associated with the female gender (*p*=0.03); region where respondent lived (*p*=0.008) and religious beliefs (Christianity) of the respondents (*p*=0.016). Also, condom use was significantly associated with disclosure of HIV status (*p*=0.000), being of the male gender (*p*=0.002), living in urban areas (*p*=0.016), marital status (co-habiting) (*p*=0.000), type of sexual relationship (casual) (*p*=0.000), having 2 to 5 sexual partners (*p*=0.000), and having knowledge of the HIV status of sexual partners (*p*=0.000). The duration of ARV use was significantly associated with disclosure (*p*=0.007), condom use (*p*=0.010) and having only 1 sexual partner (*p*=0.014). While in other findings, hoping to have more than 1 child was significantly associated with being of the female gender (*p*=0.014) and being 25 to 39 years old (*p*=0.000).

In the next chapter, chapter 5, the main findings, are discussed, conclusions drawn and recommendations made according to the objectives set for the current research.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the conclusions, implications, recommendations and limitations of the study regarding the HIV disclosure and sexual practices of PLWHA on antiretroviral therapy, at the Mbabane National Referral VCT/ART Center, in Swaziland. The main issues covered in this chapter relate to the HIV disclosure practices of PLWHA, their sexual practices and being on antiretroviral therapy.

5.2 RESEARCH DESIGN, METHOD AND PURPOSE

A quantitative descriptive research design was utilised during the current study. A self-designed questionnaire was used to collect data from 340 respondents recruited through systematic random sampling.

The main purpose of the study was to identify and describe, quantitatively, context specific factors influencing HIV sero-status disclosure and sexual practices among HIV positive persons receiving antiretroviral drugs at the Mbabane National Referral VCT/ART Centre, Swaziland.

5.3 STUDY OBJECTIVES

The findings presented in chapter 4 of this dissertation, serve to address the objectives that were formulated in chapter 1 of the dissertation. Each objective is listed, the main findings of the objective are presented and discussed, followed by conclusions and recommendations relating to each objective.

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5.3.1 Objective 1: To describe the HIV disclosure practices among PLWHA on antiretroviral therapy.

5.3.1.1 Findings and discussions

The research findings (refer to chapter 4; section 4.3.2), show a high general disclosure rate of 94.1% (*f*=320; N=340) among the respondents. The majority, 81.3% (*f*=260;n=320) of the respondents who had disclosed, took their first HIV test more than 1 year prior to the study with the first HIV test more likely to have been taken 3 to 4 years prior to the study, 32.5% (*f*=104; n=320). According to Norman et al (2005:1), HIV status disclosure is an essential first step in behaviour modification required to reduce the incidence of HIV and enhance adherence to complex treatment regimens, such as ART. However, even with high disclosure rates, one of the main challenges faced by PLWHA is that of the timing of disclosure. The very experience of disclosure is a struggle for many PLWHA and this often causes delayed disclosure among PLWHA, which may even be years (Remien & Bradley, 2007:64E). According to the WHO (2004:2), disclosure generally becomes easier the longer a person has been living with HIV, as he or she becomes more comfortable with his or her HIV status. The current study findings show that the highest proportion, 35.3% (*f*=113; n=320) disclosed 1 to 3 years from time of diagnosis of HIV to disclosure.

Most of the disclosures in the current study, 57.5% (*f*=184; n=320), were observed to have been towards spouses or sexual partners and disclosure was more likely towards steady sexual partner, 97.4% (*f*=149; n=153) than casual partners, 94.4% (*f*=101; n=107). According to Remien and Bradley (2007:64E), most HIV positive persons do disclose to some but not all of their sexual partners, friends and family. In fac, it is argued by WHO (2004:1), that disclosure of HIV status to sexual partners may motivate the sexual partners of the PLWHA to seek HIV testing (as a first step to prevention of transmission of HIV), and change to safer sexual behaviour and ultimately reduce the risk of HIV transmission from the infected to the uninfected sexual partner (WHO, 2004:1). In the current study, 88.2% (*f*=209; n=237) of the respondents reported that their sexual partner(s) knew their HIV positive status. Also, in the current study, it was observed that disclosure least occurred to religious/spiritual leaders, 0.9% (*f*=3; n=320). Kelly (2003:2-3), argues that the potential of organized religion to contribute constructively to the reduction of HIV transmission and the care and support of all who are affected, stem, among others, from the fact that Christianity and Islam are resolute in proposing high ideals for their followers. However, due to these 'high ideals', those who fall short may often be considered immoral; a reaction that could make the PLWHA less likely to disclose to spiritual leaders.

The generally high disclosure rates observed coupled with the increased tendency to disclose to sexual partners or spouses and the increased knowledge of PLWHAs' HIV positive status among their sexual partners demystifies to some extent the belief reported by The Government of Kingdom of Swaziland (2006c:7), that most HIV positive persons keep their positive status a secret even to their sexual partners and, as a result, many continue to have sex with their regular and/or casual sexual partners without protection, hence passing on the infection both knowingly and unknowingly. However, delay in disclosure of HIV status, the negative experiences following disclosure and the observed reasons for non-disclosure, are areas that require specific attention because these fears can unfortunately lead to loss of opportunities for the prevention of new infections and the ability to access appropriate care, treatment and support services for those who are in need of them (Taraphdar et al, 2007:280).

With regard to motivators for disclosure, the five key motivators for disclosure to sexual partners and significant others were the need for physical and emotional support, 95% (*f*=304; n=320); the belief that non-disclosure was not the right thing to do, 96.2% (*f*=308; n=320); desperation and no one to turn to, 78.1% (*f*=250; n=320), and the need to access HIV treatment and care, 95.3% (*f*=305; n=320); and concern for the health of sexual partners, 84.3% (*f*=270; n=320); these were the leading 5 motivators for disclosure. According to Kadowa and Nuwaha (2009:28) and WHO (2004:2), the sense of ethical responsibility/concern for sexual partners' health, need for social support to cope with the diagnosis, need to access HIV treatment and the need to alleviate the stress associated with non-disclosure, are some of the motivators for disclosure of HIV status. In fact, the two main benefits that followed disclosure in this study were receiving material support, 61% (*f*=158; n=259) and counseling/emotional support, 11.5% (*f*=30; n=259).

In the current study, positive reactions (responses) were generally obtained from people to whom disclosure had been made, namely they being: caring and supportive (93.4%; *f*=299; n=320); sympathetic (94.3%; *f*=302; n=320); and encouraging (100%; *f*=54; n=54). According to Norman et al (2007:1778) and WHO (2004:2), disclosure of HIV status to sexual partners in both the developed and developing countries is generally associated with increased social support, acceptance, kindness, decreased anxiety and depression and strengthening of relationships. The positive reactions correspond with the personal feelings that followed disclosure among the PLWHA; namely, 93.8% (*f*=300; n=320) felt more at peace, 85.3% (*f*=273; n=320) felt they were encouraged to disclose to new future sexual partners and 90% (*f*=288; n=320) felt free and unburdened.

Notably, 22.6% (*f*=61;n=270) of respondents were stigmatized and 16.2% (*f*=44; n=270) were discriminated against and even among those who had disclosed, 46.9% (*f*=150; n=320) indicated that they would never disclose their HIV status again; while 31.2% (*f*=100; n=320) felt that they can not be part of any public activities anymore. These negative experiences and feelings could compromise one's willingness to disclose in future. In fact the leading reasons for non-disclosure were: the fear of being stigmatized and discriminated against, 80% (*f*=16; n=20); the fear of loss of employment/source of income, 75% (*f*=9; n=12); and the feeling that the time to disclose HIV status was not yet right, 90% (*f*=18; n=20); were the leading reasons for non-disclosure. Similarly, for those who did not disclose their status, reasons for non-disclosure included the fear of being stigmatized and discriminated against, (80%; *f*=16; n=20); fear of loss of employment/source of income (75%; *f*=9; n=12); and the feeling that the time to disclose HIV status was not yet right (90%; *f*=18; n=20) (refer to sections 4.3.2.1 to 4.3.2.1.2.4 of chapter 4 of this dissertation). Medley et al (2004:300) and Norman et al (2005:6), advance similar reasons for non-disclosure, and according to Simbayi et al (2007:33), previous negative disclosure outcome especially discrimination is one strong independent predictor of not disclosing to sex partners.

However, regarding the personal feelings that followed on disclosure, 93.8% (*f*=300; n=320) of the respondents felt more at peace; 85.3% (*f*=273; n=320) felt they were encouraged to disclose to new future sexual partners; and 90% (*f*=288; n=320) felt free and unburdened. The positive experiences/outcomes or reactions following disclosure observed in the study could be used as platforms to enhance the involvement of PLWHA for increased disclosure and thus play a critical role in preventing further spread of the virus because for every new HIV infection, an HIV positive person is involved (Kalichman, 2005:536; Nachega et al, 2005:204).

5.3.1.2 Specific conclusions and recommendations

From the study findings, the following specific conclusions and recommendations are drawn with regard to HIV disclosure practices among PLWHA:

- **Conclusion**: Most of the respondents took an HIV test more than a year prior to the study and the duration for most respondents between HIV diagnosis and access to ART/HIV care was 1 to 3 years.

  Recommendation: There is need at the Mbabane National Referral VCT/ART Centre, Swaziland to develop strategies to encourage early diagnosis and prompt enrolment into HIV/ ART care to avoid delays in seeking care that may in turn lead to increased mortality to HIV disease.

- **Conclusion**: Nearly half of the respondents indicated that they will never disclose again.

  Recommendation: The Mbabane National Referral VCT/ART Centre, Swaziland needs to develop strategies, not only to encourage disclosure, but also to deal with some of negative effects/ reactions that may have resulted from disclosure of HIV positive status.

- **Conclusion**: In spite of the positive outcomes of disclosure of positive HIV status, PLWHA still face stigmatization and discrimination which significantly lead many PLWHA not to disclose their HIV status.

  Recommendation: The Mbabane National Referral VCT/ART Centre, Swaziland needs to intensify efforts/strategies to combat stigma and discrimination. The Centre need to make a concerted effort to “normalise” HIV/AIDS within the Swazi community.

- **Conclusion**: Very few respondents were willing to disclose their HIV status to their spiritual leaders. It would seem that those persons (spiritual leaders) who promote themselves as trustworthy, as sources of help and assistance, and the like, are least “trusted” by PLWHA.

  Recommendation: There is need for the Mbabane National Referral VCT/ART Centre, Swaziland to involve spiritual leaders in the fight against HIV/AIDS and to inform them about ART and related issues. Health care professionals could lead research into the reasons why respondents (PLWHA) do not confide in them.

- **Conclusion:** Disclosure to spouses and sexual partners is still low. There is need to develop strategies and programs to equip PLWHA with knowledge and skills to enhance disclosure to sexual partners.

  Recommendation: The Mbabane National Referral VCT/ART Centre, Swaziland needs to implement a programme involving community elders and leaders to promote disclosure to sexual partners. Therapy for couples could also be expanded.

5.3.2 Objective 2: To describe the sexual practices among HIV positive persons on antiretroviral therapy.

5.3.2.1 Findings and discussions

Considering the sexual practices of the respondents, the study findings indicate that 21.5% (*f*=55; n=256) of females had their menarche before 14 years of age and the majority, 86.8% (*f*=295; N=340) had their first sexual encounter above the age of 15 years. According to Glynn et al (2010), early menarche is associated with early initiation of sexual activity and early marriage, and these practices have the potential to spread HIV from the infected to non-infected persons. However, the age of sexual debut for most respondents, 86.8% (*f*=295; N=340)) was above 15 years, a positive finding that should be encouraged to avoid possible early infection with the HI-virus.

With regard to the number of biological children respondents had, 40.3% (*f*=137; N=340) of the respondents had 1 to 2 children; while 11.2% (*f*=38; N=340) had none. Regarding number of children desired (hoped for), 45.3% (*f*=154; N=340) hoped to have 3 to 5 children. The SDHS (2006-2007:49;101) reveals that in Swaziland, the average births per woman is 3.8 and 41% of women consider having 2 children to be ideal. The desire to have children means that at some point in time, unprotected sex has to be practiced. This underscores the need for interventions to help PLWHA stay safe and also play an active role in stopping the spread of HIV because changing the behaviour of one infected person may help prevent many of the person's sexual partners from being infected (UNDP, 2006; Kalichman, 2005:536).

It was also observed in the current study that 45% (*f*=153; N=340) of respondents had steady sexual partners compared to 31.5% (*f*=107; N=340) who had casual sexual partners. The type of sexual partner or sexual relationship may influence the type of sexual practices in such relationships. This is discussed further in section 5.3.4 of this chapter. The number of sexual partners one has (especially having multiple sexual partners) is also a risk factor for the spread of HIV; more so, when unprotected sex is practiced. In this study most respondents, 66.2% (*f*=225; N=340) had only 1 sexual partner while 25.9% (*f*=88; N=340) had none at time of the study.

The use of contraceptives has two main benefits; firstly, it helps to prevent unplanned pregnancies and secondly, it helps to protect against sexually transmitted diseases (STDs), including HIV. So, for those who choose to be sexually active, contraception also helps to reduce, though not eliminate, the risk of either pregnancy and/or STDs (Cates, 2006:1) In the current study, 67.3% (*f*=229; N=340) of respondents used condoms as a method of contraception; 26.2% (*f*=89; N=340) used none; 1.8% (*f*=6; N=340) used oral contraceptive pills; 3.8% (*f*=13; N=340) used injectable contraceptives; and only, 0.3% (*f*=1; N=340) reported surgical contraception. A majority of respondents use condoms as their main contraceptive method and the proportion using other contraception methods is low.

With specific regard to frequency of condom use, the majority, 70.2% (*f*=179; n=255) of the respondents used condoms all the time, while only 2% (*f*=5; n=255) used condoms rarely, and condom use was more likely in casual relationships, 79.6% (*f*=195; n=245). The frequency of condom use may be used as a proxy indicator for risky sexual practices, which in turn influences the risk of HIV transmission. Moreover, the consistent and correct use of the male condom although not suitable for all users, has been shown to protect against HIV/STIs as well as unplanned pregnancies (Family health international, 2011). The two leading reasons for condom use in this study were to avoid infecting their sexual partners, 99.2% (*f*=243; n=245); and to avoid contracting STIs, 99.2% (*f*=243; n=245). Lastly, the single leading reason for not using the condom was sexual partners' refusal to use condoms, 85.7% (*f*=54; n=63). According to Garko (2007:125), some male PLWHA do not like using condoms because they feel condoms "remove the pleasure of sex", some do not believe in condoms, yet others feared that the condoms would go missing inside the woman. There is need to further explore the reasons for partner refusal to use condoms due to its potential to increase risky sexual behaviour among PLWHA.

The majority of respondents, 87.5% (*f*=223; n=255) indicated that their sexual partners made the decision on when to have sex. Partners seem to play a role in the decision to have sex than the individuals themselves. According to Garko (2007:125) a majority of female PLWHA seem not to be well informed about the issue of safe sex and planned pregnancy. The major problem among these women seems to be the inability to decide on when to have sex, a role which appears to be exclusively preserved for men (refer to sections 4.3.3.1 to 4.3.3.15 of this chapter).

5.3.2.2 Specific conclusions and recommendations

From the findings of the study, the following conclusions and recommendations are drawn:

- **Conclusion**: The fact that the age of sexual debut for most respondents was above 15 years of age, leaves an open window period for effective sex education.

  Recommendation: HIV/AIDS prevention education programs in schools need to start some time before the age of 15 to ensure that the youth are equipped with information to practice safe sex. In addition programmes at school should promote the delay of sexual debut. An active buddy system could be promoted in this regard.

- **Conclusion**: The longing to have children does not end with the knowledge of being HIV positive. Nearly half of the respondents hoped to have 3 to 5 children in their life time. This implies that they had not yet achieved their ideal number of children and to do this, unprotected sexual intercourse would have to be practiced.

Recommendation: The Mbabane National Referral VCT/ART Centre, Swaziland needs to establish at different points in time along the ARV treatment of PLWHA their wish and intention towards having more children. These individuals should be educated about the best possible ways of becoming pregnant with the least possible risk of becoming infected or of spreading HIV. The centre needs to launch an official research programme in this regard.

- **Conclusion**: With 75.3% (*f*=256; N=340) of the respondents having been female, and 87.5% (*f*=223; n=255) of respondents having their sexual partners decide on when to have sex, implies that sexual partners (mostly men) make the decision on when to have sex and when to use a condom. The single most significant reason for non-use of condoms was partner refusal.

  Recommendation: The Mbabane National Referral VCT/ART Centre, Swaziland should implement a concerted effort with community leaders and elders to promote and improve the position of women in society in general and with regard to sex and sexual practices specifically. Whether or not the sexual encounter results from a stable or a casual relationship, women must be empowered and men must come to realize women’s basic human right to refuse sex.

- **Conclusion:** Most respondents used condoms to either avoid infecting their sexual partners or avoid contracting STIs themselves.

  Recommendation: This is a positive finding that other HIV prevention strategies should be built upon.

5.3.3 Objective 3: Identify the underlying factors influencing HIV disclosure among PLWHA on antiretroviral therapy.

5.3.3.1 Findings and discussions

The research findings indicate that HIV disclosure practices among PLWHA is influenced by gender, the region where the respondents live, religious orientations, and duration of ART use (refer to chapter 4 section 4.3.5.1.1 to 4.3.5.1.9). Disclosure was also influenced by the number of sexual partners one had, condom use and type of sexual partners, which are dealt with under objective 5; in section 5.3.5.1. The mentioned factors were observed to increase the tendency of PLWHA to disclose their HIV status.

Women constitute 60% of people living with HIV in Sub-Saharan Africa and unfortunately the norms related to women do prevent, especially young women, from accessing HIV information and services. Worse still, women who fear or experience gender violence, often lack the power to ask their partners to use condoms or to refuse unprotected sex. As a result, the fear of gender violence can prevent women from learning and/or disclosing their HIV status and accessing treatment (WHO, 2009a). Contrary to the WHO observations, being of the female gender in the current study was observed to be associated with higher disclosure rates, 95.7% (*f*=245; n=320) compared to males, 89.3% (*f*=75; n=320), and the female gender was significantly associated with higher disclosure rates at $X^2=3.84$ (p=0.03; df=1).

With regard to region where the respondents lived, it was observed that living in the region (Hhohho and Shiselweni), a characteristic applicable only to Swaziland, was associated with higher disclosure rates at $X^2=7.81$ (*p*=0.008, df=3). This may perhaps be due to the fact that the capital city, Mbabane is located within Hhohho Region and this area, like the Shiselweni Region, has relatively many health facilities, where PLWHA can readily obtain information and skills to enhance HIV disclosure.

HIV affects the entire being of a person; socially, physically and emotionally, and for many affected people, the way to treat an emotional problem (such as the emotions associated with HIV) is through religion and spirituality. It is thought that religion and spirituality helps an HIV infected person to live their lives, interpret their circumstances and apply what they have learned to their new life with HIV (Cichocki, 2007); one aspect of this new life with HIV is disclosure. Indeed, the study findings observed that religious orientation, Christians, 94.8%; *f*=309; n=326 were more likely to disclose than those who belonged to other religious beliefs. This characteristic (religious orientation) was also found to be associated with disclosure at X^2=5.99 (*p*=0.016, df=2). However, spiritual leaders were not amongst respondents' choice as persons to whom they (respondents) would disclose their HIV status (refer to chapter 4; section 4.3.5.1.7).

It was also observed in this study that those respondents who used ARVs for a longer duration (3 to 5 years), exhibited higher disclosure rates, 93%; (*f*=80; n=86), and longer duration of ARV use was significantly associated with disclosure at X^2=15.919 (*p*=0.007; df=5). According to Lurie et al (2008:484-485), the increasing access to antiretroviral therapy (especially in the resource limited setting) has magnified the importance of addressing risk-taking behaviour among HIV infected adults. Although less infectious, people living with HIV on ART live considerably longer thereby increasing the duration of potential exposure to HIV for their sero-negative sexual partners. For this reason, disclosure may have lifelong implications due to increased longevity of life as a result of ARV usage. Similarly, Sarna et al (2005:2-5) and Florendo et al (2006) report that HIV positive persons on antiretroviral therapy exhibit increased levels of disclosure of HIV status and lower sexual risk behaviours compared to those who are not on antiretroviral therapy.

However, disclosure of HIV status among PLWHA was observed *not* to be influenced by age of respondents (*p*=0.304; df=9), area of residence (urban or rural) (*p*=0.828; df=1), marital status (*p*=0.307; df=5), literacy level (*p*=0.173; df=5), employment (*p*=0.797; df=2) or nationality (*p*=0.257; df=1) (refer to sections 4.3.5.1.1 to 4.3.5.1.9 of chapter 4 of this dissertation).

5.3.3.2 Specific conclusions and recommendations

Based on the research findings the following conclusions and recommendations are drawn:

- **Conclusion:** The high disclosure rates among the females observed in this study is a positive finding on which prevention strategies and programs could build on for targeted HIV prevention efforts especially among the women.

  Recommendation: An in depth qualitative study into the male/female differences with regard to disclosure of HIV status needs to be undertaken by the Mbabane National Referral VCT/ART Centre, Swaziland.

- **Conclusion:** The high disclosure rates observed in especially the Hhohho regions and Shiselweni regions, imply that the availability of HIV/AIDS outlet services promotes disclosure.

  Recommendation. There is a need for increased service outlet points in regions other than Hhohho and Shiselweni, in Swaziland. The Mbabane National Referral VCT/ART Centre should become actively involved in assisting underutilised facilities to promote their services among communities as well as serve as sources of practice information for health workers in these facilities.

- **Conclusion**: Religious orientation plays an important role in PLWHA's decision to disclose their HIV status.

  Recommendation: Spiritual or religious leaders should be actively involved in the HIV/AIDS campaign; in care, treatment and support programs. Considering the catchment area of the Mbabane National Referral VCT/ART Centre, Swaziland, this centre has a huge role to fulfil in engaging these leaders in "normalizing" HIV/AIDS and to support Government's attempts at de-stigmatising the phenomenon.

- **Conclusion:** There is an association between ARV use and increased disclosure rates. ART thus seems a factor in “normalizing” HIV/AIDS; looking upon it as just another disease and not as a specific curse.
- **Recommendation:** This emphasises the need to expedite the ART coverage to reach the targeted numbers in need of ARV’s in Swaziland. The HIV prevention information given during the preparation for ART initiation, and during use of ARV, would make the ART service outlets one of the platforms to strengthen HIV prevention strategies especially among PLWHA. The expertise of the Mbabane National Referral VCT/ART Centre, Swaziland could be put to use in this regard.

5.3.4 Objective 4: Identify the factors influencing sexual practices among HIV positive people receiving antiretroviral drugs.

5.3.4.1 Findings and discussions

Condom use was considered as the main variable under sexual practices. The research findings revealed several factors that were observed to influence or were associated with condom use (refer to sections 4.3.5.2.1.1 to 4.3.5.2.1.8; 4.3.5.2.2 to 4.3.5.2.4 & 4.3.5.4.2 of this chapter). .

From the findings it was observed that being of the male gender was significantly associated with higher rates of condom use (practicing safe sexual behaviour), 81% (f=68; n=84) at X^2=9.383 (p=0.002; df=1). The complex link that exists between gender-power relations, intimate (especially female) violence and myths/cultural notions about condoms and masculinity in many parts of the world (especially in Sub-Saharan Africa) that equate being a man to dominance over women, sexual conquest and risk-taking, limit the use of condoms (Cloete et al, 2010:14; Greig et al, 2008:S35; WHO, 2009a; Andersson et al, 2008:S75). Combining male cultural dominance over females and the positive association between being male and condom use is a positive finding.

Condom use among urban dwellers was observed to be significantly higher than their counterparts who live in rural areas, 73.2% (*f*=131; n=179) at X^2=5.846 (*p*=0.016; df=1). This observation, as in other studies, might be due to the fact that urban areas have relatively more outlet points and a more active media awareness among its dwellers through which condom use information, as well as condoms themselves can be obtained as opposed to rural areas. The influence of cultural practices, notions and norms tend also to be less pronounced in urban areas than in rural areas, especially if such practices would discourage condom use (Lurie et al, 2008:489; Bunnell et al, 2008:621).

Regarding the association between condom use and marital status, higher rates of condom use were observed among married (84.1%; *f*=106; n=126) and co-habiting respondents (88.1%; *f*=96; n=109). The association between condom use and marital status (being married and co-habiting) was significant at X^2=132.458 (*p*=0.000; df=5). The higher rates observed among these groups may be attributed to the higher disclosure rates observed among those with steady partners (refer to section 5.3.5.1). According to the Positive Women's Network (2010), disclosure of HIV status may enhance intimacy and communication about sex in a relationship, and in so doing, increasing opportunities to discuss and implement HIV risk reduction with sexual partners, such as condom use.

Considering condom use and the number of sexual partners one had, high condom use rates were observed among those with multiple sexual partners (specifically 2 to 5 sexual partners), 96.2% (*f*=25; n=26). The two variables were significantly associated at X^2=194.634 (*p*=0.000; df=3). The number of sexual partners one has is in itself a potential risk for HIV transmission especially if risky sexual activity is involved. The higher condom use rates observed with multiple sexual partners could be attributed in part to the fear that some PLWHA may have of acquiring STI's and new potentially drug resistant HIV strains (Cates, 2006:1).

According to Bunnell et al (2008:621), practicing safer sexual behaviour is positively associated with knowledge of the sexual partner's HIV status. Moreover, risk behaviours change most dramatically among couples aware of each other's HIV sero-status thus enabling them to make informed reproductive health choices that may resultantly lower the occurrence of unintended pregnancies (and HIV transmission) among HIV positive women (and their sexual partners) (Parsons et al, 2005:S87-88). In the current study, 66.8% (*f*=153; n=229) of the respondents who knew the HIV status of their sexual partners were observed to use condoms. Moreover, the association between condom use and knowledge of sexual partners' HIV status was found to be significant at X^2=158.848 (*p*=0.000; df=2).

According to Andia et al (2009:344) and Sarna et al (2005:1), some PLWHA on ART especially those with low viral load, may feel protected from transmitting HIV sexually and hence, may promote un-protected sexual practices that would increase the risk of transmitting HIV to their sero-discordant partners and re-infecting themselves with new, drug resistant strains of the virus. However, the current study findings contradict these observations. It was observed in this study that ARVs use (ART), specifically longer duration of ARV use, was associated with high rates of condom use, 76.7% (*f*=66; n=86) at X^2 =11.07 (*p*=0.010; df=5). This may be partly because ART counselling and education tends to emphasise safer sex practices as part of the care package.

However, in this current study, condom use was observed not to be influenced by age (*p*=0.101; df=9), region (*p*=0.714; df=3), literacy level (*p*=0.814; df=5), religion (*p*=0.614; df=2) or employment status (*p*=0.552; df=2) of the respondents (refer to sections 4.3.5.2.1.1 to 4.3.5.2.1.8; 4.3.5.2.2 to 4.3.5.2.4 & 4.3.5.4.2 of this chapter).

5.3.4.2 Specific conclusions and recommendations

Based on the research findings, the following conclusions and recommendations are drawn with regard to factors that influence condom use:

- **Conclusion:** The fact that more PLWHA in steady relationships seem more likely to use condoms compared to other marital status is a positive finding that could be enhanced since the risk of HIV infection is also attributed to length of exposure. Increased condom use with multiple partners in this study is also a positive finding that prevention strategies and programs in the country can capitalise on.
- **Recommendations:** The perceived general negativity towards the use of condoms, the attitude of those using condoms should be looked into to gather an understanding of a positive attitude to be implemented in existing and future condom promotion programmes. Known regular condom users could also be involved in educational programmes as motivational speakers.

5.3.5 Objective 5: To determine the relationship between HIV status disclosure and sexual practices among HIV positive persons on antiretroviral therapy.

To determine the relationship between HIV disclosure and sexual practices, the four variables used for sexual practices were condom use, type of sexual relationship, number of sexual partners and number of children desired.

5.3.5.1 Findings and discussions

The study findings indicate that with the exception of the number of children hoped for, HIV status disclosure has a significant association with condom use, type of sexual relationship and number of sexual partners in this current study.

Considering disclosure and condom use, 70% (*f*=244; n=320) of those who disclosed were observed to use condoms compared to 25% (*f*=5; n=20) of those who had not disclosed. A significant association was observed between disclosure and condom use, with disclosure being more likely among consistent condom users, X^2=17.335 (*p*=0.000; df=1) (refer to chapter 4; section 4.3.5.3.1 of this dissertation). According to Strebel et al (2009:10;13), and Simbayi et al (2006:31), most PLWHA's are reluctance to disclose their HIV-positive status to their sexual partners due to the fear of being stigmatized may result in them (PLWHA) continuing to engage in risky sexual behaviours (including non-condom use). Indeed the current study findings indicates lower condom use rates among those who did not disclose compared to the higher condom use rates among those who disclosed.

Regarding disclosure and type of sexual relationship, 46.6% (*f*=149; n=320) of those who disclosed were in steady sexual relationships compared to 31.6% (*f*=101; n=320) who were in casual sexual relationships. Those who had disclosed were more likely to be in steady sexual relationships, 46.6% (*f*=149; n=320) than those who had not disclosed 20% (*f*=4; n=20). However, there seemed to be no difference between those who disclosed, 31.6% (*f*=101; n=320) and those who had not disclosed, 30% (*f*=6; n=20) and being in a casual sexual relationship. A significant association was also observed between disclosure and type of sexual relationship at X^2=9.294 (*p*=0.01; df=2) (refer to chapter 4; section 4.3.5.3.2). The higher condom use rates among steady sexual partners may be attributed in part to the fact that those in steady relationships may have a greater sense of responsibility for the health of their sexual partners because of the level of intimacy involved, which may not be the case with casual relationships (WHO, 2004:2).

According to Simbayi et al (2006:31; Sullivan, 2005:33), PLWHA who do not disclose their HIV status to sexual partners are more likely to have an increased number of sexual partners. The current study observed that 67.5% (*f*=216; n=320) of those who had disclosed, had only 1 sexual partner compared to 45% (*f*=9; n=20) of those who had not disclosed. Those who disclosed were observed to be more likely to have only 1 sexual partner than those who had not disclosed, and a significant association was observed to exist between disclosure and number of sexual partners one had at $X^2=10.088$ ($p=0.018$; df=3) (refer to chapter 4; section 4.3.5.3.3).

Lastly, considering disclosure and the number of children hoped for, almost equivocal proportions were observed with 45% ($f=146$; n=320) of those who had disclosed desiring to have 3 to 5 children compared to 40% ($f=8$; n=20) of those who had not disclosed hoping for 3 to 5 children. Indeed, non-existence of a significant association between disclosure and number of children desire (hoped for) was confirmed at $X^2=9.49$ ($p=0.473$; df=4) (refer to chapter 4; section 4.3.5.3.4 of this dissertation).

5.3.5.2 Specific conclusion and recommendation

Based on the current finding regarding the relationship between HIV status disclosure and sexual practices, the following conclusions and recommendations are drawn:

- **Conclusion**: Those respondents who had disclosed their HIV status were significantly more likely to be faithful (only one sexual partner) and to condomize. Increased condom use among those who have disclosed is a positive finding around which the ‘positive prevention’ strategies can be developed to enhance safer sex practices among PLWHA on ART
- **Recommendation:** The Mbabane National Referral VCT/ART Centre, Swaziland, should investigate the possibility of deploying individuals who have disclosed their HIV status and who regularly use condoms to act as known role models (motivational speakers) in the promotion of condom use.

5.3.6 Other study findings

5.3.6.1 Duration of ARV use and condom use

It was observed in this study that longer duration of ARV use was associated with increased condom use. For respondents who had been on ART for 1 to 3 years, 70.4% (*f*=88; n=125) used condoms compared to 29.6% (*f*=37; n=125) who had not used ARV for the same period of time. A similar trend was observed for those who had used ARV for 3 to 5 years, as 76.7% (*f*=66; n=86) used condoms compared to 23.3% (*f*=20; n=86) who did not use condoms. A Chi-square test confirmed the existence of a significant association between duration of ARV use and condom use at $X^2 = 14.985$ (p=0.010; df=5) (refer to chapter 4; section 4.3.5.4.2 of this dissertation).

5.3.6.2 Duration of ARV use and number of sexual partners

From the study findings, longer duration of ARV use was observed to be related to the number of sexual partners one had. Considering those who had used ARVs for 1 to 3 years, 6.4% (*f*=8; n=125) had 2 to 5 sexual partners compared to 66.4% (*f*=83; n=125) who had only 1 sexual partner. A similar trend is observed among those who had used ARVs for 3 to 5 years, 3.5% (*f*=3; n=86) had 2 to 5 sexual partners compared to 80.2% (*f*=69; n=86) who had only 1 sexual partner. Longer duration of ARV use seemed to be associated with having fewer sexual partners. A Chi-square test confirmed the existence of an association between longer duration of ARV use and number of sexual partner (only 1), at $X^2 = 29.379$ (p=0.014; df=15) (refer to chapter 4; section 4.3.5.4.4 of this dissertation).

5.3.6.3 Specific conclusions and recommendations

- **Conclusion**: The current findings contradict the perceived increase in risky sexual practices among PLWHA as observed in some studies reviewed in the literature with longer duration of ARV use (refer to chapter 2; section 2.4.12.1 of this dissertation). In the current study, longer use of ARVs was observed to be associated significantly with safer sex practices, this is a positive finding.

- **Recommendation**: Programs targeting HIV transmission prevention among the HIV persons could identify individuals who have been using ARVs for a long period of time and practice safer sex, making use of them as known role models (motivational speakers) in the promotion of HIV prevention with the positives.

5.4 RECOMMENDATIONS FOR FUTURE RESEARCH

The current study findings exposed some areas requiring further investigation with regard to the key variables of the study in the context of Swaziland. Such investigations or studies may include:

- Comparative studies between PLWHA on ART and those not on ART could be conducted to ascertain the differences in disclosure and sexual practices, and this may help in streamlining HIV prevention and health promotion strategies addressing the specific groups of PLWHA.

- The desire of PLWHA to have (more) children necessitates an exploration of factors influencing the use of contraceptives among PLWHA, including condoms. This is especially necessary as the more effective ways of combating the spread of HIV/AIDS is also an acknowledged contraceptive, and having (more) children is a cultural desire.

- Nationwide follow-up studies of the HIV disclosure practices and sexual practices of PLWHA on ART could be conducted to identify any geographical and cultural differences in the practices thus, developing targeted intervention for the different geographical and cultural areas.

5.5 CONTRIBUTIONS OF THE STUDY

From the literature reviewed, it appears that the topic of “HIV disclosure and sexual practices of PLWHA on antiretroviral therapy” has been researched mainly in the western countries, and although similar studies have been conducted elsewhere in Africa (Kabikira 2010), such research has not, apart from the current study, been conducted in Swaziland. The findings of this research might help to provide justification for the efforts currently geared towards pursuit of HIV prevention among the HIV positive persons on antiretroviral therapy. This might in turn reduce the risk of re-infection and having to deal with the burden of drug resistant HIV strains during this early phase of the antiretroviral programme in Swaziland. The findings of the current study, at least, contribute to the knowledge pool and a better understanding of HIV disclosure and sexual practices among HIV positive persons on antiretroviral therapy and factors affecting disclosure and sexual practices in Swaziland.

5.6 LIMITATIONS OF THE STUDY

The main limitation of the study is that the finding cannot and should not be generalized to the general public or to populations other than that composing the clientele of the Mbabane National Referral VCT/ART Center, in Swaziland

Although measures were taken to ensure quality of data, this might have been affected by the researcher having been a medical doctor at the site where the study was conducted during the time that the data were being collected. This could have influence the responses the respondents gave and hence the results obtained.

Even with the assistance of field workers (data collectors), respondents might have found the type of scales used in the data collection instrument (Likert scales) difficult to understand – to conceptualise the measurement some of the concepts measured. This issue might have been compounded by the fact that 3 of the 4 data collectors were male and the majority of the respondents was female. A degree of gender-power differential, an issue inherent in African culture, might thus have affected the responses the females gave.

Only a quantitative survey using questionnaires as the data collection tool was used in this study. The *meaning* concepts/variables studied have for respondents (PLWHA on ART) may be important to understand the results of the current study. A mixed methods approach with individual in-depth interviews or focus group discussions could have improved the outcome of the current research.

5.7 CLOSING REMARKS

Studies conducted among people living with HIV/AIDS in Uganda, South Africa, Botswana and other southern African countries have revealed that HIV positive people consistently face difficulties in not only disclosing their status but also practicing safer sex, impacting profoundly on the effectiveness of HIV/AIDS prevention, treatment and sex, thus delaying prevention and other efforts aimed at decreasing the incidence of HIV/AIDS (Kalichman, 2007:40; ICRW, 2006:4-5). The current study has shown that although there exists some gaps with regard to disclosure and sexual practices of PLWHA on ART at the Mbabane National Referral VCT/ART Center, in Swaziland, on the whole, PLWHA on antiretroviral therapy show relatively fewer difficulties in disclosing the HIV status and they significantly practice safer sex. Also, the intertwined relationship between HIV disclosure, sexual practices and use of ARVs as observed in this study, points to the fact that strategies to promote any one of these should equally promote the other two.

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LIST OF ANNEXURES

ANNEXURE A: Sample Questionnaire

Questionnaire number………

QUESTIONNAIRE

THE HIV DISCLOSURE AND SEXUAL PRACTICES OF PLWHA'S ON ANTIRETROVIRAL THERAPY AT MBABANE NATIONAL GOVERNMENT REFERRAL VCT/ART CENTRE, SWAZILAND.

1. Objectives

- Describe the HIV disclosure and sexual practices of PLWHA's on antiretroviral therapy.
- Identify the underlying factors influencing the HIV disclosure and sexual practices of PLWHA's on antiretroviral therapy, and identify relation between disclosure and sexual practices.

2. Ethical consideration

- All information you provide will be dealt with confidentially and only for the purposes of this study. Your co-operation and time is highly appreciated and please do sign the attached consent form, as acknowledgement of your willingness to participate.

3. Note to the respondents

- Please answer to the best of your knowledge and experience according to instructions, against the responses you agree with.

Section One: Socio-Demographics

1. Gender

Male	1	
Female	2	

2. How old are you in years?

15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	≥60
1	2	3	4	5	6	7	8	9	10

3. In which region do you currently live?

Hhohho	Manzini	Shiselweni	Lubombo
1	2	3	4

4. Where is your residence located?

Rural	1	
Urban	2	

5. What is your marital status?

Single	Married	Co-habiting	Widow/ widower	Divorced/ separated	Other Indicate please:
1	2	3	4	5	6

6. What is your highest level of educational attainment?

None	1	
Primary	2	
Secondary	3	
Tertiary	4	
Post tertiary	5	
Vocational training	6	
No formal education	7	

7. To which religion or religious belief do you belong?

Christianity	Islam	Buddhism	Hinduism	Traditional	Atheism	None
1	2	3	4	5	6	7

8. What is your current employment status?

Unemployed	Self employed	Employed by institution or company
1	2	3

9. What is your nationality?

Swazi	1	
Non Swazi	2	

Section Two: HIV Disclosure practices

1. Have you disclosed your HIV positive status to anyone?

Yes	**1**	
No	**2**	

(If your response to question 1 is "Yes", proceed to answer questions 2 - 10 and if your response is "No", proceed to answer question 11 – 13)

2. When did you first take an HIV Test?

Last 6 months	1	
6months -1Year	2	
1-2 years ago	3	
3-4 years ago	4	
More than 5 years ago	5	

3. To whom have you revealed your HIV positive status?*(Tick all that apply)*

Spouse/ partner	Siblings	Children	Parents	Employer	Friends	Other Indicate please
1	2	3	4	5	6	7

4. How long did it take between being diagnosed HIV positive to the time you first disclosed your HIV positive status anyone?

Less than a month	1	
Between 1 - 3 months	2	
Between 6 -12 months	3	
Between 1 – 3 years	4	
Between 3 – 5 years	5	
More than 5 years now	6	

5. Indicate the extent to which the following statements pertain to you currently

	Strongly agree	Agree	Disagree	Strongly disagree
My sexual partner(s) know about my HIV positive status				
My sexual partner is "entitled" to know				

my HIV positive status				
I know the HIV status of my sexual partner(s)				
Knowing my sexual partner's HIV status isn't important to me				

6**. Indicate the extent to which you agree or disagree with the following statements regarding motivations to disclose your HIV positive status**

	Strongly agree	Agree	Disagree	Strongly disagree
I needed physical and emotional support				
I believe it wouldn't be the right thing to do if I didn't disclose				
I was desperate and had no one or no where to turn to.				
I knew I could die at any time due to my failing health/illness.				
I was coerced/ threatened to do so				
I needed my employment benefits				
It would be known one way or the other				
I needed to access HIV treatment so I had to disclose				
I was concerned about my sexual partner's health				
I needed to get rid of the stress of keeping my status a secret				

7. What were the responses of the people you revealed your status to?

They were generally:	Strongly agree	Agree	Disagree	Strongly disagree
Angry and upset with me				
Discriminatory towards me				
Disappointed with me				
Judgmental towards me				
Indifferent towards me				
Caring and supportive towards me				
Sympathetic towards me				
Other: 1)				
2)				
3)				

8. Indicate to what extent you agree or disagree with the following statements regarding how you feel about the decision to disclose your HIV positive status?

	Strongly agree	Agree	Disagree	Strongly disagree
I regret that decision				
I feel at peace (less stressed)				
Makes no difference				
I will never disclose to any one again				
I will disclose to any new sex partner(s)				
I feel exposed				
I feel free and unburdened				
I feel detached from my friends and family				
I feel guilty and sad				
I feel I cannot be part of any public activities anymore				

9. What would you say have been the benefits of disclosing your HIV status?

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10. What would you say have been the disadvantages of disclosing your HIV status?

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(If your response to question 1 (Section two) was "No", proceed to answer the following questions, 11 - 14)

11. When did you first take an HIV Test?

Last 6 months	1	
6months -1Year	2	
1-2 years ago	3	
3-4 years ago	4	
More than 5 years ago	5	

12. Which of the following statements describes your decision <u>not</u> to disclose your HIV positive status?

	Strongly agree	Agree	Disagree	Strongly disagree
I fear being stigmatized, rejected and discriminated.				
I need to avoid a separation or divorce				
I need to protect my employment /source of income				
I fear physically and emotionally being abused by my spouse / partners				
I feel the time to disclose my status is not yet right.				
I fear being accused for infidelity				
I need to come to terms with the idea of being HIV+ first				
I fear upsetting/disrupting my family members				
Other (Specify) 1)				
2)				
3)				

13. To whom do you hope/ wish to reveal your HIV status in the future? *(Please tick all that apply)*

Spouse/partner	Children	Siblings	Parents	Friends	Employer	None	Other
1	2	3	4	5	6	7	8

14. In your opinion, what would be the benefit(s) of disclosing your HIV status?

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Section Three: Sexual practices

(This section is to be completed by all respondents: those who have disclosed and those who have not disclosed their HIV positive status)

1. How old were you when you had your first menstrual cycle? (This question applies only to females)

< 10 years	10 years	11 years	12 Years	13 Years	14 Years	15 Years	>15 years	N/A (Males)
1	2	3	4	5	6	7	8	

2. How old were you when you first had sexual intercourse?

< 10 years	10 years	11 years	12 Years	13 Years	14 Years	15 Years	>15 years	Never had sex
1	2	3	4	5	6	7	8	9

3. How many living biological children do you have?

None	1 - 2	3 - 5	>5
1	2	3	4

4. How many children do you wish or hope to have in total?

None	1 - 2	3 - 5	>5	Not decided
1	2	3	4	5

5. How would you describe the relationship you have with your partner (s)?

Causal	1	
Steady	2	
No partner	3	

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

None	1	
Only 1	2	
2 -5	3	
More than 5	4	

7. How old is/are your partner(s)?

15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	≥60	None
1	2	3	4	5	6	7	8	9	10	11

8. How often do you have sexual intercourse?

Never	1	
Daily	2	
Several times a week	3	
Once a week	4	
Once a month	5	
Once in a long time	6	

9. Indicate the extent to which you agree or disagree with the following statements regarding who decides on when to have sex?

	Strongly agree	Agree	Disagree	Strongly disagree
I decide on when to have sex				
My partner decides on when to have sex				
Place where we are sets the tone for sex or not				
Available time we have determines to have sex or not				
Friends help to decide when to have sex				

10. What contraception / family planning method do you use? *(Please tick all that apply)*

Condoms	Pills	Injectables	Implants	Natural	Surgical	Use none
1	2	3	4	5	6	7

11. If your response to previous question is option 6 (surgical), what type of surgical procedure did you undergo?

Tubal ligation	**1**	
Vasectomy	**2**	
Hysterectomy	**3**	

If your response to question 10 above is or includes option 1 (condoms), proceed to answer questions 12 - 14 and if not, go to question 15.

12. How frequently do you use condoms?

All the time	1	
Most of the time	2	
Sometimes	3	
Rarely	4	

13. Indicate the extent to which you agree or disagree with the following statements regarding reasons for use of condoms

	Strongly agree	Agree	Disagree	Strongly disagree
I use condoms only if partner insists on using them				
I use condoms to avoid infecting my partner with HIV				
I use condoms to avoid getting pregnant				
If there is risk of contracting a sexually transmitted infection				
I use condoms because they improve my sexual sensation				
I use them because my health care provider says I should always do so				

14. Indicate the extent to which you agree or disagree with the following statements regarding the decision to use a condom?

	Strongly agree	Agree	Disagree	Strongly disagree
I decide on when to use a condom				
My partner decides when to use a condom				
My friends help me decide when to use a condom				

The place where we are determines condom use				
Available time for sex determines condom use				
I use a condom for casual sexual relationship(s)				
I use condoms in steady sexual relationships				

15. Indicate the extent to which you agree or disagree with the following statements regarding the reasons for not using condoms.

	Strongly agree	Agree	Disagree	Strongly disagree
Condoms are for promiscuous people				
Sexual sensation reduces with use of condom				
Use of condoms makes no difference				
Condoms carry in them infections like HIV				
I do not know how to use condoms				
I do not know the importance of using condoms				
Condoms are not 100% protective, so why use them?				
My partner refuses to use condoms				

Section Four: Antiretroviral therapy

(This section is to be completed by all respondents)

1. Are you currently taking/using ARVs?

Yes	**1**	
No	**2**	

(If your response to question 1 above is, "Yes", proceed to answer the following questions: 2 – 6)

2. How long did it take you, between being diagnosed HIV positive and accessing ART enrolment or other HIV support services like counseling?

Less than a month	1	
Between 1 - 3 months	2	
Between 6 -12 months	3	
Between 1 – 3 years	4	
Between 3 – 5 years	5	
More than 5 years now	6	

3. For how long have you been taking ARVs?

Less than a month	1	
Between 1 - 3 months	2	
Between 6 -12 months	3	
Between 1 – 3 years	4	
Between 3 – 5 years	5	
More than 5 years now	6	

4. Besides the health care workers, which other person knows that you are taking ARVs? *(Please tick all that apply).*

Spouse/partner	Siblings	Children	Parents	Employer	Friend (s)	None	Other
1	2	3	4	5	6	7	8

5. How have ARVs affected your sexual life?

No difference on my sexual life	1	
Slightly increased my sexual drive	2	
Significantly increased my sexual drive	3	
Decreased my sexual drive	4	

5. Indicate the extent to which you agree or disagree with the following statements regarding having children for people using ARVs?

	Strongly agree	Agree	Disagree	Strongly disagree
People using ARV's shouldn't have children				
People using ARV's can have children if they choose to				
People using ARV's shouldn't have children with HIV negative persons				
People using ARV's should have children only with other HIV positive persons				
People using ARV's should have children only when recommended by health care providers				

6. Now that you are on ARVs, what are you doing different regarding your sexual life?

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Thank you very much for your participation!

ANNEXURE B: Request to conduct the study (a)

Mbabane Government Hospital, VCT/ART Centre,
P. O. Box 8, Mbabane, Swaziland
Tel: 404 2111 Ext 2275

5th January 2009

To: The Ethics and Research Committee,
Ministry of Health and Social Welfare,
P. O. Box 5, Mbabane, Swaziland.

Dear Sir/Madam,

Ref: Request for permission to conduct study at the Mbabane VCT/ART centre

I am a registered medical doctor working at Mbabane Government Hospital VCT/ART centre for the last 3 years as site coordinator. I am also pursuing a Master of Public health by distance learning with the University of South Africa.

I write to request for permission from the Ministry of Health and Social Welfare to undertake a study on: ***The disclosure and sexual practices of people living with HIV/AIDS on antiretroviral therapy at Mbabane National Referral VCT/ART Center, Swaziland.*** I believe this study will help generate some baseline information relevant to the development of policy, strategies and eventually interventions for the programmes aimed at positive prevention. The specific focus of this study on those using antiretroviral therapy will also help provide information on the potential for spread and hence develop strategies to counter spread of drug resistant HIV strains in the community.

I will observe the professional and research ethical standards as prescribed by the Ministry of Health and Social Welfare before, during and after conducting this study. A copy of the findings will be forwarded to the ministry at the conclusion of the study.

I hope my request meets your solemn consideration and please find attached the study proposal.

Yours in service against HIV/AIDS,

Dr. Patrick P. Okoth

ANNEXURE C: Request to conduct the study (b)

Mbabane Government Hospital, VCT/ART Centre,

P. O. Box 8, Mbabane, Swaziland

Tel: 404 2111 Ext 2275

5th January 2009

To: The Senior Medical Officer,

Mbabane Government Hospital.

Dear Sir/Madam,

Ref: Request for permission to conduct study at the Mbabane VCT/ART centre

I request for permission to conduct a study at Mbabane Government Hospital VCT/ART Centre as part of Master of Public health requirement with the University of South Africa.

The study to be conducted is on: ***The disclosure and sexual practices of people living with HIV/AIDS on antiretroviral therapy at Mbabane National Referral VCT/ART Center.*** I believe this study will help provide some baseline information relevant to the development of policy, strategies and eventually interventions for the programmes aimed at positive prevention. The specific focus of this study on those using antiretroviral therapy will also help provide information on the potential for spread and hence develop strategies to counter spread of drug resistant HIV strains in the community.

I will observe the professional and research ethical standards as prescribed by the Ministry of Health and Social Welfare National Research and Ethics Committee, and that of the hospital through the entire research process. A copy of the findings will be forwarded to the hospital management at the conclusion of the study.

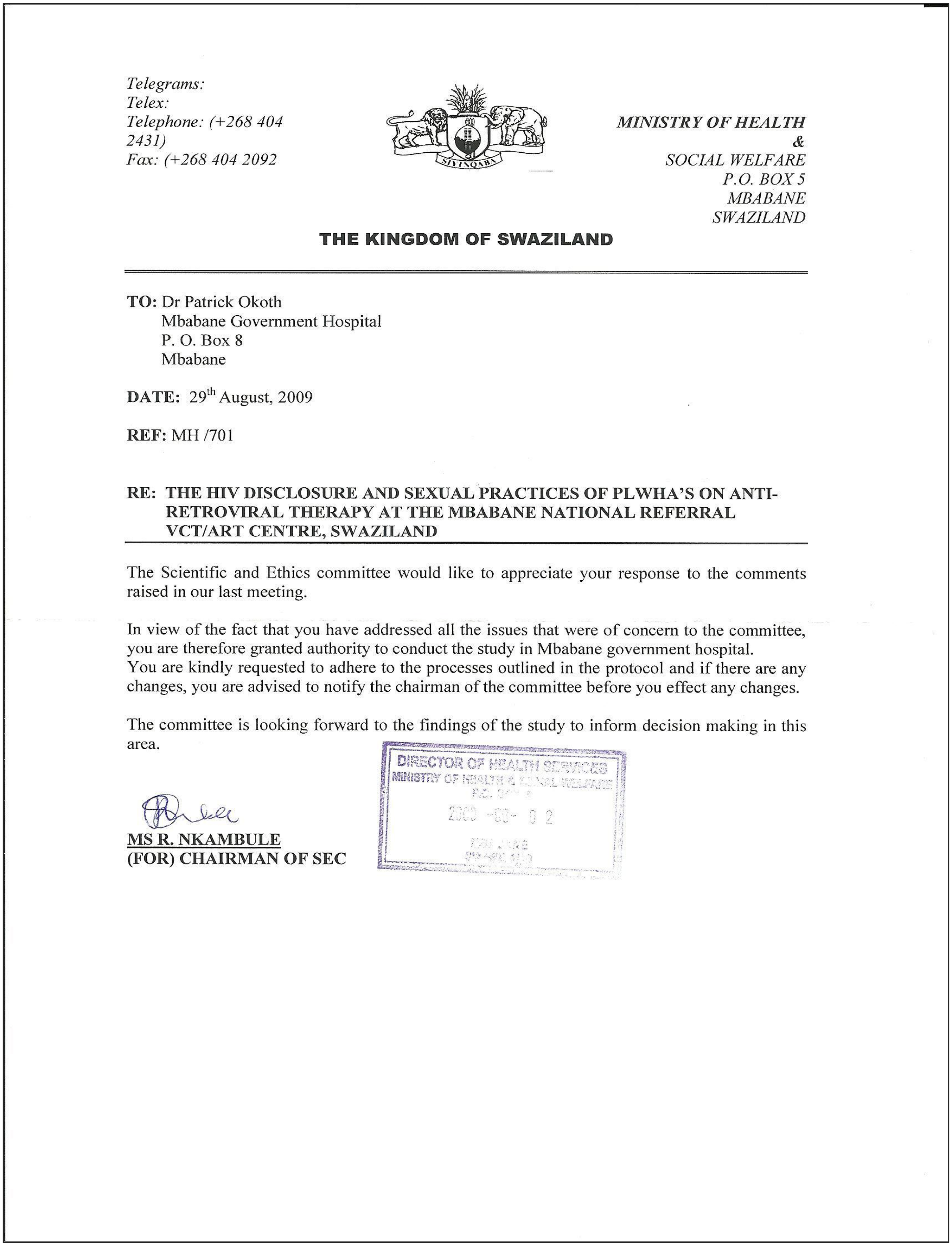
I hope my request meets your favourable consideration.

Yours in service against HIV/AIDS,

Copy: ART National Coordinator

Dr. Patrick P. Okoth

ANNEXURE D: Permission to conduct the research (MOH)



Telegrams:
Telex:
Telephone: (+268 404 2431)
Fax: (+268 404 2092

SIYINQABA

MINISTRY OF HEALTH
&
SOCIAL WELFARE
P.O. BOX 5
MBABANE
SWAZILAND

THE KINGDOM OF SWAZILAND

TO: Dr Patrick Okoth
Mbabane Government Hospital
P. O. Box 8
Mbabane

DATE: 29th August, 2009

REF: MH /701

RE: THE HIV DISCLOSURE AND SEXUAL PRACTICES OF PLWHA'S ON ANTI-RETROVIRAL THERAPY AT THE MBABANE NATIONAL REFERRAL VCT/ART CENTRE, SWAZILAND

The Scientific and Ethics committee would like to appreciate your response to the comments raised in our last meeting.

In view of the fact that you have addressed all the issues that were of concern to the committee, you are therefore granted authority to conduct the study in Mbabane government hospital.
You are kindly requested to adhere to the processes outlined in the protocol and if there are any changes, you are advised to notify the chairman of the committee before you effect any changes.

The committee is looking forward to the findings of the study to inform decision making in this area.

DIRECTOR OF HEALTH SERVICES
MINISTRY OF HEALTH & SOCIAL WELFARE
P.O. BOX 5
2009 -09- 0 2
MBABANE
SWAZILAND

<u>MS R. NKAMBULE</u>
(FOR) CHAIRMAN OF SEC

ANNEXURE E: Sample of Informed consent Form

INFORMED CONSENT FORM

Study title: **The disclosure and sexual practices of PLWHA's on Antiretroviral therapy at Mbabane National Referral VCT/ART Centre, Swaziland.**

Investigator: Dr. Patrick P. Okoth

Dr. Patrick P. Okoth is a medical doctor working for the Ministry of Health of Swaziland. He is studying the HIV disclosure and sexual practices among people using antiretroviral drugs in Swaziland. This study, he believes, will provide information relevant for developing strategies to empower people living with HIV/AIDS on antiretroviral therapy with the necessary knowledge and skills to protect themselves and their sexual partners from being re- or infected with HIV.

I the undersigned ....(print name) herewith declare that:

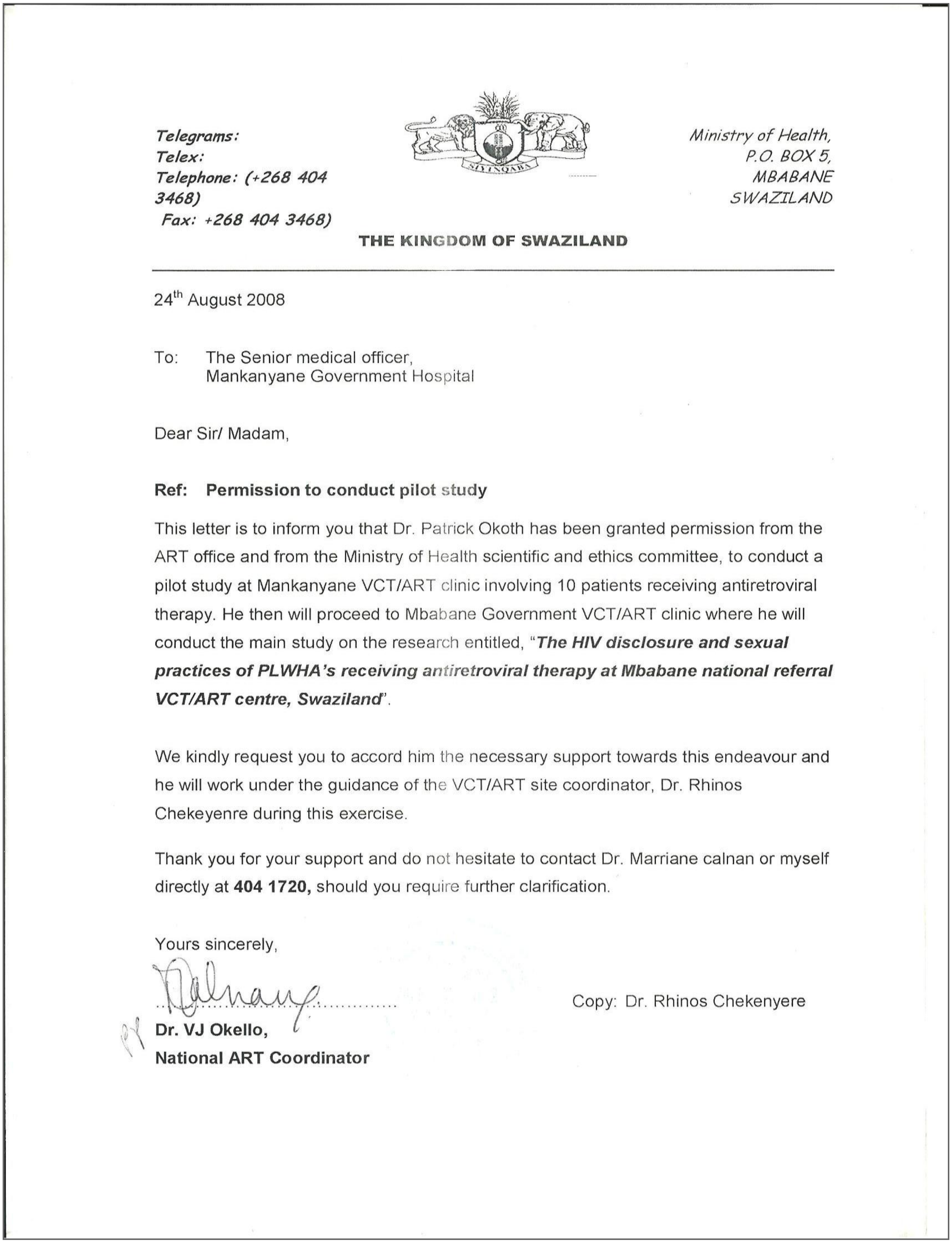
- I have been explained to and understand the purpose of this study.
- My participation in this study is voluntary and I have the right to discontinue my involvement at any time or refuse to answer any question(s) that I feel violate my own privacy, as I deem so.
- I understand that in the course of exploring my disclosure and sexual practices, I may feel uncomfortable, anxious and fatigued.
- I will not receive any monetary rewards or payment for any information I provide or for my involvement in this study.
- I may contact Dr. Patrick P. Okoth should I have any queries or concerns with or in the course of the study. I may reach him at +268-6383603 (Cell) or +268-4042111 Ext 2275 (office).
- I have been assured that my identity will not be revealed in the course of conducting the study or publication of its findings and that all information I have provided will be kept safe, secure and confidential.
- I authorize the researcher to use at his discretion, information I have provided in the questionnaire in writing his report on the research.
- I hereby register my willingness to participate in this study and will answer the questions asked to the best of my knowledge.

Respondent's signature :……………………………………… Date: ………………..

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

Witness's signature:…………………………………………… Date:……………….

ANNEXURE F: Permission to pre-test instrument and conduct study (SNAP)



Telegrams:
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Telephone: (+268 404 3468)
Fax: +268 404 3468)

Ministry of Health,
P.O. BOX 5,
MBABANE
SWAZILAND

THE KINGDOM OF SWAZILAND

24th August 2008

To: The Senior medical officer,
Mankanyane Government Hospital

Dear Sir/ Madam,

Ref: Permission to conduct pilot study

This letter is to inform you that Dr. Patrick Okoth has been granted permission from the ART office and from the Ministry of Health scientific and ethics committee, to conduct a pilot study at Mankanyane VCT/ART clinic involving 10 patients receiving antiretroviral therapy. He then will proceed to Mbabane Government VCT/ART clinic where he will conduct the main study on the research entitled, "***The HIV disclosure and sexual practices of PLWHA's receiving antiretroviral therapy at Mbabane national referral VCT/ART centre, Swaziland***".

We kindly request you to accord him the necessary support towards this endeavour and he will work under the guidance of the VCT/ART site coordinator, Dr. Rhinos Chekeyenre during this exercise.

Thank you for your support and do not hesitate to contact Dr. Marriane calnan or myself directly at **404 1720,** should you require further clarification.

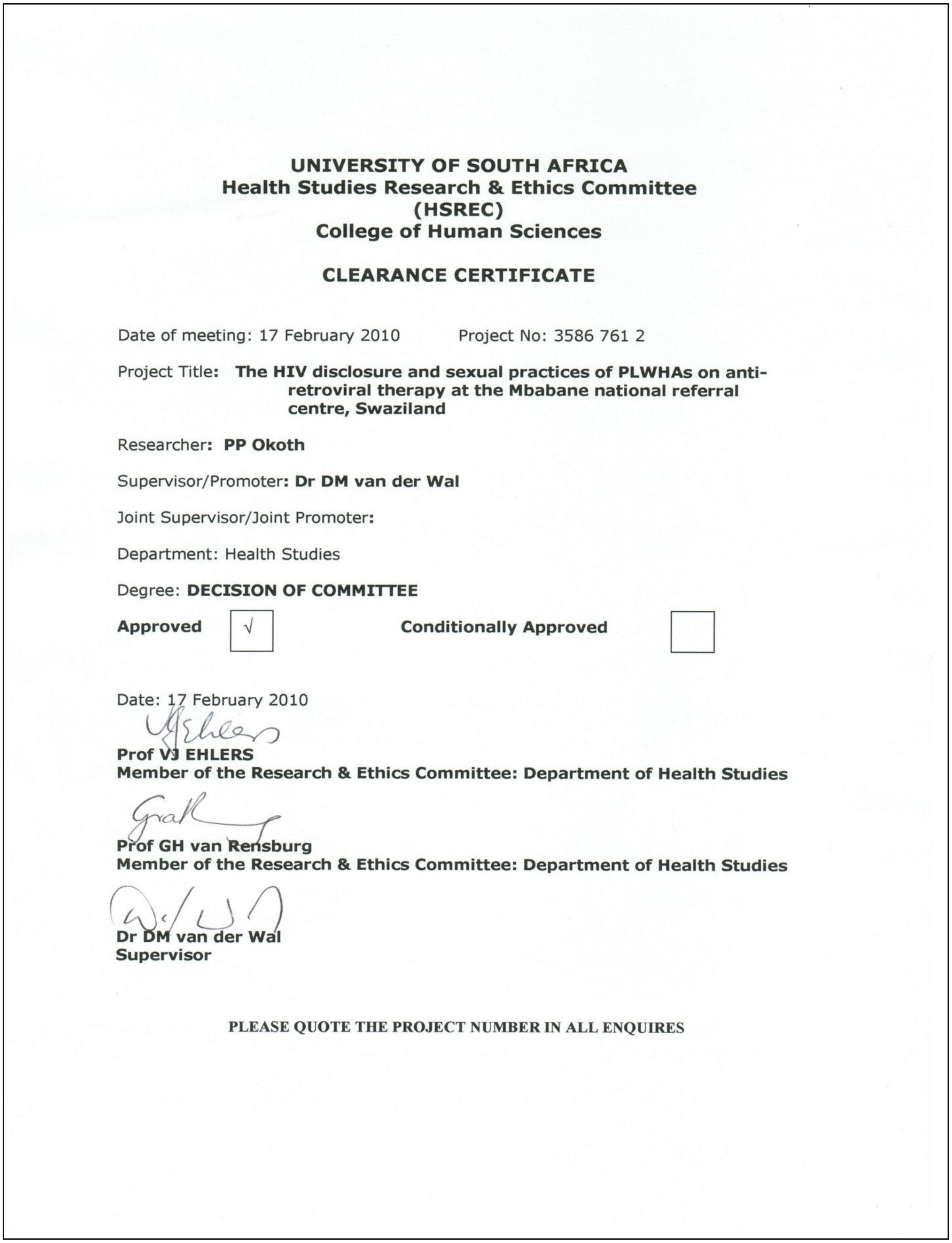
Yours sincerely,

....

Dr. VJ Okello,
National ART Coordinator

Copy: Dr. Rhinos Chekenyere

ANNEXURE G: Unisa Ethical Clearance Certificate



UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee
(HSREC)
College of Human Sciences

CLEARANCE CERTIFICATE

Date of meeting: 17 February 2010 Project No: 3586 761 2

Project Title: **The HIV disclosure and sexual practices of PLWHAs on anti-retroviral therapy at the Mbabane national referral centre, Swaziland**

Researcher: **PP Okoth**

Supervisor/Promoter: **Dr DM van der Wal**

Joint Supervisor/Joint Promoter:

Department: Health Studies

Degree: **DECISION OF COMMITTEE**

Approved ☑ **Conditionally Approved** ☐

Date: 17 February 2010

Prof VJ EHLERS
Member of the Research & Ethics Committee: Department of Health Studies

Prof GH van Rensburg
Member of the Research & Ethics Committee: Department of Health Studies

Dr DM van der Wal
Supervisor

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

ANNEXURE H: Permission from Clinic supervisor

Telegrams:
Telex:
Telephone: (+268 404 2111)

Mbabane Government Hospital
P. O. Box 8, Mbabane,
Swaziland

THE KINGDOM OF SWAZILAND
THE VCT/ART CENTRE

4th October 2009

To: Dr. Patrick P. Okoth

Dear Doctor,

Ref: Permission to conduct study at the Clinic

I acknowledge receipt of your request to conduct a study at the Mbabane Government VCT/ART clinic. I have also seen the accompanying authorisation letters from the Ethics committee and from SNAP allowing you to proceed with the study.

By note of this letter, i register my permission to go ahead with the study at the clinic and should you require any further assistance, please do not hesitate to contact me.

We wish you the best in your research!.

Yours Faithfully

Sr. T.P Dlamini,

Sister In-charge,

Mbabane VCT/ART Clinic

ANNEXURE I: The Statistician's Resume

Simbiso Courage Makumucha

P O Box 5906 Mbabane. Email : scmakumucha@gmail.com Cell: 7631 8906

Mr Simbiso Courage Makumucha is a results –oriented Statistician with notable success in directing a broad range of national and community based initiatives while participating in planning, analysis and implementation of pragmatic solutions in direct support of project objectives in building and strengthening communities.

- A track record of increasing responsibility in program development and full life-cycle project management.
- Demonstrated capacity to implement innovative programs that drive awareness, decrease exposure and strengthen organizations and communities.
- Hands-on experience leading all stages of system development efforts including requirements definition, design, architecture, testing and support.
- Outstanding leadership abilities, able to coordinate and direct all phases of project based efforts while managing, motivating and leading project teams.
- Exceptional mentor and Coach

CORE COMPETENCIES

- ✓ Quantitative analysis
- ✓ Disaster recovery and business continuity planning
- ✓ Quantitative data analysis
- ✓ Risk management
- ✓ Compliance control
- ✓ Research and development
- ✓ Help desk support

TECHNICAL COMPETENCIES

Data Analysis: SPSS, EpiInfo, Ms Excel, Minitab

Platforms: Windows Vista/ Xp/ 2000/98.

Windows2003 Server, Linux

Networking: TCP/IP, LAN and WAN, VNC

Languages: C, C++, Java, html, SQL

Tools: Microsoft Office Suite (Ms Project, Word, Excel, PowerPoint, Access etc)

OpenOffice suite (Linux)

CURRENT PORTFOLIO

- Lecturer and IT consultant in the Training, Research and consultancy Division, Institute for Development Management (IDM), Swaziland.

QUALIFICATTIONS

- BSc. Statistics and computer Science
- Certified Information system Auditor

ANNEXURE J: Study information to the respondents

STUDY INFORMATION TO THE RESPODENTS

Part A: About the research

Research Topic: The HIV disclosure and sexual practices of PLWHA on ART at Mbabane National Referral VCT/ART Center

Name of researcher: Dr. Patrick P. Okoth (one of the doctors at Mbabane VCT/ART clinic

Study Purpose: Academic research for the doctor's masters training programme

Target population: All HIV positive persons, 18 years and above who are registered at the clinic since it was opened.

Anticipated benefits of the study

- It's hoped that the information obtained from this study will be used by the Ministry of Health and other collaborating institutions to guide the development and operationalisation processes for effective prevention strategies for HIV positive people on ART.
- The findings of this research might help to provide information on how potential transmission of drug resistant HIV strains might be reduced hence saving on health for individuals and government.
- It's hoped that the research contributes to the global understanding of HIV disclosure and sexual practices among PLWHA using ARVs.

Adverse effects/events resulting from the study

- This study is a non-invasive study and the only anticipated adverse effects may be physical fatigue and emotional discomfort owing to the sensitivity of the topic of study in the Swaziland cultural context and length of interview.

PART B: Respondents’ rights

- The respondent has the right to voluntary participation in the study, indicated by a signed consent form.
- The respondent has the right to refuse to answer any question they find offensive or uncomfortable, and/or withdraw from the study at anytime if they so wish.
- The respondents have the right to privacy, confidentiality and anonymity of their identity and information they provide in this study.

PART C: Researchers obligations

The researcher pledges to observe the following as his/her obligation in this study:

- To ensure that no one is coerced or threatened into participating in the study.
- To maintain privacy, confidentiality and anonymity of respondent identity and information provided by keeping it in a designated and safe place.
- To obtain permission from concerned authorities to conduct this study.
- To ensure that no person who refuses to participate in the study is in any way denied access to the necessary services they seek or treated in an unfair way.
- To ensure that no respondent is given preferential treatment or incentive as a way to participate in the study.
- To be available to answer any queries the respondents may have during the study and after the study, pertaining to this research (Cell: 76383603).
- To share the findings of the research with the patients at the clinic upon completion of the study.

THANK YOU AND LOOKING FORWARD TO YOUR PARTICIPATION !

ANNEXURE K: Respondents comments about the study

RESPONDENTS COMMENTS ABOUT THE STUDY

Part one: Comments during and after administration of questionnaire

The following comments/concerns were raised by the respondents during this phase of the research:

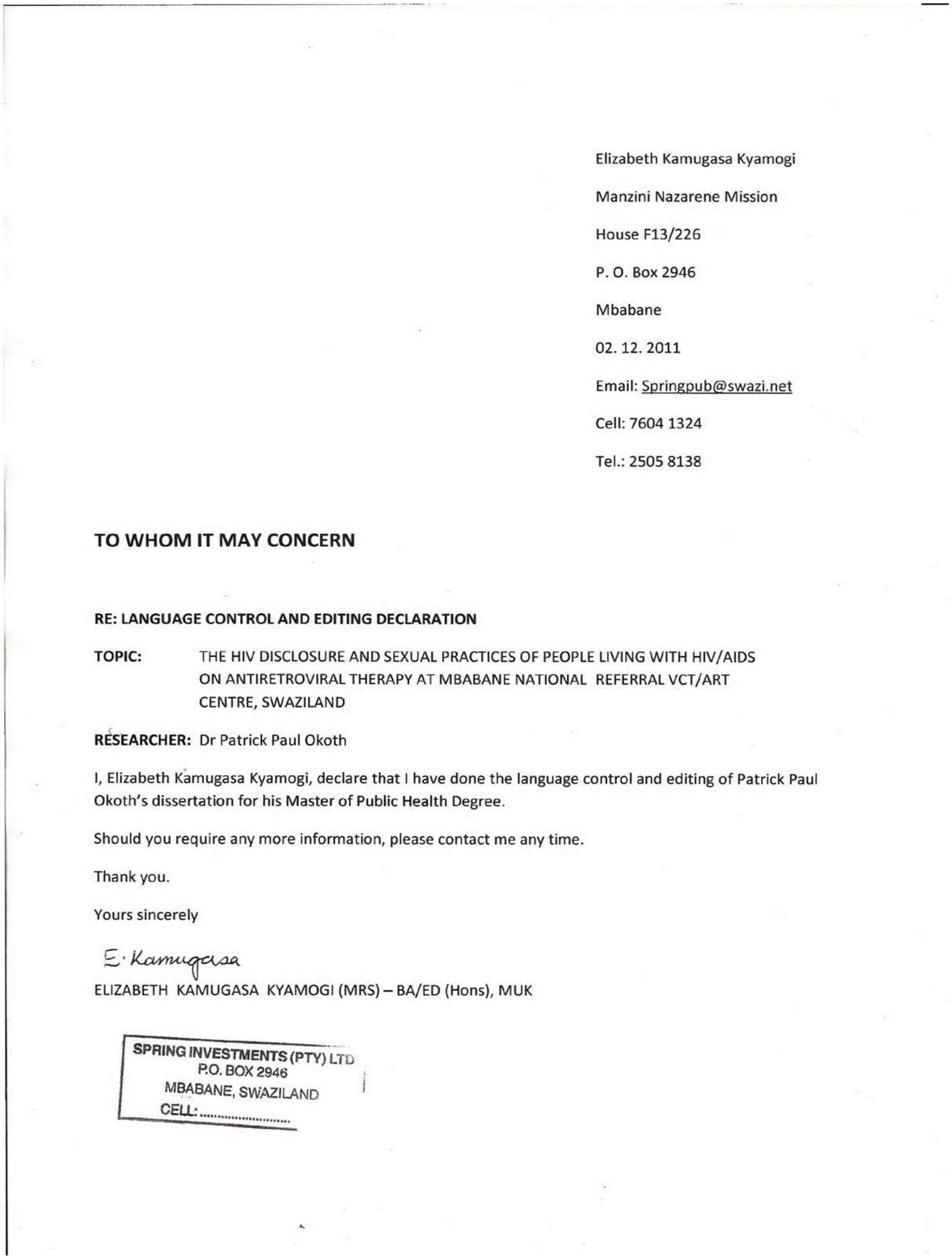
- Some respondents felt that some of the items in the questionnaire were ‘too personal’ and required a lot of information about their sexual life.
- Some respondents said that some items/questions were a little difficult to understand even with clarification from the research assistants.
- Some respondents felt worried that some of this information may be used against them in the future. (Reassurance was given by the researcher that this would not happen and if it did, a complaint should be lodged with the concerned clinic, hospital, ART program and ministry offices.)
- Some respondents wanted to know who will implement anticipated benefits of the study. (The researcher told them that the findings might help the ministry of Health and collaborating organisations in development of strategies and programmes for PLWHA.)
- Most respondents said that the researcher/research assistants were very courteous and helped them feel relaxed and comfortable during the data collection.

Part two: Comments during sharing of research findings

The following comments/ questions and concerns were raised during the dissemination of study findings:

- The PLWHA at the clinic wanted to know with whom the findings were going to be shared. (The researcher answered; With the clinic staff, hospital doctors and management, Swaziland National AIDS Program, the Ethics committee, the Ministry of Health, the University of South Africa and an article from the report would be published in a renown journal the University will identify.) The response seemed satisfactory and no further questions were raised on this issue.
- The respondents wanted to know how long it may take for them to see implementations of some of the issues identified. (The researcher responded by telling them that only the Ministry of Health might have the answer to when this would happen.)
- The doctors wanted to know if they could have access to the data collected. (The researcher said that authority was first in the hands of the Ministry of Health, and secondly with the researcher himself, since he had the data kept in ‘safe’ format to avoid unauthorised access.)
- The Ministry officials asked whether a copy of the final report would be made available to them. (The researcher pledged to avail a copy of the final report to the clinic, hospital, Ministry of Health-statistics office and the Ethics Committee.)

ANNEXURE L: Language control and editing declaration



Elizabeth Kamugasa Kyamogi

Manzini Nazarene Mission

House F13/226

P. O. Box 2946

Mbabane

02. 12. 2011

Email: Springpub@swazi.net

Cell: 7604 1324

Tel.: 2505 8138

TO WHOM IT MAY CONCERN

RE: LANGUAGE CONTROL AND EDITING DECLARATION

TOPIC: THE HIV DISCLOSURE AND SEXUAL PRACTICES OF PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT MBABANE NATIONAL REFERRAL VCT/ART CENTRE, SWAZILAND

RESEARCHER: Dr Patrick Paul Okoth

I, Elizabeth Kamugasa Kyamogi, declare that I have done the language control and editing of Patrick Paul Okoth's dissertation for his Master of Public Health Degree.

Should you require any more information, please contact me any time.

Thank you.

Yours sincerely

E. Kamugasa

ELIZABETH KAMUGASA KYAMOGI (MRS) – BA/ED (Hons), MUK

SPRING INVESTMENTS (PTY) LTD
P.O. BOX 2946
MBABANE, SWAZILAND
CELL: ....

Annexure M: Declaration of Senior SNAP Clinicians

Telegrams:
Telex:
Telephone: (+268 404 3468)
Fax: +268 404 3468)

THE KINGDOM OF SWAZILAND

Ministry of Health,
P.O. BOX 5,
MBABANE
SWAZILAND

10th February 2009

To: Whom it may concern

Ref: Declaration of participation

We, Dr. VJ Okello (National ART Coordinator-SNAP) and Dr. M. Calnan (Case Manager/Physician-SNAP) hereby declare that we participated in the study in the study, "The HIV disclosure and sexual practices of PLWHA on ART at Mbabane National Referral VCT/ART Center, Swaziland", where Dr. Patrick P. Okoth is principal investigator. He is undertaking this study as part of the requirements for his masters program in Public Health with the University of South Africa.

We particularly reviewed and helped in the development of the data collection instrument, to ensure its appropriateness and quality.

Should you require further information in this regard, you may contact anyone of us at the addresses indicated above.

Yours sincerely,

Dr. VJ Okello,
National ART Coordinator

Dr. M Calnan,
Case Manager