EXPLORATION OF FACTORS THAT INFLUENCE THE UTILISATION OF HIV/AIDS PREVENTION METHODS AMONG UNIVERSITY OF KWAZULU-NATAL STUDENTS RESIDING IN A SELECTED CAMPUS

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By

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Declaration

This dissertation represents the original work of the author and it has never been submitted before for any degree or examination in any other university. All references used have been acknowledged by means of referencing.

16/04/2010

Eléazar Ndabarora Date

This dissertation has been read and approved for submission.

22/04/2010

Supervisor: Dr. Gugu Mchunu Date

Dedication

This work is dedicated to my parents Espérance Nyirahabiyambere and Michel Mirimo; my sisters Thérésie, Béathe, Valérie and Jannette.

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Abstract

In this study, the researcher is interested in the utilization of HIV/AIDS prevention methods among university students. The purpose of this study was to explore factors that influence the utilization of existing HIV/AIDS prevention methods amongst students at the University of KwaZulu-Natal residing in a selected campus. Four residences within the selected campus were randomly selected and participants were conveniently selected from each of sampled residences. There was a total of 335 respondents and 261 (78%) completed the manual questionnaires while 74 (22%) completed online questionnaires. The study used quantitative approach and was descriptive-exploratory in nature. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 15.

The majority of respondents were young people with the mean age of 22.9 years. The sample comprised 278 (78%) undergraduate and 57 (17%) post graduate students. Study findings showed that the factors which influenced the utilization of HIV/AIDS prevention methods varied and that they were mainly influenced by the awareness of the existing university-based HIV/AIDS prevention strategies. It also emerged that the mostly utilized HIV prevention methods were VCT services and free condoms. Perceived susceptibility and the perceived threat of HIV/AIDS score was also found to be correlated with HIV Risk Index score. Furthermore, there was Correlation between perceived susceptibility and perceived threat of HIV/AIDS and self-efficacy on condoms and their utilization. However, there seemed to be no relationship between utilization of HIV/AIDS prevention methods and these variables.

In conclusion, the findings of this study suggest that most of Health Beliefs Model (HBM) variables were not predictors of the utilization of HIV/AIDS prevention methods among students. Intervention aiming to improve the utilization of HIV/AIDS prevention methods among students at the UKZN should focus on removing identified barriers, promoting HIV/AIDS prevention services and providing correct knowledge on HIV for behavioral change.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND TO THE PROBLEM

HIV/AIDS has significantly affected communities worldwide over the last two decades (Kironde & Lukwago, 2002). This epidemic, since it was reported the first time in 1981 (Kaplan & Sadock, 1998) has been continuously increasing throughout the world, particularly in the developing, low and middle-income countries in Africa and Asia (UNAIDS/WHO Report, 2006).

The UNAIDS/AIDS (2008) reported that by the end of the year 2007 approximately 33.2 million people worldwide were living with HIV, and 2.5 million people were newly infected with HIV, among which young people aged 14-25 years old account 45%. The report emphasised that that preventing new HIV infections remains the powerful weapon to fight and reverse the epidemic, especially among young people.

According to the report by the Anti-Virus Emergency Response Team (AVERT) (cited in Djamba & Davis, 2007), Southern Africa is the most affected region in the world. An estimated number of 12 million children who have lost one or both parents due to AIDS live in Sub-Saharan Africa (Coovadia & Hadingham, 2005), and in some regions the epidemic continues to increase with no evidence of declining (UNAIDS, 2006).

The Global Report by the UNAIDS/WHO (2008) states that the survey that included 64 countries across the world on accurate and comprehensive knowledge of HIV among

young people aged 15–24 years, suggests similar results to the above-mentioned, whereby 40% of males and 38% of females ages 15-24 could answer properly to general questions on HIV and how to avoid its transmission. The findings in the report suggest a very low level of knowledge of HIV/AIDS compared to the global goal of ensuring comprehensive knowledge in 95% of young people worldwide in 2010, as stipulated by the United Nations General Assembly Special Session-UNGASS (2001).

In South Africa, the national HIV/AIDS prevalence rate was estimated to be 18.1% at the end of 2007 (UNAIDS, 2008). Research studies found that young South Africans are the most affected, as shown in the survey conducted by Pettifor, et al. (2003). The findings of this survey showed that young South Africans aged 15-24 years had a high HIV prevalence of 10.2%, among which 77% were women. Furthermore, the study findings revealed that HIV infection was disproportionately distributed such that young women were 15.5% versus young men (4.8%) aged 15-19 years old.

Literature suggests that the prevalence of HIV/AIDS among South African youth aged 15-24 years increased from 10.2% in 2002 to 15.64% in 2004 (Hartell, 2005). However, the recent study conducted by the Human Sciences Research Council (HSRC), shows that South Africa's HIV epidemic has stabilized, and the epidemic has levelled off at a prevalence of 10.9% for people aged two years and older, with 5.2 million people estimated to be living with HIV in 2008, from 5.7 million of people who were living with HIV/AIDS in 2007 (BuaNews, 2009). It was reported that the prevalence of HIV/AIDS in South Africa had stabilized, and there is evidence of its decline, especially among

children aged 2-14 years, from 5.6% in 2002 to 2.5%in 2008, and a decline in new infections has also been noted among teenagers aged 15 – 19 years (Plus News, 2007).

Studies have shown that 68% of South African young women and 56% of young men below the age of 25 years were engaging in high risk sexual behaviors (Simbayi, Leickness, Kalichman, Seth, Jooste, Sean, et al., 2005). The same study revealed that knowledge about HIV/AIDS was almost high but with misconceptions on HIV modes of transmission. HIV/AIDS risk factors were associated with lower education level, lower level of HIV related knowledge, negative attitudes to condom use and drug use. The study suggested an urgent need for behavioral interventions through Information Education and Communication (IEC) among young people. In other seven countries, namely: Botswana, Lesotho, Mozambique, Namibia, Swaziland, Zambia, and Zimbabwe, the national adult HIV prevalence rates were above 15% (UNADS/WHO, 2008).

Similar findings have been echoed in a review on HIV prevention conducted in Australia by Dolan and Niven (2005), which showed that young people have a heightened risk of HIV infection because of many factors, such as risk sexual behavior, substance abuse, and lack of access to HIV information and prevention services. The authors argue that it is crucial that health providers know barriers that youth face in accessing health services, including HIV/AIDS Prevention Programs.

According to the National Department of Health of South Africa (2008), the 2007 National HIV and Syphilis Survey showed a small overall decline from 30.2% in 2005 to

29.1% in 2006. Furthermore, the report suggests larger declines in the under 24 age group, from 16.1% in 2004 to 13.7% in 2006. The third National population-based survey conducted from June 2008 to March 2009 by Shisana, et al. (2009) showed that HIV/AIDS prevalence among youth under 24 years had declined to 8.7% in 2008, with the decrease especially marked among teenagers. Also, this survey showed that the National HIV prevalence rate has stabilized at around 11%; HIV prevalence has decreased among children aged 2-14, from 5.6% in 2002 to 2.5% in 2008. Condom use has increased in all age groups, and the national HIV prevalence rate has declined at around 11%. However, the same report showed that HIV prevalence remains disproportionately high among South African Provinces, especially KwaZulu-Natal (15.8%) and Mpumalanga (15.3%) as compared to other provinces. Also young women remain the most affected and the HIV prevalence is still increasing (ibid).

Most university students are young people; the category of people which is at high risk of contracting new HIV infection because of high risk sexual behaviors (UNAIDS/AIDS 2008; Simbanyi et al., 2005). A study conducted in Botswana by Sabone et al. (2007) revealed that students considered the freedom on-campus environment as the last opportunity, but with lack of entertainment, as consequence, students "killed time" by indulging in drinking alcohol and unprotected sex. Furthermore students saw HIV/AIDS as other and third person problem.

The UNAIDS report (2007) suggests that current prevention methods including campaigns to encourage abstinence, faithfulness, condom use (Abstinence, Be faithful,

use Condom-ABC method), clean needles and male circumcision must be sustained. The same report argues that the use and effectiveness of preventive methods are limited by societal and economic barriers.

The United Nations General Assembly Special Session (2001) had declared that preventing new HIV infections must be the mainstay of the response to HIV/AIDS epidemic. The UNGASS put emphasis on a comprehensive care with regard to HIV/AIDS including care, support and treatment which are the core foundations of an effective response to the epidemic. The declaration set the goal of reducing HIV prevalence by 25% among young people aged 15-24 years in the most affected countries by 2005, and increase their knowledge until 95% by the year 2010 throughout the world (UNGASS, 2001).

According to the report by the United Nations Children Fund-UNICEF (2008), this goal has not yet been achieved considering the higher prevalence of HIV infection among young people, who accounted 45% of all new HIV infections at the of 2007 worldwide, as it was reported by the UNAIDS (2008). The report by UNAIDS/WHO (2008) states that the reason of high prevalence of new HIV infections is that many young people still lack accurate, and complete information on how to avoid exposure to the virus. Moreover, the report by the UNICEF (2008) states that the knowledge of HIV/AIDS was reported to be 40% of teenagers in low and middle-income countries where those young people are able to answer correctly to five simple questions about the causes of HIV and

its prevention. The report expressed the need to reach young people with basic information concerning health issues and HIV/AIDS prevention in particular.

This is congruent with the findings of the study conducted by Stringer et al. (2008) in their study conducted in Zambia between July 2002 and December 2006 among young women who were attending antenatal consultations (ANC). Findings showed that HIV seroprevalence declined steadily from 24.5% in 2002 to 21.4% in 2006. According to the Center for Diseases Control-CDC (2007), South Africa has also reported the first-ever decline of HIV infections in the year 2006. The report indicates that the decline was mainly among young people below 20 years, followed by those between 20 and 24 years. The decline in the under 20 years, is between 15.9% in 2005 and 13.7% in 2006. This suggests a possible reduction in new infections in the populations, but still at slight scale. The report added that to prevent new HIV infections, a particular emphasis must be put on young people, among whom most new HIV infections occur.

According to the report by the United States Agency for International Development-USAID (2009), youth represent 38% of new infections in South Africa, 29% in Kenya, and 23% in Uganda. The same report states that in India, HIV infection rates are often higher in younger members of at-risk populations compared with older age groups; despite the report by Kaiser Family Foundation (2006), which suggested that HIV prevalence among young people ages 15 to 24 years in Southern India had declined by about 35% in the year 2005.

Reviewed literature has confirmed risk sexual behaviors, high prevalence of HIV infection, and under utilization of HIV/AIDS prevention methods among university students in South Africa (Stremlau & Nkosi, 2001). According to the report of the meeting of The South African Universities Vice-Chancellors' Association (SAUVCA), the projection of HIV infection among university students is a cause of concern, considering that students are at high risk to contract new HIV infections (Chetty, 2000). The report estimated HIV infection levels in the year 2000 among South African university students to be at 22% for university undergraduates, 11% for postgraduate university students and 24.5% for technikon undergraduates. SAUVCA had estimated that these rates would increase to 33%, 21% and 36%, respectively, by the year 2005. This suggests a high HIV prevalence rate among university students in South Africa.

Similar findings have been reported in the study conducted by Stremlau and Nkosi (2001) which found that among students at the former University of Durban-Westville, HIV infection rate was high, and it was estimated to be higher (26%) in females and lower (12%) among males aged 20- 24 years. However, the majority of students regarded HIV/AIDS as a peripheral issue, and they perceived themselves to be less concerned about becoming HIV positive, despite the high HIV infection rate estimates.

In another study conducted by Uys, Martin, Ichharam and Alexander (2001) at the former University of Durban, Westville Campus, also showed that students are generally knowledgeable about the causes and modes of transmission of HIV/AID, and they were

mostly sexually active (79.6%). But their awareness and good knowledge does not correspond with their sexual behavior.

In response to HIV/AIDS epidemic, this SAUVCA meeting suggested that HIV/AIDS policies and HIV/AIDS Programs should be put in place in all tertiary learning institutions of South Africa (Chetty, 2000). Such programs should comprise HIV/AIDS wellness, establishing a based-campus health clinic with HIV testing Program, and investigate the possibility of providing affordable anti-retroviral treatment (ART) and Peer education Programs.

According to van Wyk and Pieterse (2006) most of higher learning institutions in South Africa have implemented interventions to prevent HIV/AIDS. These interventions are namely existing HIV/AIDS Prevention Policy that comprises Rights and responsibilities of affected and/or infected staff and students, Education and awareness especially ABC method (Abstinence, Be faithful, and use Condom), Voluntary Counseling and Testing of HIV (VCT), Care, Treatment (Anti-Retroviral Therapy- ART) and Support services for staff and students, and integration of HIV/AIDS issues in teaching, research and service activities. HIV/AIDS Prevention also comprises Sustained and dedicated leadership and management, Peer education Programs and HIV/AIDS Programs and Projects directed at students and the staff.

The study on HIV/AIDS risk factors among students conducted at the University of Free State by Badenhorst, van Staden and Coetsee (2008) showed that there is an improvement

with regard to utilizing HIV/AIDS prevention methods among university students. In this study, students were highly knowledgeable that they are at high risk to contract HIV infection. Students viewed condom use in positive way as a protective method from getting HIV (75%). However, there were still unchanged risky sexual practices in favor of HIV, such as multiple sexual partners, this was reported by 17% of respondents.

According to the UKZN AIDS Program, HIV/AIDS Programs are operating within the University of KwaZulu-Natal since 2005 (retrieved May 3rd, 2005, from http://aidsprogramme.ukzn.ac.za). The programs comprise especially Voluntary Counseling and Testing (VCT) of HIV, Peer education Program, Wellness Program, Sensitization of ABC Method, and referral system for Antiretroviral Therapy-ART (University of KwaZulu-Natal HIV/AIDS Policy, 2005). The Programs aim to galvanize the entire University community into a coherent integrated UKZN response to the challenge of HIV and AIDS within the University and by extension to the larger society. It is however not clear if, and to what extend the students in this university are utilizing these services.

1.2 PROBLEM STATEMENT

Studies have shown that a large number of new HIV infections are found among young people all over the world, and that most of them take little concern about becoming HIV positive because of lack of knowledge that leads to risky sexual behaviors (Sabone et al.,2005; UNAIDS Report, 2008; Chetty, 2000; Stremlau & Nkosi, 2001); and these authors concur that the prevalence of HIV infection has been identified to be high among

South African university students, and students have been identified to be engaging in high risk sexual practices in favor of new HIV infections.

Recent studies in South Africa by Shisana et al. (2009) have shown some changes in HIV/AIDS prevalence and that condom usage has increased. However, the prevalence still remains high among young women who are the most affected, and disproportionately distributed among the South African Provinces.

Some institutions of higher learning have implemented interventions that aim to prevent new HIV infections (Chetty, 2000). These interventions have shown their effectiveness to prevent and reduce HIV/AIDS among students (Badenhorst et al., 2008), and among the whole population in South Africa (Shisana et al., 2009). However, studies have shown that university students are aware and have high knowledge of HIV/AIDS, but still engage in risk sexual behaviors in favor of new HIV infections (Uys, et al., 2001; Hartell, 2005; Kaiser, 2005). These findings suggest under utilization of existing HIV prevention methods by university students.

There is therefore a need to determine the factors that influence the utilization of existing HIV/AIDS prevention methods, and barriers as perceived by students at UKZN, so that relevant measures can be put in place.

1.3 PURPOSE OF THE STUDY

The purpose of this study was to explore factors that influence the use of existing HIV/AIDS prevention methods among UKZN students residing in a selected campus.

1.4 OBJECTIVES OF THE STUDY

- To describe the perceived susceptibility and perceived threat of HIV/AIDS by UKZN students residing in a selected campus as perceived by students,
- To explore the knowledge of HIV/AIDS among UKZN students residing in a selected campus as perceived by students,
- To describe the risky sexual behavior for HIV infection among UKZN students residing in a selected campus as perceived by students,
- To explore the awareness of on-campus HIV/AIDS prevention methods among UKZN students residing in a selected campus as perceived by students,
- To determine the utilization of on-campus HIV/AIDS prevention methods by UKZN students residing in a selected campus as perceived by students,
- To describe factors associated with the utilization of existing on-campus HIV/AIDS prevention methods by UKZN students,
- To determine potential barriers to the utilization of existing on-campus HIV/AIDS prevention methods as perceived by the UKZN students residing in a selected campus,
- To explore measures which enhance the utilization of on-campus HIV/AIDS prevention methods as perceived by UKZN students residing in a selected campus.

1.5 RESEARCH QUESTIONS

- What are the perceived susceptibility and perceived threat of HIV/AIDS among UKZN students residing in a selected campus?

- What is the level of knowledge of HIV/AIDS among UKZN students residing in a selected campus?
- What risk sexual behaviors for HIV infection are observed among UKZN students residing in a selected campus?
- What is the level of awareness of on-campus HIV/AIDS prevention methods among UKZN students residing in a selected campus?
- At which extent are on-campus HIV/AIDS Prevention Methods utilized by UKZN students residing in a selected campus?
- What are the factors associated with the utilization of existing on-campus HIV/AIDS prevention methods by the UKZN students?
- What are potential barriers to the utilization of existing on-campus HIV/AIDS prevention methods as perceived by the UKZN students residing in a selected campus?
- What are the measures that can enhance the utilization of on-campus HIV/AIDS prevention methods as perceived by UKZN students residing in a selected campus?

1.6 SIGNIFICANCE OF THE STUDY

Preventing new HIV/AIDS infection is one way to revert the epidemic (Horizon Program, 2001; UNAIDS, 2001). The findings of this study can contribute to the quality of health promotion programs implemented on-campus among students. The following agents will benefit from the study outcome:

a) *Students as clients,* it will be the opportunity for students to explain their ideas by responding to questions of the researcher. In this way, they will contribute to the quality of care they are offered from health care providers on-campus located. Also, findings should assist students in terms of knowing the magnitude of the problem, and they should be more sensitized to utilize existing HIV/AIDS prevention methods.

b) *Nursing as a profession,* the findings of this study would generate knowledge to nurses and other community health care providers as research and evidence-based practice, so that new decisions can be made to improve the quality of care.

c) *Policy makers*, the findings should inform health/wellness policy makers as information that can be based on when making policies regarding HIV/AIDS prevention and other health-related issues among university students at UKZN.

d) *To the research,* findings of this study could contribute to the research, as new knowledge will be generated and also, findings could inspire other researchers on areas that necessitate and to be explored so as to give more and new insight with regard to HIV/AIDS among university students.

1.7 OPERATIONAL DEFINITIONS

HIV/AIDS: The terms HIV and AIDS remains as they are internationally known. As it is defined by Webb (1997) and Whiteside (1990), HIV/AIDS is any group of retroviruses especially HIV-1 that infect and destroy helper T-cells of the immune system causing the marked reduction in their numbers. HIV is the virus that causes AIDS. The Acquired Immunodeficiency Syndrome (AIDS) leads the body susceptible to a variety of diseases.

Knowledge of STIs and HIV/AIDS: In this study, the knowledge of STIs and HIV/AIDS refers to the knowledge and awareness of respondents, according to the questions that will be asked by the researcher.

HIV Prevention methods: In this study, HIV prevention methods refer to ABC Method (Abstinence, Be faithful, use Condom), HIV Voluntary Counseling and Testing (VCT), and other HIV/AIDS prevention university-based programs such as Peer Education Program and the Wellness Program.

Antiretroviral Therapy (ART)

In this study, Antiretroviral Therapy (ART) means the treatment of infection by retroviruses, made of three or four medications taken in combination according to the clinical and biological status of the patient at the latter phase of HIV infection.

University students: In this study, university students refer to all registered full time students, both undergraduate and postgraduate students, living on-campus and off-campus university residences at Howard College and the Medical School.

Sources of information: Sources of information in this study refers to any source of information regarding health, such as peers in health care provision, HIV/AIDS programs, and students' movements that promote health, media, and curriculum-based health education.

Barriers to HIV/AIDS prevention methods: A barrier is defined as any condition that makes it difficult to make progress or to achieve an objective (retrieved May 12. 2009, from http://www.thefreedictionary.com/barrier). In this study, barriers refer to all factors that can hinder access, and utilization of health information and/or health services with regard to HIV/AIDS prevention and health promotion.

Risk sexual behavior: In this study, risk sexual behaviors refer to any risky sexual practice that can lead to the transmission of HIV from the infected partner to uninfected partner. Specifically it refers to unsafe sex and multiple sexual partners, and drug use.

Health promotion: In this study, the term "Health Promotion" will have the same definition as defined by Pender (1987), as the active participation of healthy lifestyle and prevention or early detection of a disease toward attaining positive health outcomes.

1.8 CONCLUSION

This chapter covered the background to the problem, and the problem statement. The aim of the study is mentioned, objectives of the study were set and research questions are illustrated. The chapter also covers the significance of the study, and different terms in the context of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter introduces the findings available in the area of the study. It covers the following themes: 1) the current situation of HIV/AIDS, globally, in Africa, and in South Africa, 2) HIV/AIDS among young people and in tertiary institutions, 3) and the section explores various literature on strategies and the utilization of HIV/AIDS prevention methods among young people and in tertiary institutions. The conceptual framework which will guide this study is also described. Resources used are books and journals from the library, as well as the Internet Explorer to access most of the literature. Electronic journals were retrieved using different Data bases, mainly African HealthLine, AIDS Search, BioMed Central, CINAHL, Pre CINAHL, Health sources: Consumer Editor, Health Source: Nursing/Academic Editor, MedLine, and Pubmed. All references were acknowledged using the Harvard referencing guide, Version of the University of Sheffield.

2.2 THE CURRENT SITUATION OF HIV/AIDS AND TRENDS

2.2.1 Global Situation of HIV/AIDS

HIV and AIDS remain the global and the heavier problem of public health worldwide (UNAIDS/WHO, 2007). According to the UNAIDS Report (2008), since 1981 HIV and AIDS have caused an estimated 25 million deaths worldwide, at the same time it has caused significant demographic changes in the most affected countries.

The UNAIDS Report (2007) states that a number of 33.2 million people were living with HIV at the end of the year 2007. The report reveals that in the same year, 2.5 million people were newly infected with HIV and AIDS related deaths were estimated at 2.1 million. At the end of the year 2007, the United States of America accounted more than one million people who were living with HIV, and since the occurrence of HIV, more than half a million have died after developing AIDS (CDC, 2009). Herida et al. (2007) also state that in Eastern Europe and Central Asia, an estimated 150,000 people were newly infected with HIV in 2007, and over a quarter (27%) of newly diagnosed cases of HIV in 2006 was among young people aged 15-24 years. This region accounts for 1.6 million people who were living with HIV (Pratt, 2008). Africa accounts an estimated number of 22 million people who are living with HIV, with approximately 1.9 million newly affected and infected with HIV during the year 2007 (AVERT, 2009). These statistics suggest that globally HIV infection continues to increase. However, in Australia, only 27,331 people equal to 0.9 per 100,000 populations, have been diagnosed of HIV, with 6,767 AIDS deaths recorded from the start of the epidemic until the end of the year 2007 (AVERT, 2009).

The UNAIDS/WHO Report (2008) states that the global rates of people living with HIV have stabilized but at very high levels. However, the same report suggests that the annual number of AIDS deaths has declined from 2.2 millions in 2005 to 2.0 million in 2007, as a result of the substantial increase in access to HIV treatment in recent years. The review on the global prevalence of HIV infections and trends by Bongaarts, Buettner, Heilig and Pelletier (2008) also suggests that HIV prevalence worldwide has stabilized at an average

rate of 1% percent or lower, except Sub-Saharan Africa which has the higher average of 5%.

According to the UNAIDS/WHO Report (2008), the alarming problem of HIV/AIDS is that in every two people put on treatment, five others get newly infected. Furthermore, the UNAIDS Report (2007) has reported that every day, over 6700 persons become infected with HIV and over 5700 persons die of AIDS. The reason is that, not yet all people have adequate access to HIV prevention, proper care and treatment services, and the most disadvantaged is Africa, whereas it carries the heaviest burden on the epidemic. This is congruent with the review on access to information and treatment of HIV/AIDS in Africa by Niombo (2009) who claimed that a part of the response to HIV/AIDS pandemic is to have access to information and knowledge on HIV/AIDS, and access to the treatment, which are vital to prevent the epidemic. However, necessary information seems to be the property of the wealthier populations, especially from rich countries, as most of this information is retrieved through ICT channels. Information is also mostly written in a language that the population at high-risk of HIV/AIDS do not understand. In addition, the price of the treatment is still beyond poor people, and this constitutes a major barrier to prevent HIV/AIDS, especially in developing countries, the author suggested. This is congruent with the report by Steinbrook (2006) which states that only 18 out of the 53 countries in Africa had 25% or more antiretroviral (ARV) coverage in June 2006.

The United Nations General Assembly Report (2008) emphasized that women, children and young people are the most exposed and vulnerable groups to contracting HIV/AIDS. The same report shows that young people worldwide accounted 45% of all new HIV infections in 2007, and 370,000 children younger than 15 years became infected with HIV in the same year. The global number of children younger than 15 years living with HIV increased from 1.6 million in 2001 to 2.0 million in 2007. The report shows that about 90% of these children were living in sub-Saharan Africa. Similarly, the review on HIV/AIDS prevention among vulnerable groups by Aggleton, Chase and Rivers, (2004) highlighted the same issues. The authors argue that women and young people are left behind when planning any intervention towards HIV/AIDS prevention, whereas they might be put in the centre of interest. The authors suggest that, to have a successful prevention program, four principles must be followed namely, tackling risk and vulnerability, putting the young person first, greater gender equity, promoting meaningful participation, and commitment to rights.

2.2.2 The Situation of HIV/AIDS in Africa

At the end of the year 2007, Sub-Saharan Africa accounted 22 million people who were living with HIV/AIDS, which makes two thirds (67%) of 33 million people living with HIV/AIDS worldwide; and HIV/AIDS-related deaths were 75% of all deaths worldwide, while the sub-region accounts only 10% of all people worldwide (AVERT, 2009; UNAIDS Report, 2009).

The review on HIV/AIDS and trends by Asamoah-Odei, Calleja and Boerma (2002) suggest that HIV prevalence in 148 antenatal clinic sites in Southern Africa has increased

from 21.3% in 1997 to 23.8% in 2002. In more than half of the sites (58%) the increase was at least one-tenth, but at a fifth of the sites, the prevalence dropped by at least one-tenth. However, in East Africa, the median HIV prevalence decreased from 12.9% in 1997/98 to 8.5% in 2002, with prevalence rising in four (7%) sites, but falling at 25 (43%) sites. In West Africa, the median HIV prevalence was 3·5% in 1997, and 3·2% in 1998 and 2002. These findings suggested almost equal proportions in reductions and increases in HIV prevalence rates. The authors suggested that the projections of HIV infections were that the epidemic should be stabilized in rural African areas in coming years after 2002.

The review of reports of national population based household surveys that included HIV prevalence measurement until 2006 in sub-Saharan African countries by Garcia-Calleja, Gouws, and Ghys (2006) showed different results from the above-mentioned on the projections of HIV infection in Africa. Findings suggested that there were extreme variations of HIV prevalence in sub-Saharan Africa. HIV prevalence among adults varied from below 1% in Niger and Senegal to 23.5% in Lesotho. These findings reflect the pattern of high HIV prevalence in Southern Africa and relatively low prevalence in West Africa, also the projections of HIV/AIDS infections should be continuously increasing. The review by Arias (2008) also reported that in sub-Saharan Africa, the region hardest hit by HIV/AIDS, an estimated 1.7 million people were newly infected in 2007, and a total number of 22.5 million were living with HIV infection. The review suggested that the majority of people living with HIV/AIDS in this region are women and young people, among whom the epidemic tends to further increase.

Similarly, the UNAIDS Report (2008) suggests that HIV infection continues to increase at a higher speed in Sub-Saharan countries, particularly among women and young people. Women account for half of all people living with HIV infections worldwide, and nearly 60% of them live in Sub-Saharan Africa. However, despite the increasing rate of HIV in this region, the same report states that the global annual number of new HIV infection worldwide declined in several countries from 3.0 million in 2001 to 2.7 million in the year 2007. In seven Sub-Saharan countries namely Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe, the national HIV prevalence rates exceeded 15% until 2007 (UNAIDS Report, 2009). However, the same report states that the situation was different throughout the continent. The adult national HIV prevalence was below 2% in several countries of West, North and Central Africa. The prevalence of HIV was above 5% in other seven countries, mostly in Central and East Africa, namely Cameroon, the Central African, Republic, Gabon, Malawi, Mozambique, Uganda, and the United Republic of Tanzania.

An epidemiological investigation of patterns and trends of HIV infection and sexual behavior among young people aged 15-24 years was conducted by Gouws, Stanecki, Lyerla and Ghys (2008). This investigation included nine most affected countries by HIV/AIDS in Southern Africa, was conducted since 2000 to 2007. Findings showed that patterns of HIV infection among young people were similar across the countries included in this analysis. The prevalence of HIV infection increased after the age of 15 years, more rapidly among women than men, reaching a peak among women in their twenties and men in their thirties. The analysis revealed that the prevalence of HIV among antenatal

clinic attendees was constant in Mozambique and South Africa and declining in Lesotho, Namibia, Swaziland, Zambia, Botswana, Malawi and Zimbabwe. Changes towards safer sexual behavior were observed over time among young men and were associated with declines in HIV prevalence among young antenatal clinic attendees over time. This suggests that interventions aiming to prevent new HIV infections among young people must address the issue of behavior changes.

2.2.3 Factors Influencing the Spread of HIV/AIDS in Africa

The UNAIDS/WHO Report (2009) states that women and young people constitute the group at high risk of contracting HIV/AIDS. According to Bankole, Singh, Woog and Wulf (2001), behavioral, physiological and sociocultural factors make young people more vulnerable than adults to HIV infection. Young people pass through adolescence, which is a time when they usually explore and take risks in many aspects of their lives, including sexual relationships. Most of those who have sex may change partners frequently or engage in unprotected sex, which increases the risk of contracting HIV infection. The authors suggest that young women in Sub-Saharan Africa are at much greater risk of contracting HIV than young men. Because many adolescent women are married to men who are considerably older, and likely to have had several previous sexual partners and may have a sexually transmitted infection (STI), including HIV, which they may transmit to their young wives. In addition, young women are physiologically more vulnerable to infection because of changes in the reproductive tract during puberty, which makes them less resistant to infection.

The study conducted in Zimbabwe by Pettifor, Straten, Dunbar, Shiboski, and Padian (2004) confirmed the above-mentioned findings. The study focused at the relationship between early age of coital debut, and the risk for HIV infection. Participants were urban population ranged from 15 years or younger to 35 years. Results showed that the prevalence of HIV infection was very high (40.1%). The median age was 18 years, and 11.8% of participants reported that they had experienced coital debut at age 15 or younger. Women with early coital debut had a significantly higher risk profile, including multiple lifetimes. The study concluded that early coital debut is a significant and major predictor of prevalent HIV infection.

According to Nyindo (2005), the spread of HIV/AIDS in Sub-Saharan Africa has been influenced by different factors, namely poverty, famine, low status of women in society, corruption, naive risk taking perception, resistance to sexual behavior change, high prevalence of sexually transmitted infections (STIs), internal conflicts and refugee status, antiquated beliefs, lack of recreational facilities, ignorance of individual's HIV status, child and adult prostitution, uncertainty of safety of blood intended for transfusion, widow inheritance, circumcision, illiteracy and female genital mutilation and polygamy. The author further suggests that any control programs with the aim to mitigate the spread of HIV should take into account the apparent multiplicity of sub-Saharan African cultures and beliefs, towards a behavioral change some of which contribute largely to the spread of HIV.

The study conducted by Jewkes et al. (2006) on factors associated with HIV ser-status among young rural South African women found similar results. HIV infection was associated with having had three or more partners during the past years, multiple sexual partners in past three months, and having a partner who is much older than the woman. Above all, the HIV infection was associated with intimate partner violence, physically and/or sexually. These findings suggest that women are at high risk to contract HIV infections, because of gender-based violence and gender inequality, which remain a major issue to prevent the epidemic among younger and adult women.

Similar findings were reported in the study carried out by Stephenson (2009) in Burkina Faso, Ghana, and Zambia, looking at the influence of the culture and the community to determine sexual behavior. Findings suggested that there is a direct link of the community to influence the sexual behavior of individuals. Similarly, the USAID Report (2009) suggests that social, cultural, familial, and institutional environments in which young people live profoundly influence their behaviors. Close relationships with parents and other adults, regular school attendance, and supportive community norms are protective factors or conditions in the environment that are particularly associated with positive youth behaviors. Equally, youth who experience family instability or who have negative peer role models are more likely to practice high-risk behaviors, including drug and/or alcohol use and early and/or unsafe sex.

The study conducted in Botswana by Seloilwe (2005) among university students, has shown similar results. Students reported high risky sexual behaviors related to

HIV/AIDS. These were alcohol and drug abuse; unprotected sex; frequent change of sexual partners; sex for financial gain, for prestige, for good grades, to relieve stress, and because of peer pressure; and casual sex as part of socializing. These findings suggest that young people in rural and urban areas, including university students are at high risk for contracting HIV infection. Factors influencing youth to engage in risk for HIV infections were generally related to behavioral change, which consequently must be addressed when planning interventions for HIV/AIDS prevention among young people.

2.2.4 The Situation of HIV/AIDS in South Africa

The UNAIDS reported that at the end of 2007, a number of 5,700,000 (18.1%) South Africans were living with HIV/AIDS (UNAIDS, 2008). This suggests a higher rate of HIV infection in the country, and among some vulnerable groups, the epidemic increased each year. For example, since 1996 the HIV prevalence rate among pregnant women increased from 12.2% to 27.9% in 2003, and to 30.2% in 2005 (AVERT, 2009). The study conducted by Pettifor, Rees and Stephenson (2004) showed that the prevalence of HIV among adolescent South Africans was high, as it was estimated to be between 9.3% and 10.2% in the 15-24 years age group. These studies also revealed that there were more young women affected by HIV infection than young men. These findings are congruent with the report by the Department of Health of South Africa (2005) which showed that 25% of young pregnant women in the 15-24 years age group were infected with HIV at the end of 2004.

Similar findings were reported in the review by Hartell (2005), throughout South Africa. This review suggested that HIV/AIDS epidemic has been increasing and affecting large numbers of adolescents less than 15 years and from 15-24 years, who account for 40% of all South Africans. The prevalence of HIV among this age group was estimated to be 15.64%. With these findings, the author suggests that there is need to understand patterns of sexual behavior and existing knowledge and perceptions of the epidemic among adolescents to provide an important base for educational interventions so as to prevent new HIV infections among youth.

In addition the report by the Department of Health of South Africa (2007) states that until 1998 South Africa had one of the fastest expanding epidemics in the world. However, the report suggested that the epidemic appears to have stabilized, and may even be declining slightly. A slight decline of HIV infections among young women was observed form 30.1% in 2005 to 29.1% in the survey conducted by the Department of Health of South Africa in 2006. Among teenage girls, the rate decreased from 15.9% in the 2005 survey to 13.7% in 2006, and this suggest possible an ongoing decline of the epidemic among young South Africans.

However, The report by UNAIDS (2008) states that South Africa is one of the three countries in Southern Africa where the prevalence of HIV/AIDS has stabilized, but emphasized that, still the scale of the HIV/AIDS epidemic among young people continues to increase. Similarly, Palitza (2009) argues that, the current situation of HIV/AIDS infections in South Africa indicates an alarming projection of the epidemic within a few years, estimated that 60% to 70% of hospitals' expenditure in medical wards

will be dedicated to HIV/AIDS. However, the third South African National HIV Prevalence, Incidence, Behavior and Communication showed interesting results as that HIV prevalence at national level has decreased and stabilized at around 11%, especially among children aged 2-14 years, from 5.6% on 2005 to 2.5% in 2008 (Shisana et al., 2009). The same survey also showed that HIV prevalence decreased among youth aged 15-24 years, from 10.3% in 2005 to 8.6% in 2008. However, the HIV/AIDS is disproportionally distributed in South Africa; KwaZulu-Natal accounts 15.8% and Mpumalanga 15.4% are the most affected as compared to the rest of the provinces. The survey also revealed that young women aged 25-29 years are the most affected and the epidemic increased so that one in three (32.7%), were found to be HIV-positive in 2008. These findings suggest that interventions to prevent HIV/AIDS infections in South Africa started showing effective results, but at the same time it shows areas that need improvement.

2.2.5 Gender Issues and HIV/AIDS

It is reported that HIV prevalence among females is more than twice as high as that of males in the age groups 20-24, and 25-29 years (Shisana, 2009). According to the United Nations Development Fund for Women-UNIFEM (2006), almost a half of HIV positive people in the world are women, and in Africa, young women are three times more likely to be HIV positive than young men. This is congruent with the findings of the National survey on HIV prevalence in South in 2008 by Shisana et al. (2009) whereby HIV prevalence among females remains more than twice higher than males. Countries with the highest HIV-prevalence rates face consequences that include the loss of human

capacity to run the government, businesses and vital public services (UNIFEM, 2006). Women carry the most and complex burden of HIV/AIDS-related issues, through gender inequality, poverty, and violations of women's rights. Women have less information about how to prevent HIV/AIDS; they have fewer resources as well as economic dependency, and this becomes a barrier to negotiating safe sex (UNIFEM, 2006; Shisana, 2009). Furthermore, women assume the burden of home-based care for others who are sick or dying of HIV/AIDS, which consumes their energy and time that they might use for earning a livelihood, and limited empowerment, restricted access to and control over resources (World Bank, 2004; UNIFEM, 2006). Also, physiologically, women are more susceptible to HIV infection than men, whereby transmission during sexual intercourse is almost twice as likely to lead to female infection as to male infection.

Gender norms shape attitudes towards information sharing on sex, sexuality; sexual risk-taking and fidelity play a significant role in determining the course of the epidemic (World Bank, 2004). In addition, in most societies, norms require females to remain ignorant, passive, subordinate and faithful in sexual relations, when men are required to be knowledgeable and experienced; also stigma and the culture of silence and denial of women exacerbate the spread of HIV/AIDS among women. This literature is congruent with the findings of the study conducted by Zuma, Gouws, Williams & Lurie (2003) on risk factors for HIV infection among women in South Africa which showed that mitigation, age and power differences, marital status, alcohol use, and sexually transmitted infections (STIs) are the factors that predispose women to contract new HIV/AIDS infections more than men. Similarly, Katz and Low-Beer (2008) have

reported that intergenerational sexuality where younger females have sex with older males is an important factor that is contributory to the spread of HIV among young women. These findings suggest a particular attention to gender issues with regard to HIV/AIDS prevention.

2.3 STRATEGIES OF HIV/AIDS PREVENTION IN TERTIARY LEARNING INSTITUTIONS

The report by the UNAIDS (2008) states that he global HIV epidemic cannot be reverted, without strong, and sustained success in comprehensive prevention of new HIV infection, especially among young people who are at high risk of contracting new HIV infections. The report reveals that 87% of countries with targets for universal access have established goals for HIV treatment, but only about 50% of those countries have targets for key HIV prevention strategies.

Research findings have suggested that interventions that aim at preventing HIV/AIDS must focus the groups at high risk of contracting new HIV infections; those are women, children and young people (Bankole, Singh, Woog & Wulf, 2001). Many students become more sexually active as they move from the rural areas near their families into new environments and new developmental phases whereby experimentation and risk taking and sexual practices occur (Braithwaite & Thomas, 2001). Similarly CDC (2008) reported that university students who are mostly young people have been identified to be at high risk of contracting new HIV infection (CDC, 2007).

According to the Department of Health of South Africa (2007), HIV/AIDS Program efforts were made to fight and reverse the course of HIV/AIDS among all South Africans. The program channels its interventions through four main components, namely 1) HIV/AIDS Prevention, 2) Treatment, Care, and Support, 3) Monitoring, Research, and Surveillance, and 4) Human rights and access to justice. In the same objective, to respond to HIV/AIDS infection among university students, the SAUVCA met in 2000, and suggested that there should be a clear policy with regard to HIV/AIDS prevention (Chetty, 2000). According to the Southern African Regional Universities Association-SARUA) (retrieved May 02, 2009, from http://www.sarua.org/files/publications/HIV_AIDS_Part5_response.pdf), the strategies opted by the South African universities took origin to the National framework for HIV/AIDS prevent. It is a threefold response priorities to HIV/AIDS prevention, namely:

- Top five prevention methods: HIV and AIDS awareness raising, Identify and change university practices that encourage high risk sexual behavior, Distribution of male/ female condoms, Provision of HIV counseling and testing, and Treat STIs and provide access to reproductive health services;
- Treatment, care, and support: Access to treatment programs, Provide access to HIV testing services, Access to psycho-social support and counseling programs, Provide information on nutrition and diet, Access to referral services for the diagnosis and treatment of TB, and Programs that reduce the stigma of HIV;

- Conducting an HIV risk assessment, Develop an HIV policy, strategy and implementation plan, Work with partners in your environment, Build AIDS competent leadership, and Monitor your program.

2.4 EXISTING ON-CAMPUS HIV/AIDS PREVENTION METHODS AT THE UNIVERSITY OF KWAZULU-NATAL

According to The University of KwaZulu-Natal AIDS program Policy (2005), (Available from: http://hr.ukzn.ac.za/Uploads/80faec4e-b454-417f-8d3f-, b3db62639d/AIDS%20POLICY.pdf [Accessed 19 may 2009], together with the Campus Health Services currently provides the following HIV/AIDS-related service:

a) Free Confidential Voluntary Counseling and Testing
b) Free wellness management of students infected with HIV
c) Free Anti-retroviral treatment for students.
d) Free Syndrome management of sexually transmitted infections.
e) Free post-exposure prophylactic (ARV) treatment for victims of sexual assault
f) Free post-exposure prophylactic (ARV) treatment of occupational exposure to HIV & HBV (Hepatitis B Virus)
g) Free psycho-social support.
h) Free male and female condoms.
i) Campus based HIV/AIDS resource centres for access to information on HIV and AIDS related issues.
j) Peer Education program for students

k) Referral system to other health services and facilities.

The UKZN HIV/AIDS Policy envisages that there would be Programs and Projects for HIV/AIDS Prevention oriented to staff and students. It envisages also the provision of condoms to all students and staff on campus premises, at the same time sensitizing their use, Abstinence and Be faithful (ABC Methods). This can be done through ICE (Information, Education and Communication) Program, with material related to HIV/AIDS prevention (ibid).

Counseling, Care and Support,

VCT (Voluntary Counseling and Testing) should be available on campuses and an operational referral system should be in place to local health facilities for ongoing treatment. Wellness Program must be available to all students and staff. Support groups for affected and/or infected students and staff must be in place. Counseling and Post-exposure prophylaxis will be provided at the Campus Clinics for rape survivors and those who become accidentally exposed to the risk of HIV in their occupational environment.

Treatment,

There will be access to budget for basic treatment, care and support for ongoing ART (Antiretroviral Therapy) where students are referred to. Post-exposure shall be available for specific incidences that can happen among student and staff, including sexual assault and acts of violence, and occupational injuries. Adequately equipped first aid resources must be easily accessible by students and staff, and deal with injuries that occur on campus with potential risk of HIV transmission.

Universal Precautions,

The University shall make available to all staff and students through the medium of electronic resources, and within Departments, Schools or Units, a description of Universal Precautions to be utilized in the event of blood or bodily fluid spillages.

Integration of HIV/AIDS into curriculum

An integrated response to HIV & AIDS within the curricula of the University will be developed with the appropriate assistance and guidance of national norms and standards that are developed through a consultative process with other tertiary institutions, and those with expertise within the University.

Research

The University is committed to undertaking extensive empirical and operational public health, biomedical and social science research on HIV & AIDS. Policies, plans and guidelines will be developed to support HIV & AIDS research underway and creates mechanisms, which encourage more research to be undertaken by staff and students at the University.

Implementation, Monitoring and Evaluation

The policy shall be given operational effect by the University's AIDS Program.

These services are available, and they are considered to be effective to prevent HIV/AIDS, not only among university students in UKZN, but also elsewhere. Their use is explored later (ibid).

2.5 YOUNG PEOPLE ATTITUDES TOWARDS THE UTILIZATION OF HIV/AIDS PREVENTION METHODS

The report by the UNICE (2002) had suggested that young people were at the central of the global HIV/AIDS. The statement is confirmed by the report by the UNAIDS (2008) which states that at the end of the year 2007, young people aged 15-24 years accounted 45% of all new HIV infections worldwide. However the epidemic is not proportionately distributed across the world and Sub-Saharan remains the epicenter of the epidemic accounting about 67% of all HIV/AIDS infection worldwide (UNAIDS Report, 2008). The report also estimates that about 90% of the global number of children younger than 15 years living with HIV lives in sub-Saharan Africa.

Findings of the survey conducted by Pettifor et al. (2004) in South Africa estimated HIV infection rate to be 10.2% among people aged 15-24 year old. These findings are also similar to the epidemiological studies in South Africa in the year 2006 which showed that the peak incidence of HIV/AIDS occurs in young people aged 15-24 years, which means that young people are at higher risk of contracting HIV/AIDS infections (Visser, 2007).

The study conducted by Dorrington, Johnson, Bradshaw and Daniel (2006) reported that the highest rates of new infections occur among young people. This is because of high-risk sexual behaviors, lack of sound knowledge and access to necessary information about HIV/AIDS among young people. Similarly, the study carried out in Burkina Faso, Ghana, and Zambia by Stephenson (2009) showed that young people reported risky sexual behaviors leading to HIV infection. Those are early first sexual intercourse, non-

use of condom, and multiple sexual partners. High educational level and greater levels of HIV/AIDS-related knowledge were associated with reduced reporting risky sexual behaviors among young people. The study concluded that effective information among young people is imperative for behavioral change, as the epidemic continues to surge among young people.

Studies have also shown that not only in developing countries, but also young people are the most exposed even in industrialized countries, but at very different proportions. The study conducted by Djokic et al. (2009) in Chicago showed that young adults aged 18-30 years were knowledgeable about HIV/AIDS therapy (71%) but they had significant misinformation about its mode of transmission, treatment, and prevention. Twenty five percent thought that an HIV vaccine is available, 13% thought that there was a cure for HIV. In addition, one third did not use a condom in their last sexual intercourse, and one fourth was not tested for HIV. The study concluded that there is a need of targeted HIV risk education interventions in the public, and basic information on HIV/AIDS and HIV voluntary Counseling and Testing (VCT) which are of great concern among youth and adults so that they use existing HIV preventive methods.

Throughout these findings, there is a need to look back to HIV/AIDS prevention, particularly among youth so as to reverse the course of the epidemic.

2.6 UTILIZATION OF HIV/AIDS PREVENTION METHODS AMONG UNIVERSITY STUDENTS

The majority of university students are young people, and this is the group at high risk of HIV as it accounts for 45% of all new HIV infections in adults (UNAIDS, 2008). Studies have shown that HIV/AIDS services can effectively prevent HIV/AIDS infections where they are well used. However, studies showed that university students engage in high risk sexual behavior, which suggests that they do not necessarily use existing HIV/AIDS services to prevent the contraction of the epidemic.

According to the report by the CDC (2007) on sexual risk behaviors among university students in the USA, 15% of students had had four or more sexual partners, and 39% of all sexually active did not use condoms during their last sexual intercourse.

A similar situation was found in the study conducted among university students in South Florida by Trepka et al. (2008) which showed that students were at high risk of contracting HIV, as they reported high risk sexual behavior. Results showed that 14% of respondents engaged in risky sex and 11.9% reported consistent risk sex. Among all the respondents, 52.1% did not use condoms the last time they had sexual intercourse, 52.4% did not use condoms most of the time or always during the preceding month. Reported associated factor to non-use of condom was the influence of alcohol and illicit drug use. With regard to HIV testing, more that a half had been tested for HIV (52.1%), about 42% consumed alcohol, 14.1% reported using drugs, and 45% have received information on HIV/AIDS from the university. Results reveal that about 45% of those reporting risky sex had sex under influence of alcohol, and more than a third of them have never been tested

for HIV. Mostly, risky sexual behavior might be related to individuals' level of risk taking, the researcher stated.

The study conducted in Turkey among university students showed that students had low level of knowledge of HIV/AIDS and reported high risky sexual behavior (Gokengin et al. 2003). Males had multiple sexual partners at higher level (39.3%) compared to females (3%). Among sexually active males, 38.8% had never used a condom versus 21.3% of the females. The study suggested that emphasis should be put on sex education among university students in Turkey.

A different situation was found among students in Northwestern China, in the study conducted by Lonn, Sahlholm, Maimaiti, Adbukarim, and Andersson (2007) which showed that university students had high knowledge of HIV transmission (95%), and their knowledge was proportionate with their behaviors, as they had reported very low risk sexual behaviors, among both female and male students.

Studies have confirmed the positive effect of Peer education Programs among university students. This was shown by the study carried out by Ergene, Cok, Tumer, and Unal (2005) among university students in Turkey. Results showed that students rated HIV transmission risk as high (72%) and as low (28%). Only five percent of the students had had HIV screening test. 28% of all respondents reported that they were sexually active, among which 45% have not used condoms. 15% of respondents have never communicated to anyone about HIV/AIDS or sexual behavior. Among all the respondents, results showed that female students showed a higher attitude and knowledge

than male students in both experimental and control groups. These findings suggest that respondents reported high risk sexual practices that need to be addressed with regard to HIV/AIDS prevention.

A different situation was observed in the study that evaluated students' perceptions towards peer education Programs, the study carried out by Li et al. (2009) in China to evaluate the University-based peer health education. The majority of peer educators rated their experience as very good (43.3%), good (50%) and fair (6.7%). Many peer educators ranked the program as meeting their expectations (73.3%), and they received adequate support (83.4%). On the other hand, students were aware of the peer education program (89.5%), but only 31.2% perceived peer educators to be helpful, 24.3% were neutral, and many felt that it was not necessary (44.5%). Students who reported to consult peer educators were only 23.2%. Students who could not consult peer educators, 64.9% would rather seek information elsewhere, 47.2% felt that peer educators were unhelpful, and 41.2% believed that they could take care of themselves, and 27.5% were unclear about the role of peer educators. In this light, findings suggested that, even though peer educators showed promising outcome, there is still need of cultural adaptation for effectiveness of the program to prevent HIV infection among students.

The main entry points to HIV/AIDS prevention among young people are to increase their knowledge and awareness of the epidemic, and encouraging HIV testing (UNAISD Report, 2007). The university students have shown good knowledge of HIV/AIDS, but with significant gaps that need to be addressed (Nasir, Astrom, David & Ali, 2008).

These researchers conducted a survey among Sudanese students from private and public institutions. Results showed that accurate knowledge of HIV transmission modes among students was low, 53.8% versus 43.9% in private and public dental schools respectively. Only about half of students recognized condom use as a safe method to prevent HIV. Reported sources of information on HIV/AIDS were namely lectures, Radio and TV (61% versus 44%) in public and private school respectively, information from friends and relatives (31%), and health care workers (39%). About half of the students (47.6%) reported a high need for further education on HIV/AIDS. The authors concluded that there is need to address knowledge and awareness among university students.

The study conducted among university students at Semey and Kazakhstan on HIV/AIDS awareness and risk sexual behavior by Hansson, Stockfelt, Urazalin, Ahlm, and Anderson (2008) showed that students were highly knowledgeable and aware of HIV/AIDS. A significant number of 99% reported that they had heard about HIV/AIDS, 89% new the ways of HIV and other STIs transmission modes. However students had difficulties to differentiate HIV and AIDS, and failed to mention main ways of HIV transmission. Despite their good knowledge of HIV/AIDS, students reported high risk sexual behaviors, mainly prostitution which was reported by more than 30% of respondents, and this was amplified by stigmatization of the HIV positive and homosexuality.

2.7 UTILIZATION OF HIV/AIDS PREVENTION METHODS AMONG STUDENTS IN SOUTH AFRICA AND UNIVERSITY OF KWAZULU-NATAL

HIV infection rate has been identified to be high among South African university students (Chetty, 2000; Stremlau & Nkosi, 2001). Different studies have shown that students have self-reported to be at high risk behavior of contracting HIV infection, which suggest a low use of HIV prevention methods.

Findings of the study conducted at the former University of Durban, Westville Campus by Uys et al. (2001) suggest that the growing incidence of the HIV infection amongst students at tertiary institutions in South Africa is similarly highlighted as a cause for concern, because of the limited number of studies on HIV/AIDS that have been undertaken amongst students at tertiary institutions in South Africa. 15.4% of the students reported to have a tendency to indulge in casual sex without necessarily practicing safe sex by using condom. Students tend to be worried about falling pregnant than becoming infected with HIV and do not consider themselves to be at serious risk of contracting HIV/AIDS, and suggest the low level perceived susceptibility towards HIV/AIDS infections.

A comparative study carried out by Peltzer et al. (2004) among university students in three countries: India, South Africa, and United States of America showed that students were at high risk of contracting HIV infection. About half of all sexually active students in the three countries reported that they had used a condom at their last sexual intercourse, and had had sex under the influence of alcohol and personally knew at least

someone with HIV or AIDS. With regard to HIV test behavior, one fifth of American and South African students, and only 10% of the Indian students had had HIV test. Among those who had had sex during the last 12 months all 74.7% had tested HIV. American students were more courageous to consult for being tested and collect HIV test result than others (93%), Indian (87%) and South African (78%). Positive attitude towards HIV testing was associated with getting results of HIV test but not necessarily being tested, and this was inversely related with the positive attitudes on condom use. The intentions to avoid risk behaviors and knowledge of factors that increase the risk of being infected do not necessarily lead students to take action in HIV testing. Intention to condom use in the three groups was high but inconsistent. As the authors concluded, findings suggest that there is need to incorporate behavioral components into HIV prevention, education about the benefits of VCT and structural and social marketing to reduce stigma among university students.

It was confirmed by the case of Uganda that HIV/AIDS can be considerably reverted if preventive methods are applied. This country managed to reverse the epidemic at high level (70%) using existing HIV prevention methods (Robert & Blum, 2004). This case can serve as an example to developing countries in terms of HIV/AIDS prevention. It was confirmed that young people, especially university students use at low scale existing HIV prevention methods. However, little is known about factors that influence their non-use, and what students perceive as barriers.

2.8 CONCEPTUAL FRAMEWORK

According to the World Health Organization (WHO) health promotion comprises healthy lifestyles, health services, and supportive environment to health (WHO, 2007). In this study, the researcher is interested in health prevention and disease prevention, and looked at the following conceptual framework to choose one that would guide this study: The Theory of Reasoned Action and the Theory of Planed Behavior, Pender's Health Promotion Model, and Health Belief Model (HBM).

Health Beliefs Model (HBM) was chosen by the researcher to guide this study. The model will be described in three aspects; these are HBM components, relationship between HBM components, and the use of the model to understand the individuals' likelihood of action, which depends mainly on their perceptions (Glanz, Rimer & Lewis, 2002). The application of this model in guiding this research will be also clarified.

2.8.1 The Health Belief Model (HBM)

The health belief model (HBM) is a psychological model that attempt to explain and predict health behavior. It was developed in the 1950s by a group of psychologists Hochbaum, Rosenstock, and Kegels working in the US Public Health Services (Glanz, et al., 2002, p. 46). The model was mostly used in tuberculosis screening program and later adapted to be used in different health behaviors, such as sexual behaviors and transmission of HIV/AIDS.

The Health Belief Model is a value-expectancy theory. The value-expectancy theory can be defined as formulations of behavior outcome or the subjective probability or expectations that a particular action will achieve that outcome from the subjective value (Glanz et al., 2002).

In the context of health-related behaviors, the desire to avoid disease or getting ill is the subjective value, and the belief that a certain health action that is available to a person can prevent the disease to occur, is the expectation or the subjective probability (Glanz et al., 2002).

This theory was developed to explain factors that influence or inhibit people's behaviors to adhere or not adhere to a treatment or complying with health-related interventions.

2.8.2 Main assumptions of Health Beliefs Model (HBM)

The following are the main assumptions and statements of Health Beliefs Model (HBM):

1. A person will take a health-related action, if that person feels that a negative condition can be avoided;

2. If the person has a positive expectation by taking that health-related action she/he will avoid that negative health condition;

3. And if the person believes that she/he can take that recommended health-related action comfortably and confidently. Such individual beliefs will determine her/his readiness to take action (Glanz et al., 2002). It is certain that people will take action to prevent a given condition if they feel and believe that they are susceptible to the condition and that condition would have serious negative consequences to health; and that taking such course of action would reduce the occurrence of the condition. The theory suggests that

the perceived level of susceptibility and severity, and perception of benefits will give the force to individual taking action (Glanz et al., 2002).

2.8.3 Components of HBM and Health Promotion practices

Health Belief Model (HBM) has the following components (Figure 2.1):

- ***Perceived Susceptibility***

  It is one's subjective perception of the risk to contract a disease or other health condition. This is applied by defining population at risk and the risk level. The personalization of risk based on a person characteristics or behavior and make perceived susceptibility more consistent with an individual's actual risk.

- ***Perceived severity***

  This refers to one's feelings and belief of how serious is the condition and its consequences. Perceived susceptibility and perceived severity is also called perceived threat. This is applied by specifying the consequences of the condition.

- ***Perceived benefits***

  This refers to one's belief in the efficacy of the advised action, since the person believes to be susceptible to a condition and its seriousness (perceived threat) and one's belief that advised action will reduce or eliminate the condition, or minimizes its consequences. This is applied by defining action to take positive effect to be expected.

- ***Perceived barriers***

  This refers to the tangible and psychological costs of the advised action. This is seemed to be the potential negative aspects of a particular health action, as it works as

a hindrance to undertaking the recommended action. This is applied by identifying and reducing barriers through reassurance, incentives, and assistance.

- ***Cues to action***

This refers to the strategies to activate one's readiness to take action by providing how-to information, promoting awareness, reminder systems, and other reassuring ways.

- ***Self-efficacy***

This refers to one's confidence and conviction in one's ability to take action. To promote health, there must be training, progressive goal setting, giving verbal reinforcement, demonstrate desired behavior, reducing anxiety and give guidance in performing action.

- ***Other variables***

The other variables such demographic, socio-psychological, and cultural variables can affect individual's perceptions and influence indirectly health-related behavior. Socio-demographic factors, such as educational attainment can influence one's behavior by influencing the perception of susceptibility, severity, benefits, and barriers (Glanz et al., 2002).

2.8.4 The use of Health Belief Model (HBM)

This model has been used in diverse observational descriptive studies that showed the ability of HBM for mammography screening (Glanz et al., 2002) particularly the constructs of perceived susceptibility to breast cancer and perceived benefits and benefits to action. Women who were adherent to mammography recommendations had higher

susceptibility scores and lower perceived barriers as compared to the other group of women who did not intend to use mammograms, their perceived benefits were lower. It was proven that the most promising strategies to increase mammography adherence were individually tailored messages based on HBM beliefs about screening. Tailored materials (letters and, telephone counseling) increased adherence with women of lower socioeconomic levels. With regard to HIV/AIDS, the Health Belief Model suggests that perceived susceptibility is necessary before the commitment is made for the people who exhibit high risk sexual behaviors (Glanz et al., 2002). The higher perception of threat from HIV/AIDS perceived barriers leads to AIDS-protective behavior decisions on a larger scale.

As the perceived threat is high, and the perceived benefits are higher that perceived barriers, a cue to action to HIV preventive behavior is highly predicted according to HBM (Glanz et al., 2002).

This study will follow this scope and application of the Health Belief Model (HBM) as illustrated Table 2.1

2.9 CONCLUSION

This chapter focused at HIV/AIDS in the world, in Africa, and South Africa. The chapter referred to diverse literature on the use of HIV prevention methods among young people in tertiary institutions. The chapter also described the conceptual framework that will guide this study.

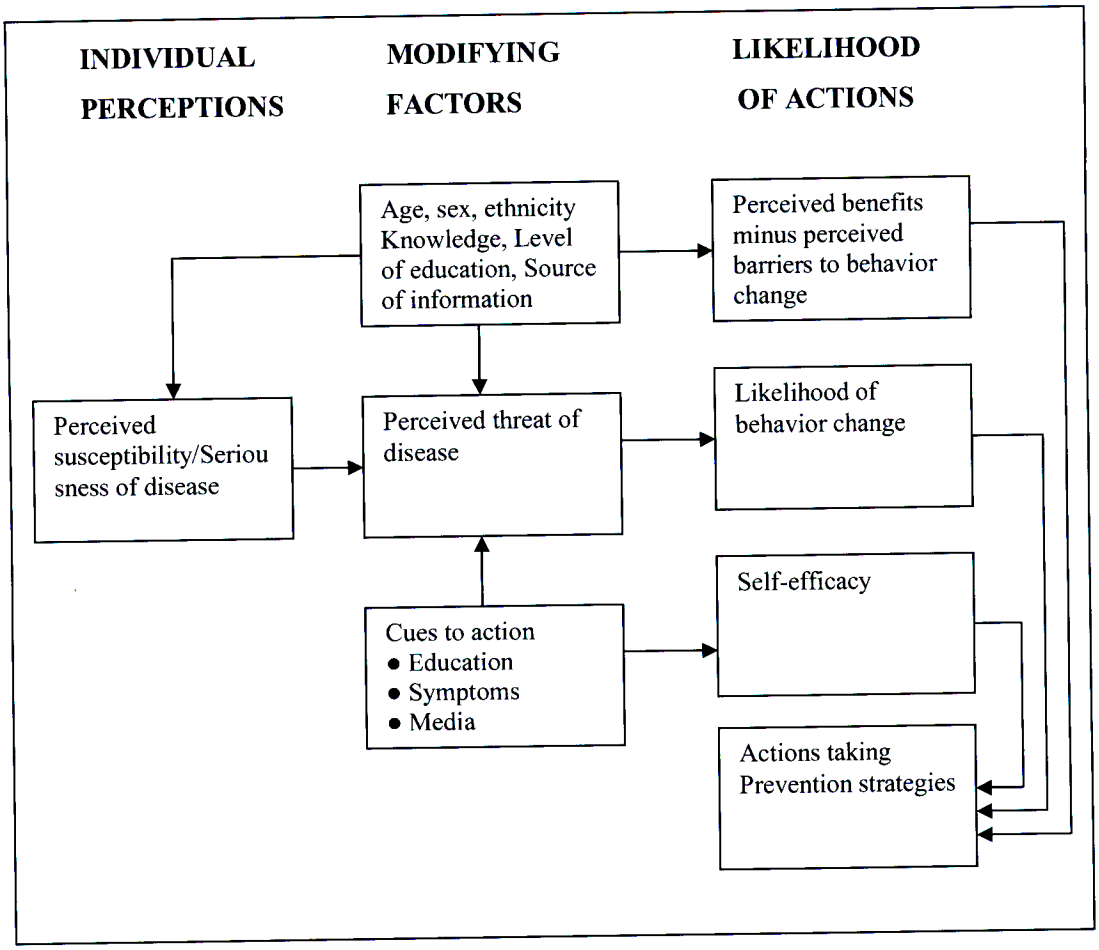

Figure 2.1: Component and linkages of the Health Belief Model

Source: Adapted from Glanz et al. (2002, p. 52)

Table 2.1: Example of the use of Health Belief Model in the research

Concept	Condom use Education, (or the whole ABC method)	STIs screening or HIV testing
1.Perceived susceptibility	Youth believe that they can get STIs or HIV or get pregnant	Youth believe they may have been exposed to STIs or HIV
2.Perceived severity	Youth believe that the consequences of getting STIs or HIV or get pregnant are significant enough to avoid	Youth believe the consequences of having STIs or HIV without knowledge or treatment are significant enough to try to avoid
3.Perceived Benefits	Youth believe that the recommended action of using condoms would protect them from getting STIs or HIV or creating a pregnancy.	Youth believe that the recommended action of getting tested for STIs and HIV would benefit them possibly by allowing them to get early treatment or preventing them from infecting others.
4.Perceived Barriers	Youth identify their personal barriers to using condoms (i.e., condoms limit the feeling or they are too embarrassed to talk to their partner about it) and explore ways to eliminate or reduce these barriers (i.e., teach them to put lubricant inside the condom to increase sensation for the male and have them practice condom communication skills to decrease their embarrassment level).	Youth identify their personal barriers to getting tested (i.e., getting to the clinic or being seen at the clinic by someone they know) and explore ways to eliminate or reduce these barriers (i.e., brainstorm transportation and disguise options).
5.Cues to Action	Youth receive reminder cues for action in the form of incentives (such as pencils with the printed message "no glove, no love") or reminder messages (such as messages in the school newsletter).	Youth receive reminder cues for action in the form of incentives (such as a key chain that says, "Got sex? Get tested!") or reminder messages (such as posters that say, "25% of sexually active teens contract an STI. Are you one of them? Find out now").
6.Self-Efficacy	Youth confident in using a condom correctly in all circumstances.	Youth receive guidance (such as information on where to get tested) or training (such as practice in making an appointment).

Source: Health Belief Model. Retrieved March 05, 2009, from http://www.cw.utwente.nl/theorieenoverzicht/Theory%20clusters/Health%20Communication/Health_Belief_Model.doc/

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes research approach, design, study setting, study population, study sampling, and sample size that was used in this study. The instrument, reliability and validity, data collection procedure, data analysis, ethical consideration, data management, data storage and disposal are also discussed.

3.2 RESEARCH PARADIGM

A positivist paradigm was adopted in this study. A positivist paradigm refers to the traditional paradigm underling the scientific approach, which assumes that there is a fixed, orderly reality that can be objectively studied; often associated with quantitative research (Polit & Beck, 2004, p.728). Positivists believe that phenomena are not haphazard or random events, but rather have causes (Polit, Hungler & Beck, 2001, p.12). The researcher in this study aimed to determine the underlying factors that influence the use of on-campus HIV/AIDS prevention methods by university students.

3.3 RESEARCH APPROACH

A quantitative approach was adopted in this study. According to Burns and Grove (2005) quantitative research is a formal, objective, systematic process in which numerical data are used to obtain information about the world. According to these authors, quantitative research method is used to describe variables and examine relationships among variables. Therefore, this study opted to use a quantitative approach to collect data on factors that

influence the utilization of on-campus HIV/AIDS prevention methods and perceived barriers to their utilization.

3.4. RESEARCH DESIGN

Research design is defined as the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process (Polit & Beck, 2008, p. 66). It is also viewed as the end results of a series of decisions made by the researcher concerning how the study will be implemented (Burns & Grove, 2005, p. 211). An exploratory-descriptive design was used in this study to describe the perceived factors that influence the utilization of HIV/AIDS prevention methods, and perceived barriers to the utilization of existing on-campus HIV/AIDS prevention methods by university students. According to Polit and Beck (2008) like descriptive research, exploratory research begins with a phenomenon of interest; but rather than simply observing and describing it, exploratory research investigates the full nature of the phenomenon, the manner in which it is manifested, and the other factors to which it is related (Polit & Beck, 2008, p. 20). This design assisted the researcher to identify factors influencing the utilization of HIV/AIDS by university students at the UKZN, as there is not a study that has been done to explore them in this university.

3.5 RESEARCH SETTING

The study was conducted on and off-Campus residences in a selected campus at the University of KwaZulu-Natal, South Africa. The University on-campus residences are grouped into two halls, namely Charles Smith Hall and Albert Luthuli Hall. Charles

Smith Hall is comprised of 12 individual residences. Albert Luthuli Hall is comprised of the Cluster Residence and the six-storey Tower Residence. There are also two off-campus residences, namely St Hiller which is situated opposite Queensmead Shopping Mall in Umbilo, and J V Smith which is closer to the Medical School campus, which makes a total number of 14 residences (Accommodation for students, 2009 from http://www.ukzn.ac.za/prospective/Accomodation.aspx). Students residing in selected halls of these residences were invited to participate in the study.

3.6 POPULATION, SAMPLING, AND SAMPLE SIZE

3.6.1 Population

The study population is defined as all elements (subjects, objects, or substances) that meet certain criteria for inclusion in a given universe (Burns & Grove, 2005, p.40). The University residences for Howard College and Medical School in Durban accommodate approximately 2162 students (Accommodation for students, 2009 from http://www.ukzn.ac.za/prospective/Accomodation.aspx). The study population was comprised of all registered university students living on and off-Campus residences of a selected campus at the University of KwaZulu-Natal.

3.6.2 Sampling and Sample Size

Sampling

Sampling is defined as the process of selecting a portion of the population to represent the entire population so that inferences about the population can be made (Polit & Beck, 2008, p. 339).

In this study, sampling was done in two stages:

Sampling of residences

Probability Sampling Method was used to select three on-campus residences. Probability sampling method refers to the fact that every member (element) of the population has the probability to higher than zero of being selected for the sample (Burs and Grove, 2005, p. 346). Simple Random Sampling was used as follows: the researcher wrote the name of each on-campus residence on a separate piece of paper and selected three residences randomly.

Non-probability Purposive Sampling Method was used to select one off-campus residence. Purposive Sampling is referred to as judgmental or selective sampling whereby the researcher consciously selects subjects, elements, events or incidents to include them in the study (Burns & Grove, 2005, p.352). This method was chosen because there are only two off-campus residences, and including them in the sampling frame for random sampling would reduce their chance to be selected in the sample.

Sampling of respondents

Non-probability Convenience Sampling Method was used to select respondents from each residence to complete the questionnaires manually. In Convenience Sampling respondents are selected because they happened to be in the right place at the right time of data collection (Burns & Grove, 2005, p. 350). In each residence, at least 90 students who were available at the time of data collection were invited to participate in the study. The totality of students who were invited to participate was 360 living in the four selected residences, and 261 (72.5%) completed and returned the questionnaires. The sampling

was calculated using the following formula as provided in Katzenellenborgen, Joubert and Karim (1997):

$$\text{Sample size} = \frac{z^2pq}{d^2}$$

Z is the normal deviate (1.96), p is the expected proportion of population, q is 1-p and d is the required precision.

$$n = \frac{(1.96)^2 \times 0.15 \times (1-0.15)}{(0.038)^2}$$

$$n = 339$$

The sample size of 339 was the minimum estimated so as to have at least 15% of the whole population (2162) taking part in the study. The final sample was 335 respondents among which 261 (78%) questionnaires were completed manually, and 74 (22%) were completed online.

3.7 DATA COLLECTION PROCEDURE

The data were collected after authorization of different authorities: the approval letter from the Ethics Committee of the University of KwaZulu-Natal, approval letter from the Deputy Dean of students at Howard College Campus and Medical School, as well as the approval letter from the Housing Administrator at Howard College and Medical School.

A pilot study was conducted, and the sampling was done. The researcher met respondents in their respective residences the evenings. A written Information Document (Appendix A), explaining the nature of the study and inviting respondents to participate voluntarily

in the study, together with a Consent Form (Appendix B) and the Questionnaire were provided to all students who were available at the time of data collection. Students who consented to participate in the study completed the questionnaires manually. The researcher provided the box in the form of the electoral box for secret ballots where respondents slid in the completed questionnaires. The similar questionnaire was sent and completed by respondents on-line. These questionnaires were enclosed in a link whereby the questionnaires were sent back by respondents after their completion.

3.8 RESEARCH INSTRUMENT DESCRIPTION

The questionnaire used to collect data in this study was used in the study conducted by Simbanyi et al. (2005) on Risk Factors for HIV/AIDS among Youth in Cape Town, South Africa (Appendix C). However, this questionnaire was adapted to fit in the current study. Some questions were not asked, as they were not relevant to the utilization of on-campus HIV/AIDS prevention methods. The researcher added other open-ended questions as to give a chance to respondents to explain themselves about issues experienced or perceived that are not probably mentioned in the questionnaire. Respondents were also asked to give suggestions to overcome identified barriers.

The questionnaire was made of seven sections:

- Section A: Socio-demographic data, with six items;
- Section B: Questions on Perceived Susceptibility, Perceived threat and Attitude of HIV/AIDS, with seven items, to respondent to the first objective of the Study;
- Section C: Knowledge of HIV/AIDS and Sources of Information, with 12 items,

to respondent to the second objective of the study;

- Section D: Sexual Experiences and Risk Sexual Behavior, with 11 items, to respond to the third objective of the study;
- Section E: On-campus HIV Prevention Methods awareness and their Utilization, with nine items, to respond to the fourth and fifth objective of the study;
- Section F: Perceived Barriers, Perceived Benefits and Self-efficacy to the utilization of HIV/AIDS Prevention Methods, with 23 items, to respond to the sixth Objective of the study;
- Section G: Open-ended Questions, with two items, to respond to the seven and eighth objective of the study.

3.9 VALIDITY AND RELIABILITY OF THE INSTRUMENT

i) Validity and Reliability

The instrument validity refers to the fact that whether an instrument measures accurately what it is intended to measure, given the context in which it is applied (Brink, 2006, P. 159). Reliability of the research instrument refers to the degree to which the instrument can be depended upon to yield the consistent results, if it is used repeatedly over time on the same persons, or if used by two researchers (Brink, 2006, p. 164).

The content of the self-report questionnaire is based on what the students are supposed to know, and based on the Conceptual framework that guided this study (Health Beliefs Model), and considered the study objectives and research questions. The administration of a structured self-report questionnaire ensures consistency as well.

The content validity of the instrument is summarized in the table below:

OBJECTIVES	CONCEPTUAL FRAMEWORK	QUESTIONS
To describe the perceived susceptibility and perceived threat of HIV/AIDS by UKZN students residing in a selected campus as perceived by students,	Socio-demographic characteristics: Age, sex, gender, Ethnic groups; Perceived threat of the disease which are *Modifying Factors*; also Perceived Susceptibility/Seriousness of the disease which are *Individual Perceptions*	Q1-Q13
To explore the knowledge of HIV/AIDS among UKZN students residing in a selected campus as perceived by students,	Socio-demographic characteristics plus level of knowledge and level of education, Sources of information and Cues to Actions, which are *Modifying Factors*	Q14- Q25
To describe the risky sexual behavior for HIV infection among UKZN students residing in a selected campus as perceived by students,	Socio-demographic characteristics plus level of knowledge and level of education, and Cues to Actions, which are *Modifying Factor;* Perceived benefits minus Perceived barriers which are *Likelihood of Actions*	Q26-Q37;
To explore the awareness of on-campus HIV/AIDS prevention methods among UKZN students residing in a selected campus as perceived by students,	Socio-demographic characteristics plus level of knowledge and level of education, Sources of information and Cues to Actions, which are *Modifying Factor;*	Q38
To determine the utilization of on-campus HIV/AIDS prevention methods by UKZN students residing in a selected campus as perceived by students,	Individual perceptions and Modifying Factors, plus likelihood of behavioral change	Q39- Q42
To describe factors associated with the utilization of existing on-campus HIV/AIDS prevention methods by UKZN students,	Individual perceptions and Modifying Factors, plus likelihood of behavioral change, Self-efficacy to take actions	Q43-Q66; Plus Data Analysis
To determine potential barriers to the utilization of existing on-campus HIV/AIDS prevention methods as perceived by the UKZN students residing in a selected campus,	Whole component of the model considered	Q67 Plus data Analysis
To explore measures which can enhance the utilization of on-campus HIV/AIDS prevention methods as perceived by UKZN students.	Whole component of the model considered	Q68

ii) Pilot Study

The pilot study is also a means to ensure the content validity and reliability of the instrument (Bless & Higson-Smith, 1995). The questionnaire was used previously in the study carried out by Simbanyi et al. (2005), and proven valid and reliable. The measures were Demographic characteristics, HIV antibody status (HIV testing), HIV risk behaviors, HIV prevention knowledge, Perceived AIDS susceptibility, Condom attitudes, Substance use, and Current sexual behaviors. However, the pilot study was conducted to test design issues, and test-retest for the stability of the instrument. Also because of other questions that have been added, the research was conducted in a different setting from the previous. Five students were sent the on-line questionnaire; other five students were given the questionnaires manually to complete and the researcher then analyzed their responses to establish if there have been any difficulties to complete these questionnaires. These students did not take part in the larger study. Findings of the pilot study showed that the questionnaire was easy to understand; there were no ambiguities or misunderstandings. The online and manual questionnaires were completed without any difficulty so there were no changes done to the questionnaire.

3.10 DATA ANALYSIS

Data analysis was performed using the Statistics Package of Social Sciences (SPSS) Version 15-0. Each response was given a code to be captured in the computer.

Data were checked (cleaning) and explored through graphical display, and they were analyzed, interpreted and summarized. There was no difference between the online and

manual questionnaires with regard to data analysis as the two questionnaires were the same.

Descriptive statistics:

Categorical variables were summarized using frequency distributions (counts and percentages) in Tables, Bar Charts and Graphs.

Numerical variables were summarized by measures of central tendency; those are mean, mode and median; and measures of variability, which are range, and standard deviation, depending on the distribution of the variables.

Analytic statistics:

Chi-Square test was used, so as to further describe relationships, similarities and differences between categorical independent variables and dependent variables; and to also establish gender differences among respondents. T-test and ANOVA testing were used to compare the mean knowledge scores between independent groups. Correlations were performed to assess relationships between quantitative variables. Because most of compared variables did not show statistically significant differences, the multivariate regression to assess many independent variables simultaneously was not performed as it was planned beforehand.

A part of the questionnaire was made of open-ended questions on experienced issues or barriers, and suggestions as reported by respondents with regard to the use of on-campus HIV/AIDS Prevention methods among students; these data were summarized and presented quantitatively.

3.11 DATA MANAGEMENT, STORAGE AND DISPOSAL

Data were collected by the researcher himself to ensure confidentiality. Thereafter, completed questionnaires were sent back to the researcher for summary and data analysis. Each response was given a code, and electronic copy was stored in a filed document which is accessed by the researcher, in arrangement with the supervisor. The electronic copy of online responses and manual questionnaires will be stored up to five years in the School of Nursing.

3.12ETHICAL CONSIDERATION

According to Burns and Grove (2005), the conduct of nursing research requires not only expertise and diligence, but also honesty and integrity. The following ethical actions are essential in research: 1) Protecting the rights of the human subjects;
2) Balancing benefits and risks in a study; 3) Obtaining an informed consent, and 4) Submitting a research proposal for institutional review.

This study took into account all ethical issues pertinent to research study involving human participation. The research proposal was submitted to the Ethics Committee of the University of KwaZulu-Natal and was approved (Appendix F). Approval letters by The Dean of Students (Appendix G) and the Housing Administrator (Appendix H) were also obtained. Thereafter, the researcher went to the field to collect data.

Respondents were provided written and oral information explaining the nature of the study and inviting them to participate. The information clarified to the respondents that

participation in the study is voluntary, to participate or not participate would not result any impact on their studies, and that there are no direct benefits from the study. Respondents were informed that they could stop or withdraw from participating in the study at any time without any penalty.

Informed Consent was provided and was signed by those students who agreed to participate in the study. Also the online questionnaire had the same Information document, but the Consent form was obtained by the fact that respondents accept to complete the questionnaire, and this clarified in the Information document.

Participants were assured to be protected from any kind of harm or deception if they consent to participate in the study. However, because participating in this study takes respondents' time, the researcher has mentioned it in the Information Document as the only risk in this study. Respondents were also ensured confidentiality of responses provided in the questionnaire will be kept completely anonymous and securely stored. To ensure their confidentiality, each response was given a code and captured in the computer. Only the researcher had access to that file using special password. For the sake of anonymity and confidentiality, the respondents were not asked to mention their names during data collection and further processes. This means that data was analyzed independently, without any link to any respondent identification. For this purpose, Informed Consent only requested respondents to mention their initials rather than their full name.

3.13 CONCLUSION

This chapter looked at the research approach, the design, study setting, study population, study sampling, and sample size. The instrument was described, and the validity with regard to objectives and the frame of reference were looked at. Data collection procedure, and data analysis, ethical consideration, data management, storage and disposal were described.

CHAPTER 4

DATA ANALYSIS

4.1 INTRODUCTION

This chapter presents the analysis of the findings from the study which was conducted to explore factors influencing the utilisation of on-campus HIV/AIDS prevention methods among UKZN students residing in a selected campus, as perceived by the students. A quantitative approach was used in this study. Data was collected using manual and online questionnaires. Both the online and the manual questionnaires had similar questions. Therefore data are presented and analyzed similarly for both types of questionnaires.

The results were analyzed using descriptive statistics and are presented in the form of tables and graphs. Also analytic statistics were used to compare independent and dependent variables and to perform statistical tests. The analysis was done using the Statistical Package for Social Sciences (SPSS) Windows, version 15. For statistical tests, a p-value of <0.05 was considered to be statistically significant with 95% confidence interval [95% CI]. A part of the questionnaire was made of open-ended questions whereby the students were asked to identify any problem they could have experienced and suggest a solution to the mentioned problem. Answers to these questions were summarized by numbering how many times each problem and solution was cited by respondents, in order to analyze these answers quantitatively.

4.2 SAMPLE REALISATION

Three hundred and sixty questionnaires were distributed among students who reside in 4 residences in a selected campus, out of which 261(72.5%) returned the completed questionnaires. Other 74 respondents completed the online questionnaires, and the sample was 335 respondents. Initially the calculated sample was 339, which was the minimum estimated so as to have at least 15% of the whole population (2162) taking part in the study. Still 335 respondents represent 15.5% of the whole population. The reason behind using the two types of questionnaires, the online and manual was to maximize the number of the participants.

4.3 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Three hundred thirty-five UKZN students residing in a selected campus completed an anonymous questionnaire that was used to collect data in this study. Out of these 335 respondents, 261 (78%) completed questionnaires manually, and 74 (22%) completed an online questionnaire.

4.3.1 Age of Respondents

The minimum age of respondents was 17 years old, and the maximum was 48 years old. The mean age, median and mode were 22.9 years, 22 years and 21 years respectively. In addition, the standard deviation (SD) was 4.459). The ages of respondents were normally distributed, since most ages were close to the mean age; very few were distributed to one side, positively skewed (Figure 4.1).

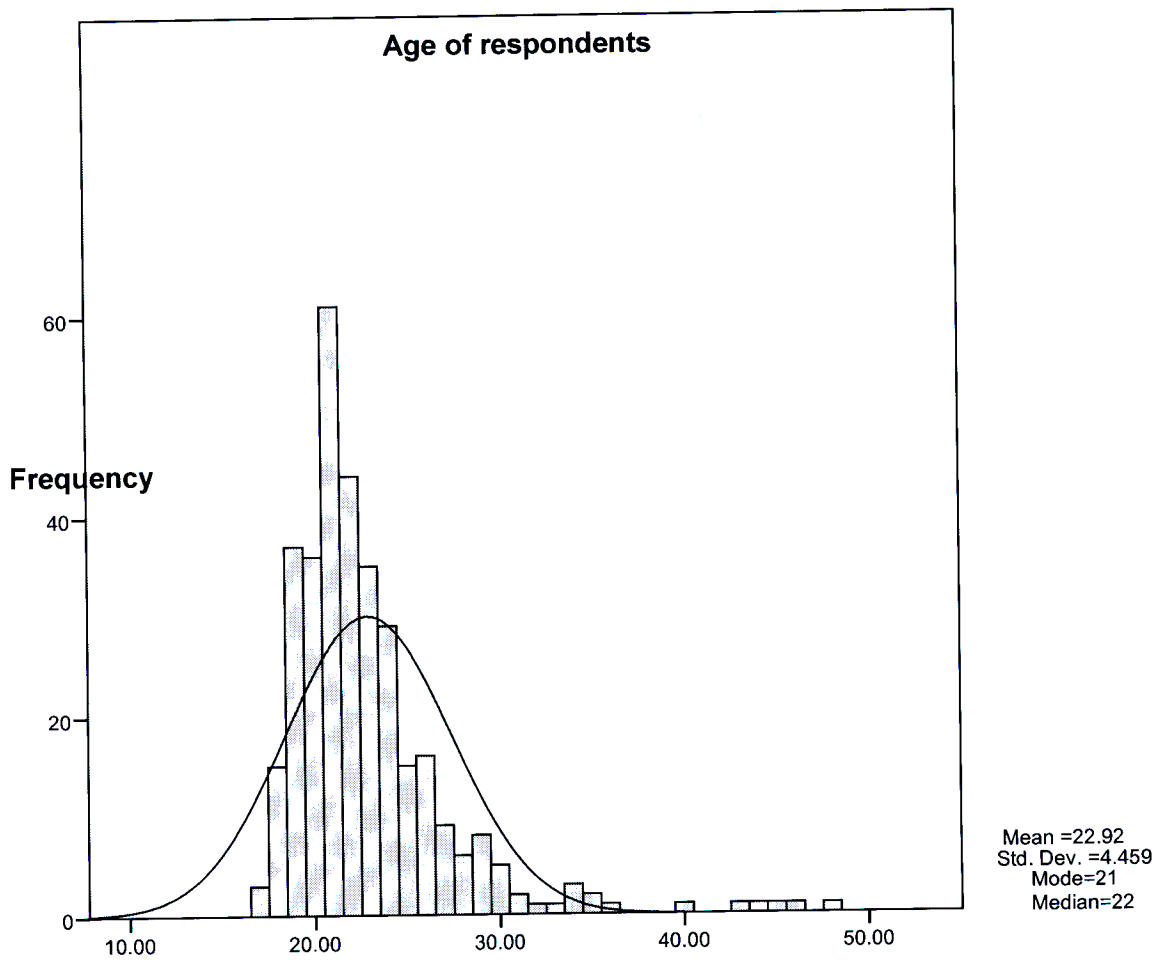

Figure 4.1: Age of respondents residing in a selected campus at UKZN

4.3.2 Gender of Respondents

The Female respondents in this study were 177 (52.8%) while the males were 158 (47.2%) (Table 4.1).

4.3.3 Marital Status of Respondents

The majority of 262 (78.2%) respondents were single. There were 44 (13.1%) with regular girl/boyfriend, while 25 (7.5%) were married, and three (0.9%) respondents were widowed. Only one respondent (0.3) was divorced (Table 4.1).

4.3.4 Ethnicity of Respondents

The majority of 309 (92.2%) respondents were black; 14 (4.2%) were white, eight (2.4%) were Indian, and four respondents (1.2%) were coloured (Table 4.1).

4.3.5 Students' status

The majority of 262 (78.2%) respondents in this study were local students while 73 (21.8%) respondents were international students (Table 4.1).

4.3.6 Academic level

The majority of 278 (83%) respondents were undergraduate students and 57 (17%) were postgraduate students (Table 4.1).

Table 4.1: Summary of Socio-demographic data of students residing in a selected campus at the UKZN

Socio-Demographic Variables	Attributes	Frequencies	Percentages
Gender	Female	177	52.8%
	Male	158	47.2%
	Total	**335**	**100%**
Marital Status	Single	262	78.2%
	Married	25	7.5%
	Widow	3	0.9%
	Girl/Boyfriend	44	13.1%
	Divorced	1	0.3%
	Total	**335**	**100%**
Ethnicity/Race	African/Black	309	92.2%
	Indian	8	2.4%
	White	14	4.2%
	Coloured	4	1.2%
	Total	**335**	**100%**
Student Status	Local students	262	78.2%
	International	73	21.8%
	Total	**335**	**100%**
Academic Level	Undergraduate	278	83%
	Postgraduate	57	17%
	Total	**355**	**100%**

4.4 PERCEIVED SUSCEPTIBILITY AND PERCEIVED THREAT OF HIV/AIDS

In response to the first objective of the study, which was to describe the perceived susceptibility and perceived threat of HIV/AIDS by UKZN students residing in a selected campus as perceived by students, Perceived susceptibility and perceived threat of HIV/AIDS was explored using a wide range of statements which were scored as displayed in figure 4.2. These questions were asked using a Likert Scale, and the results are as presented in Table 4.2. The minimum score was 12 while the maximum score was 28 and the mean was 21.39 (76.4%) with standard deviation (SD) equals to 3.185.

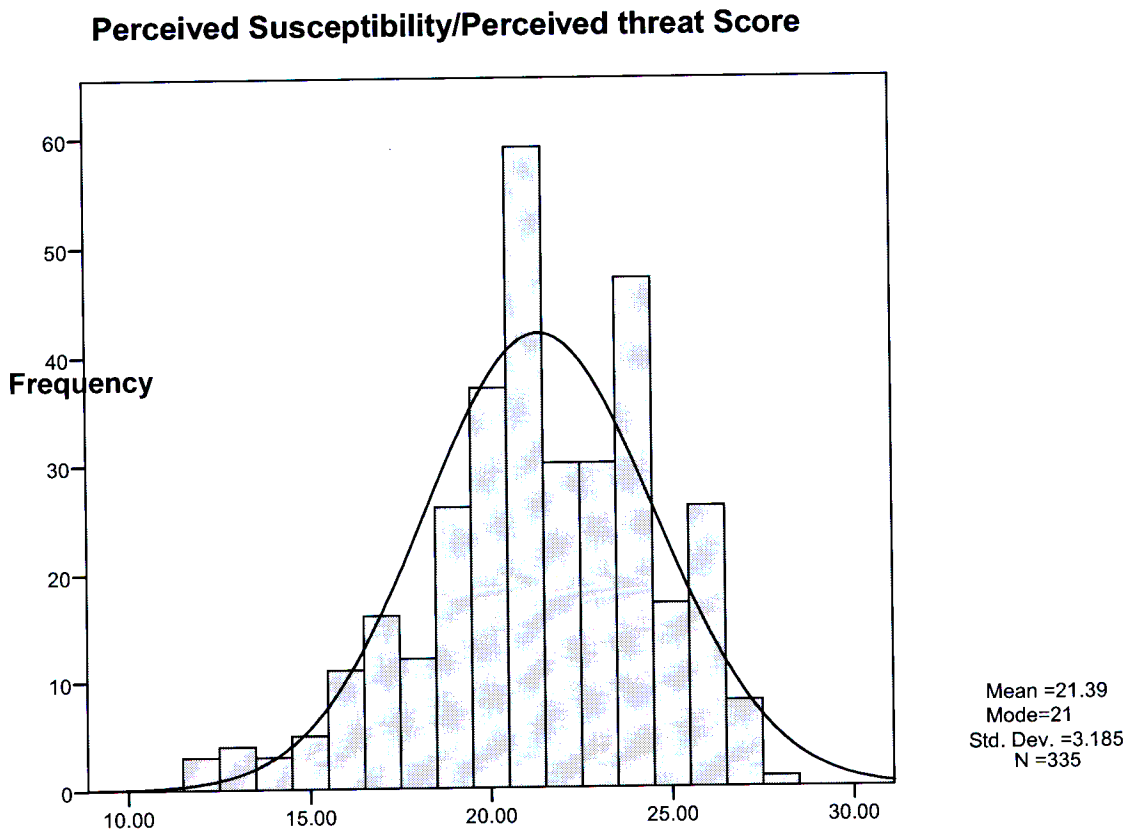

Figure 4.2: Perceived Susceptibility/threat of HIV/AIDS mean Score at the UKZN

The majority of 138 (41.7%) and 116 (34.9%) respondents were in agreement that they are concerned that they can get HIV/AIDS. Most of respondents were in agreement with the statement that HIV/AIDS is a serious problem in their community, with 175 (52.2%) who strongly agreed and 103 (30.7%) who agreed. The majority of 138 (41.7%) and 142 (42.9%) respondents respectively disagreed and strongly disagreed to the statement that HIV/AIDS medicines do more harm than good. Most of respondents, 52 (15.6%) and 251 (75.1%) respectively disagreed and strongly disagreed to the statement that only prostitutes and drug users get HIV/AIDS. The majority of 100 (30.7%) and 161 (49.4%) respondents respectively disagreed and strongly disagreed to the statement that HIV/AIDS was introduced by whites people as a way to control black Africans (Table 4.2).

4.4.1 Relationship between Demographic Variables and Perceived Susceptibility and Perceived Threat Score

On comparing gender, marital status and perceived susceptibility/perceived threat of HIV/AIDS, the following results were obtained:

4.4.1.1 Relationship between Gender and Perceived Susceptibility/Perceived Threat of HIV/AIDS Score

The t-test for equality of means for gender and perceived susceptibility and perceived threat score was performed. The *p*-value obtained was 0.576 with standard deviation (SD=3.37452) at the confidence interval (CI=95%) between -0.49095 to 0.88178. Therefore, there was no gender difference with regard to perceived susceptibility and

perceive threat of HIV/AIDS thus there was no relationship between the two mean score (Table 4.3).

Table 4.2: Summary of responses on perceived susceptibility and perceived threat of HIV/AIDS among students at the UKZN

Statements	Strongly agree	Agree	Disagree	Strongly disagree	Total
I am concerned that I could get HIV/AIDS.	138 41.6%	116 34.9%	43 13%	35 10.5%	**332** **100%**
HIV/AIDS is a serious problem in my community	175 52.2%	103 30.7%	32 9.6%	25 7.5%	**335** **100%**
Medicines for HIV/AIDS do more harm than good.	22 6.6%	27 8.2%	138 41.7%	142 42.9%	**331** **100%**
Only prostitutes and drug users get HIV/AIDS	16 4.8%	15 4.5%	52 15.6%	251 75.1%	**334** **100%**
The government is doing all it can to fight HIV/AIDS	45 13.6%	116 34.9%	113 34%	58 17.5%	**332** **100%**
HIV/AIDS was introduced by white people as a way to control black Africans.	27 8.3%	38 11.7%	100 30.7%	161 49.4%	**326** **100%**
The government is telling the truth about HIV/AIDS.	71 21.5%	145 44%	73 22.1%	41 12.4%	**330** **100%**

4.4.1.2 Relationship between Marital Status and Perceived susceptibility/Perceived threat score

The analysis of variance was performed as to establish the relationship between perceived susceptibility, perceived threat of HIV/AIDS and Marital status. The mean between groups was 11.670 at 4 degrees of freedom, and the mean within groups were 10.124 with 334 degrees of freedom at 95% Confidence Interval; the p-value was 0.332.

Therefore there was no relationship between marital status and perceived susceptibility/perceived threat of HIV/AIDS (Table 4.4).

Table 4.3 Relationship between perceived susceptibility score mean and gender

	t-test for Equality of Means					
	Significance (2-tailed)	Mean difference	Standard Error Difference	Standard Deviation	95% Confidence Interval of the Difference	
					Lower	Upper
Perceived susceptibility score	0.576	0.19542	0.34892	3.37452	-0.49095	0.88178

Table 4.4: Relationship between perceived susceptibility score mean and marital status at UKZN

Perceived susceptibility score	**ANOVA for Marital Status and Perceived Susceptibility score mean**				
	Sum of Squares	**Degrees of freedom (d.f.)**	**Mean Square**	**F**	**Significance (*p*-value)**
Between Groups	46.682	4	11.670	1.153	0.332
Within Groups	3340.870	330	10.124		
Total	3387.552	334			
95% Confidence Interval					

4.5 Knowledge of HIV/AIDS and Sources of information

In response to the second objective of the study which was to assess the knowledge of HIV/AIDS among UKZN students, the knowledge was explored using a wide range of 11 items which were scored as displayed in figure 4.3. These items were "Yes", "No" and "I don't know" answers; results are presented in table 4.5. One question was removed during the knowledge scoring, as it could have both answers, "Yes" and "No", that is "Can you get HIV from kissing?" The overall mean knowledge score was high, 82.22% with standard deviation (SD=15.199) (Figure 4.3).

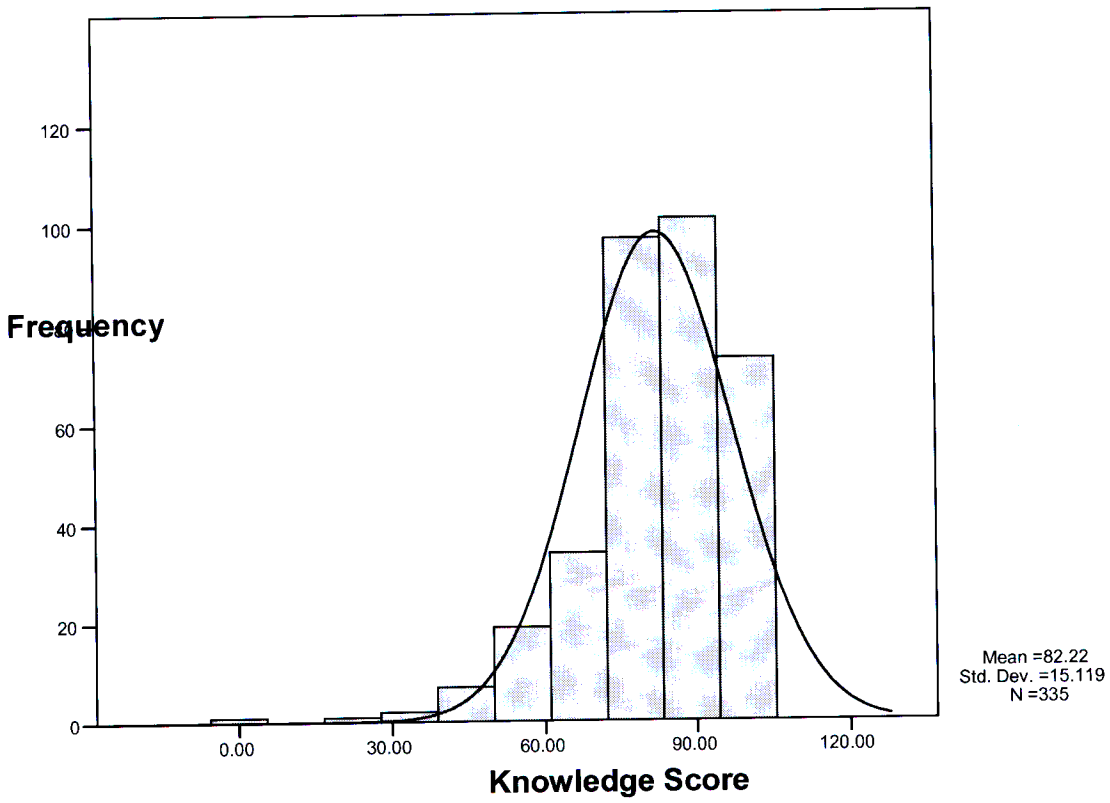

Figure 4.3: HIV/AIDS Knowledge Score among students at UKZN

The majority of 307 (92.2%) respondents knew that HIV can be transmitted from a person to another through body fluids. However, 68 (20.4%) respondents answered "No" to the question "Can you get HIV/AIDS by oral sex?" while 44 (13.2%) of the respondents said that they don't know. The majority of 265 (79.8%) respondents answered "No" to the question "Does washing after having sex protects from getting HIV?" and only 45 (13.6%) said that they don't know. Further more, 309 (92.8%) respondents answered "No" to the question "Can a person get rid of HIV/AIDS by having sex with a virgin?" Most of the respondents 275 (82.6%) knew that there is no cure for AIDS. Seventy (20.9%) respondents answered "Yes" to the question "Must a person have different sexual partners to get HIV/AIDS?" Fifty-six (16.8%) respondents said "No" to the question "Can a woman transmit HIV to the foetus?" and 19 (5.7%) respondents said that they don't know. The majority of 321 (96.4%) respondents answered "Yes" to the question "Does unsafe sex with one or more sexual partners run the risk of HIV infection?" The majority of 285 (85.6%) respondents answered "Yes" to the question "Have you ever known a person with HIV/AIDS?" (Table 4.5).

4.5.1 RELATIONSHIP BETWEEN MEAN KNOWLEDGE SCORE AND AGE OF RESPONDENTS

The mean age score was 22.9224 with standard deviation (SD=4.45939); the mean knowledge score was 4.1104 with standard deviation (SD=0.93327).

A Pearson correlation test was conducted to test the relationship between knowledge score and the age of respondents. The Pearson Correlation value obtained was 0.181. Therefore, there was no correlation between age and the knowledge (Table 4.6).

Table 4.5: Summary of responses on knowledge of HIV/AIDS among students at UKZN

Statements	Yes	No	I don't know	Total
HIV is transmitted from one person to another through body fluids (blood, semen, vaginal fluids and breast milk)	307 92.2%	25 7.5%	1 0.3%	**333** **100%**
Can you get HIV from kissing?	87 26.1%	224 67.3%	22 6.6%	**333** **100%**
Can you get HIV by oral sex?	221 66.4%	68 20.4%	44 13.2%	**333** **100%**
Does washing after having sex protects from getting HIV?	22 6.6%	265 79.8%	45 13.6%	**332** **100%**
Can a person get rid of HIV/AIDS by having sex with a virgin?	16 4.8%	309 92.8%	8 2.4%	**333** **100%**
Is there a cure for AIDS?	25 7.5%	275 82.6%	33 9.9%	**333** **100%**
Must a person have different sexual partners to get HIV/AIDS?	70 20.9%	257 77.2%	6 1.8%	**333** **100%**
Can a woman transmit the HIV to the fetus/unborn child?	258 77.5%	56 16.8%	19 5.7%	**333** **100%**
Do Sexually Transmitted Infections (STIs) increase the risk of HIV infection?	266 80.1%	30 9%	36 10.7%	**332** **100%**
Does unsafe sex (without condom) with one or more partners run the risk to contract HIV?	321 96.4%	12 3.6%	0 0%	**333** **100%**
Have you ever known a person with HIV/AIDS?	285 85.6%	46 13.8%	2 0.6%	**333** **100%**

Table 4.6: Correlation between knowledge score and age among students at UKZN

		Age of respondents	Knowledge	Mean	Standard Deviation
Age of respondents	Pearson Correlation	1	0.073	22.9224	4.45939
	Significance (2-tailed)		0.181		
	Total	335	335		
Knowledge	Pearson Correlation	0.073	1	4.1104	0.93327
	Significance (2-tailed)	0.181			
	Total	335	335		

4.5.2 Relationship between gender and knowledge

A t-test was conducted to compare gender and the knowledge score. The mean difference between gender and knowledge score was 0.14915 whereas the standard deviation 0.87326 at 95% Confidence Interval between [-0.5144 to 0.34973]; the p-value was 0.145. Therefore, there was no difference in knowledge of HIV/AIDS between females and males (Table 4.7).

Table 4.7: Relationship between gender and knowledge score mean among students at UKZN

	t-test for Equality of Means					
	Mean difference	Std. Error Difference	Significance (2-tailed)	Std. Deviation	95% Confidence Interval of the Difference	
					Lower	Upper
Knowledge	0.14915	0.10197	0.145	0.87326	-0.5144	0.34973

4.5.3 Sources of information

The most common source of information was the media as indicated by 163 (49%), followed by lectures as indicated by 53 (16%), while 43 (13%) respondents gained information from health care providers; 32 (9.6%) from friends; 28 (8.4%) from newspapers and books; and 13 (4%) from peer educators (Figure 4.4).

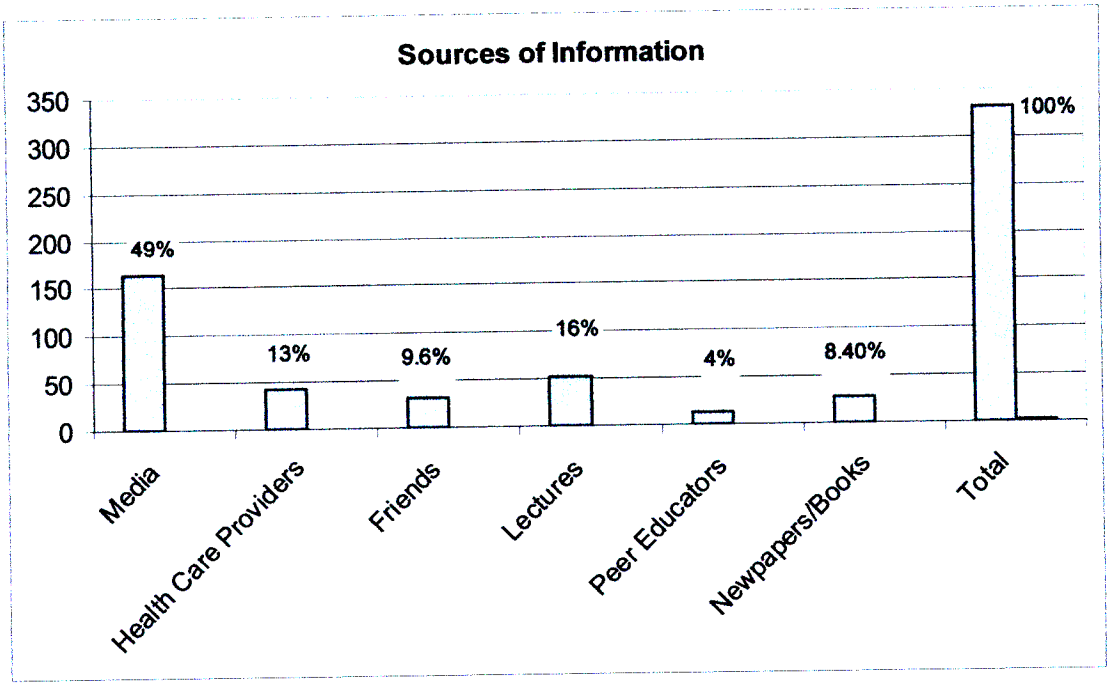

Figure 4.4: Sources of Information among students at UKZN

4.6 SEXUAL EXPERIENCES AND RISKY SEXUAL BEHAVIORS

In addressing the third objective of the study, which was to describe the risky sexual behavior for HIV infection among UKZN students, risky sexual behaviors were described using a wide range of questions; results are presented in table 4.8 and table 4.9. HIV Risk Index Score was calculated as displayed in the figure 4.5. HIV Risk Index used in the study by Simbanyi et al. (2005) was adopted. The minimum HIV Index score was zero, the maximum score was one, and the mean was 0.78 (78%) (Figure 4.5).

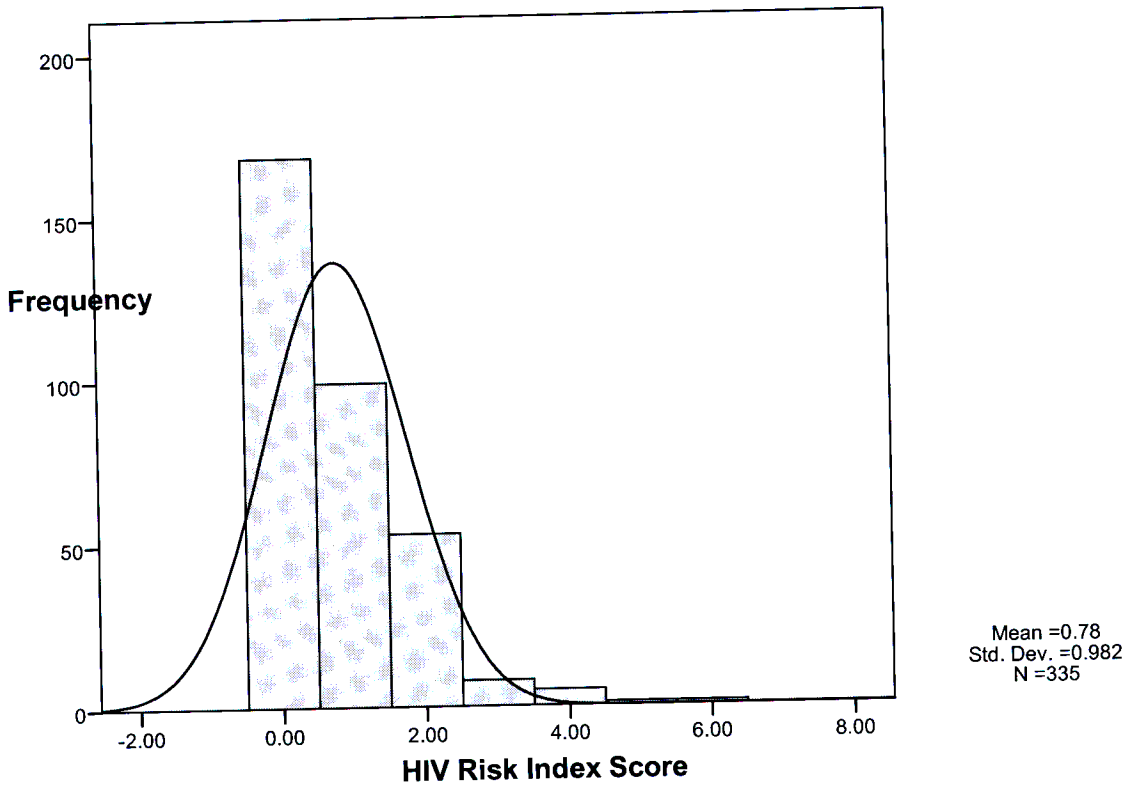

Figure 4.5: HIV Risk Index among Students at UKZN

4.6.1 Sexual activity

The majority of 241 (72.80%) respondents were sexually active, and 90 (27.2%) were not sexually active (Figure 4.6).

4.6.2 Number of sexual partners

The majority of 220 (86.3%) respondents had one sexual partner, 35 (13.7%) had more sexual partners at the time of data collection. A majority of 177 (65.8%) respondents had

one sexual partner, and 92 (34.2%) had more than one during the last 12 months (Table 4.8).

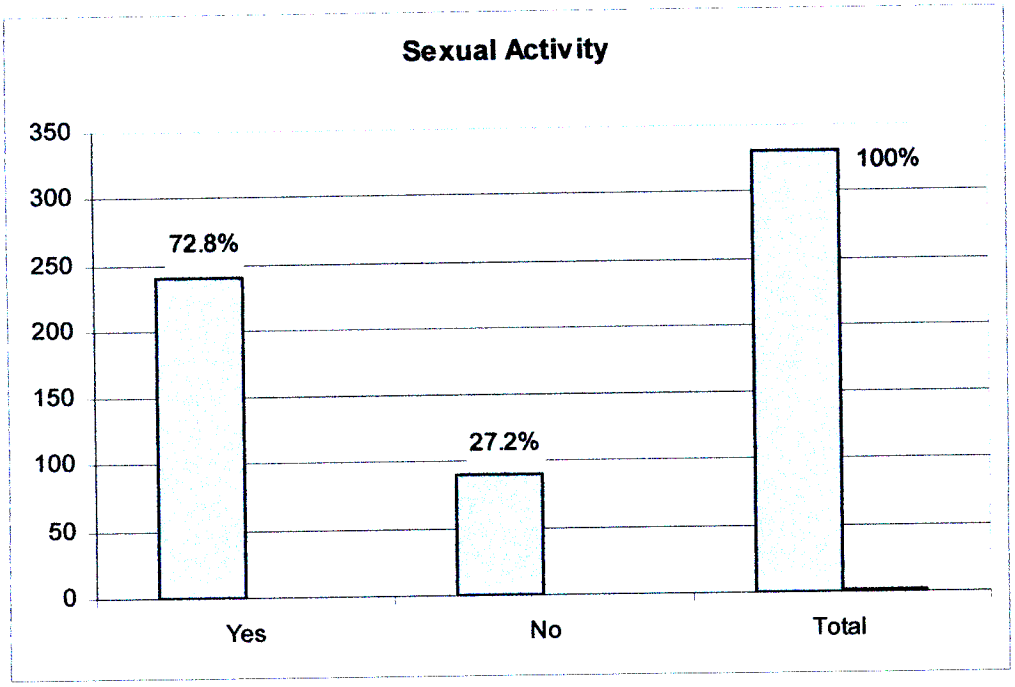

Figure 4.6: Sexual activity among students at UKZN

Table 4.8: Number of sexual partners among students at UKZN

Questions	One	More than one	Total
How many sexual partners do you have currently?	220 86.3%	35 13.7%	**255** **100%**
How many sexual partners have you had sex with in the past 12 months?	177 65.8%	92 34.2%	**269** **100%**

4.6.3 Other sexual experiences and risk sexual behaviors

Table 4.9 summarizes other sexual experiences and risk sexual behaviors. The majority of 325 (97.9%) respondents have never shared needles to inject or shooting-up drugs and 323 (98.2%) respondents reported that they have never had a sexual partner who used or who they think have used needles to shoot-up drugs. The majority of 296 (90.2%) respondents have never had Sexually Transmitted Infections (STIs); 32 (9.8%) respondents reported that they had STIs. The majority of 312 (94.3%) respondents reported that they have never been given money, drugs or a place to stay in exchange for sex, and the majority of 300 (90.9%) respondents reported that they have never given money, drugs or a place to stay in exchange for having sex. Seventy-four (22.4%) respondents reported that they have ever been forced to have sex when they don't want (Table 4.9).

4.6.4 Relationship between perceived susceptibility/perceived threat of HIV/AIDS and Risky Sexual behavior

A correlation coefficient was conducted to test the relationship between perceived susceptibility and perceived threat of HIV/AIDS score and HIV Risk Index. As the results are shown in table 4.10, the Correlation coefficient was statistically significant (0.893), indicating that there was correlation between perceived susceptibility and perceived threat of HIV/AIDS and risky sexual behaviors.

Table 4.9: Summary of other sexual experiences and risk sexual behaviors of students at UKZN

Questions	Yes	No	Total
Have you ever shared needles to inject/shoot-up drugs?	7 2.1%	325 97.9%	**332** **100%**
Have you had a sex partner who you think used needles to shoot-up drugs?	6 1.8%	323 98.2%	**329** **100%**
Have you had a sexual Infection (STI) such as Syphilis, Gonorrhea, or Herpes?	32 9.8%	296 90.2%	**328** **100%**
Has someone ever given you money, drugs, or a place to stay in exchange for sex?	19 5.7%	312 94.3%	**331** **100%**
Have you ever given someone money, drugs or a place to stay in exchange for having sex with you?	30 9.1%	300 90.9%	**330** **100%**
Has someone ever forced you to have sex when you did not want to, including when you were a child?	74 22.4%	257 77.6%	**331** **100%**

Table 4.10: Correlations between perceived susceptibility and perceived threat of HIV/AIDS score and HIV Risk Index Score

			HIV Risk Index	**Perceived Susceptibility score**
Spearman's rho	HIV Risk Index	Correlation Coefficient	1.000	0.007
		Significance (2-tailed)		0.893
		Total	335	335
	Perceived Susceptibility score	Correlation Coefficient	0.007	1.000
		Significance (2-tailed)	0.893	
		Total	335	335

4.6.5 Relationship between Knowledge Score and HIV Risk Index Score

As it appears in the table below, the correlation coefficient was conducted to test the relationship between Knowledge Score and HIV Risk Index Score. Results showed that there was no statistically significant difference between the two variables (0.008), indicating that there was no correlation between knowledge and Risky sexual behaviors (Table 4.11)

Table 4.11: Correlations between Knowledge Score and HIV Risk Index Score

			HIV Risk Index	**Knowledge**
Spearman's rho	HIV Risk Index	Correlation Coefficient	1.000	-0.145
		Significance (2-tailed)		0.008
		Total	335	335
	Knowledge	Correlation Coefficient	-0.145	1.000
		Significance (2-tailed)	0.008	
	Total		**335**	**335**

4.7 AWARENESS AND UTILIZATION OF HIV/AIDS PREVENTION METHODS

The following are the results of the awareness of on-campus HIV/AIDS prevention methods and their utilization.

4.7.1 Awareness of HIV/AIDS Prevention Methods

The fourth objective of the study was to assess the awareness of HIV/AIDS prevention methods among UKZN students. Most of respondents were aware of Voluntary Counseling and Testing (VCT), 197 (58.8%); free condoms, 87 (26%); and the Wellness Program, 26 (7.8%). Further more, those who were aware of Peer Education Program made up only 13 (3.9%), and Anti Retroviral Therapy (ART), 4 (1.2%). However, eight (2.3%) respondents did not report any HIV/AIDS Prevention methods they were aware of (Figure 4.7).

4.7.2 Utilization of on-campus HIV/AIDS prevention methods

To respond to the fifth objective of the study, which was to assess the utilization of on-campus HIV/AIDS prevention methods by students at the UKZN, the respondents were asked to report the one they have utilized. The most utilized on-campus HIV/AIDS Prevention methods were free condoms as indicated by 146 (43.58%) respondents followed by VCT as indicated by 127 (37.91%) respondents. The least utilized preventive methods were the Wellness Programme reported by 16 (4.78%), Peer Education Programme reported by 7 (2.09%) respondents, and ART reported only by 2 (0.6%) respondents (Figure 4.8).

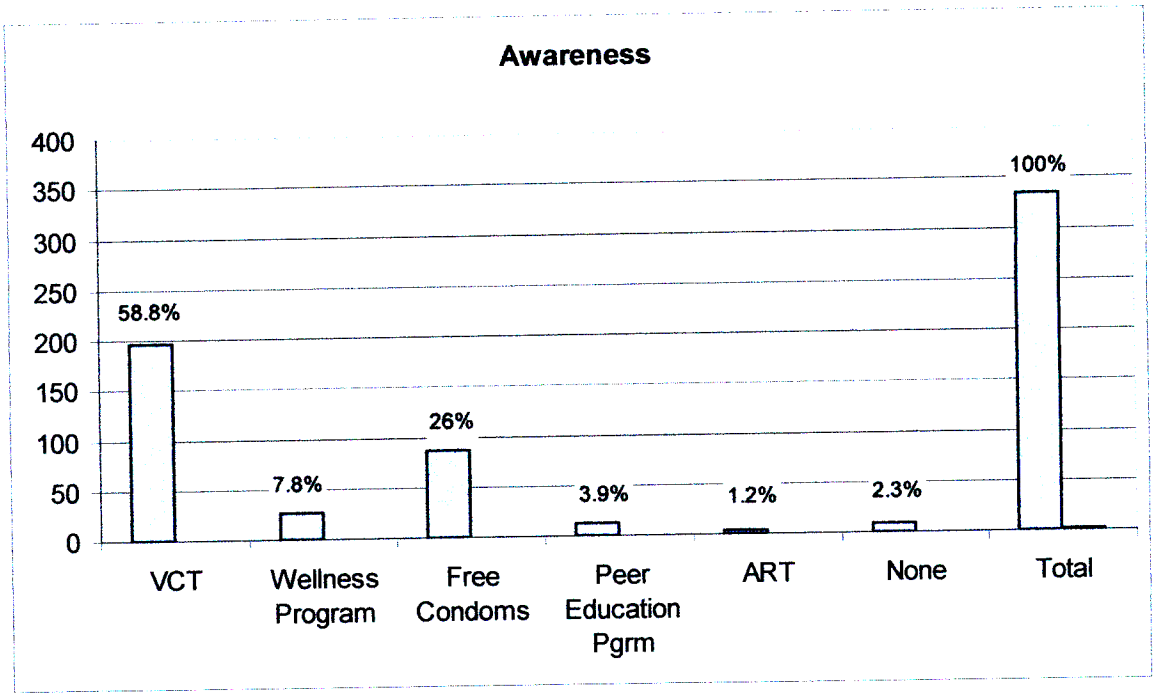

Figure 4.7: Awareness rates of HIV/AIDS prevention methods among UKZN students

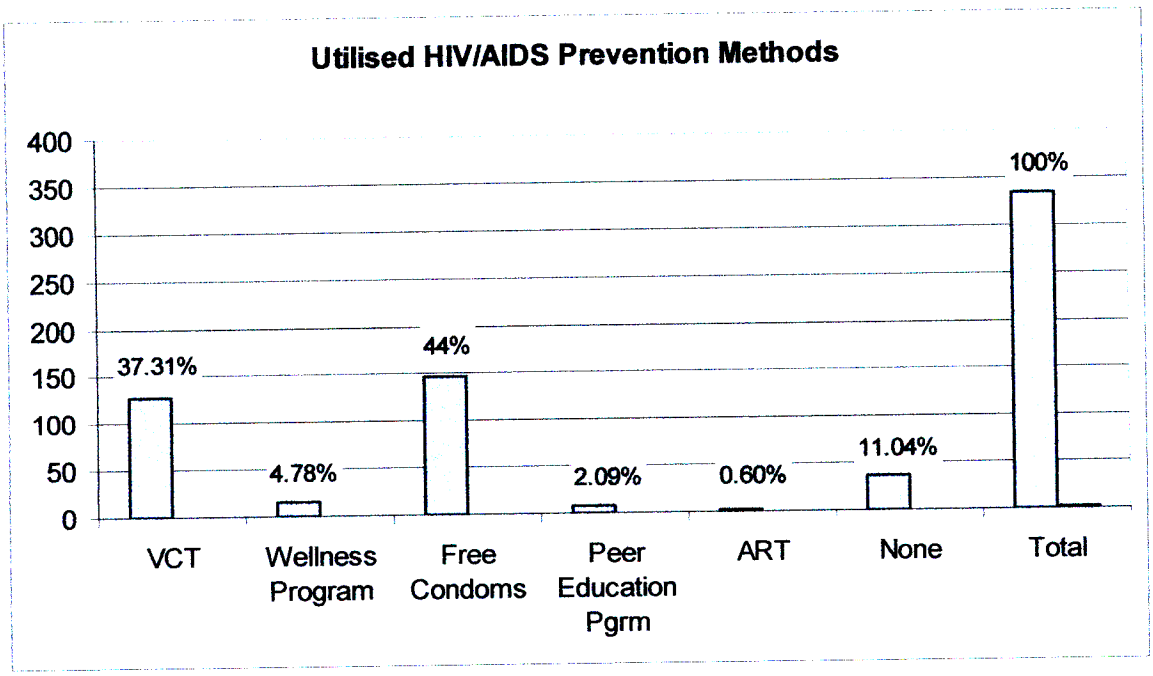

Figure 4.8: Utilization rates of HIV prevention methods among student at UKZN

4.7.3 Relationship Between Awareness and HIV/AIDS Prevention Methods Utilization

To establish the relationship between awareness and HIV/AIDS prevention methods, each prevention method was given the following answers: "Yes" with one max and "No" with zero max. A Chi-square test was conducted to compare awareness and HIV/AIDS prevention methods utilization (all together), and the results showed that the Chi-Square ($\chi 2$) value was 5.838, with *p*-value 0.047. Therefore, there was statistically significant difference between awareness and HIV/AIDS prevention methods utilization (Table 4.12).

Table 4.12: Crosstabulations of awareness and Utilization of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Awareness of on-campus HIV prevention Methods		**Total**	**Pearson's Chi-Square ($\chi 2$ Value)**	***p*-value at 95%Confidence Interval**
		No	Yes			
Utilized Campus HIV/AIDS Prevention Methods	No	3 8.1%	34 91.9%	37 100%	5.838	0.047
	Yes	5 1.7%	293 98.3%	298 100%		
Total		8 2.4%	327 97.6%	335 100%		

4.7.4 Relationship between Socio-demographic variables and HIV/AIDS Prevention Methods Utilization

The Chi-square test was carried out to test the relationship between socio-demographics and HIV/AIDS prevention methods utilization, and the results are indicated below.

4.7.4.1 Crosstabulations between gender and Utilization of On-Campus HIV/AIDS Prevention Methods

The Chi-square test was conducted to compare gender and Utilization of On-Campus HIV/AIDS Prevention Methods. The results showed that The Chi-Square ($\chi 2$) value was 4.489, and the *p*-value 0.344 at 95%CI. Therefore, there was no relationship between the two variables (Table 4.13).

4.7.4.2 Crosstabulations between Marital Status and Utilization of On-Campus HIV/AIDS Prevention Methods

A Chi-Square test was conducted to test the relationship between marital status and HIV/AIDS prevention methods utilization. Results showed that the Chi-square ($\chi 2$) value was 13.838, and the *p*-value was 0.611. There was no relationship between Marital Status and HIV/AIDS Prevention method utilization, thus there was no statistically significant difference between the two variables. However, married respondents were more likely to use VCT than single respondents, 16 (66.7%) versus 96 (41.7%) respectively. Conversely single respondents were more likely to use condoms that married respondents, 114 (49.6% versus 6 (25.0%) respectively (Table 4.14).

Table 4.13: Crosstabulations of gender and Utilization of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Gender of respondents			Pearson's Chi-Square (χ2 Value)	*p*-value at 95%Confidence Interval
		female	male	Total		
Which one did you utilized?	VCT	75 47.2%	52 37.4%	127 42.6%	4.489	0.344
	Wellness Program	7 4.4%	9 6.5%	16 5.4%		
	Condoms	71 44.7%1	75 54%	146 49%		
	Peer Education Program	5 3.1%	2 1.4%	7 2.3%		
	ART	1 0.6%	1 0.7%	2 0.7%		
Total		159 100%	139 100%	298 100%		

4.7.4.3 Crosstabulations between Ethnicity and Utilization of On-Campus HIV/AIDS Prevention Methods

The Chi-Square to test the relationship between ethnicity and HIV/AIDS prevention methods utilization showed that the Chi-square (χ2) value was 15.822, and the p-value was 0.200. This indicates that there was no statistically significant relationship between ethnicity and HIV/AIDS Prevention methods. However, Indians used on-campus VCT more than Black, 5 (71.4%) versus 120 (43.6%) respectively, and white respondents did not used it at all. Inversely, whites used condoms at 100% (12), as compare to Black

respondents who used it at 47.3% (130) and Indian respondents who used it at 28.6% (2) (Table 4.15).

Table 4.14: Crosstabulations of Marital Status and Utilization of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Marital status						Pearson's Chi-Square (χ2 Value)	*p*-value at 95%Confidence Interval
		Single	Married	Widow	Girl/ Boy friend	Divorced	Total		
Which one did you utilized?	VCT	96 41.7%	16 66.7%	2 100%	13 31.7%	0 0%	127 42.6%	13.838	0.611
	Wellness Program	12 5.2%	2 8.3%	0 0%	2 4.9%	0 0%	16 5.4%		
	Condoms	114 49.6%	6 25%	0 0%	25 61.0%	1 100%	146 49%		
	Peers	6 2.6%	0 0%	0 0%	1 2.4%	0 0%	7 2.3%		
	ART	2 0.9%	0 0%	0 0%	0 0%	0 0%	2 0.7%		
Total		**230** **100%**	**24** **100%**	**2** **100%**	**41** **100%**	**1** **100%**	**298** **100%**		

4.7.4.4 Crosstabulations between Students' status and Utilization of On-Campus HIV/AIDS Prevention Methods

The Chi-Square to test the relationship between students' status and utilization of HIV/AIDS prevention methods showed that the Chi-square ($\chi 2$) value was 1.467, and the *p*-value was 0.832). There was no difference between local and international students regarding the use of on-campus HIV/AIDS Prevention methods, thus there is no statistically significant difference between the two variables (Table 4.16).

Table 4.15: Crosstabulations of Ethnic group and Utilized of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Ethnic/race group					**Pearson's Chi-Square ($\chi 2$ Value)**	***p*-value at 95%CI**
		African / Black	Indian	White	Coloured	Total		
Which one did you utilized?	VCT	120 43.6%	5 71.4%	0 0%	2 50%	127 42.6%	15.822	0.200
	Wellness Program	16 5.8%	0 0%	0 0%	0 0%	16 5.4%		
	Condoms	130 47.3%	2 28.6%	12 100%	2 50%	146 49%		
	Peers	7 2.5%	0 0%	0 0%	0 0%	7 2.3%		
	ART	2 0.7%	0 0%	0 0%	0 0%	2 0.7%		
Total		**275** **100%**	**7** **100%**	**12** **100%**	**4** **100%**	**298** **100%**		

4.7.4.5 Crosstabulations between Academic level and Utilization of On-Campus HIV/AIDS Prevention Methods

The Chi-Square to test the relationship between academic level and utilization of HIV/AIDS prevention methods showed that the chi-square ($\chi 2$) value was 2.702 and the *p*-value was 0.609). There was no relationship between Student's academic level and utilization of HIV/AIDS Prevention methods, since there is no statistically significant difference (Table 4.17).

Table 4.16: Crosstabulations of Students' Status and Utilization of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Student Status			**Pearson's Chi-Square ($\chi 2$ Value)**	***p*-value at 95%CI**
		Local Students	International students	Total		
Which one did you utilized?	VCT	98 41.7%	29 46%	127 42.6%	1.467	0.832
	Wellness Program	12 5.1%	4 6.3%	16 5.4%		
	Condoms	118 50.2%	28 44.4%	146 49%		
	Peers	5 2.1%	2 3.2%	7 2.3%		
	ART	2 9%	0 .0%	2 .7%		
Total		235 100%	63 100%	298 100%		

Table 4.17: Crosstabulations of Academic level and Utilization of On-Campus HIV/AIDS Prevention Methods by students at UKZN

		Student's Academic level			Pearson's Chi-Square ($\chi 2$ Value)	*p*-value at 95%CI
		Under graduate	Post graduate	Total		
Which one did you utilized?	VCT	105 42.9%	22 41.5%	127 42.6%	2.702	0.609
	Wellness Program	14 5.7%	2 3.8%	16 5.4%		
	Condoms	117 47.8%	29 54.7%	146 49%		
	Peers	7 2.9%	0 0%	7 2.3%		
	ART	2 0.8%	0 0%	2 0.7%		
Total		**245** **100%**	**53** **100%**	**298** **100%**		

4.7.5 ABC utilization

Also the respondents were asked to report on their utilization of ABC (Abstinence, Be faithful, use Condom) prevention method, on and off-campus (in general). One hundred sixty-two (49.5%) respondents used condom, 86 (26.3%) reported that they abstain, and 79 (24.2%) reported themselves to be faithful (Table 4.18).

Table 4.18: ABC Utilization by students at UKZN

What is your protective measure against HIV/AIDS?	Frequency	Percentage
Abstinence	86	26.3%
Being Faithful	79	24.2%
Condom usage	162	49.5%
Total	**327**	**100%**

4.7.6 HIV Testing and other HIV/AIDS prevention methods utilized

One hundred ninety-two (67.9%) respondents have used condom at their last sexual intercourses, 91 (32.1%) respondents did not use it. A majority of 249 (76.4%) respondents have been tested for HIV, 76 (23%) respondents have never been tested for HIV. The majority of 283 (86.3%) respondents reported that they plan to be tested, and 45 (13.7%) reported that they don't plan to be tested. The majority of 316 (95.2%) respondents reported that free HIV testing is available to them, only 16 (4.8%) reported that it is not available to them (Table 4.19).

Table 4.19: HIV testing and STIs diagnosis among students at UKZN

Questions	Yes	No	Total
Did you or your sexual partner use condom during the most recent sexual intercourse?	192 67.9%	91 32.1%	**283** **100%**
Have you ever been tested for HIV?	249 76.4%	76 23%	**331** **100%**
Do you plan to get tested again?	283 86.3%	45 13.7%	**328** **100%**
Is free HIV testing available to you?	316 95.2%	16 4.8%	**332** **100%**

4.8 RELATIONSHIPS BETWEEN DEMOGRAPHIC VARIABLES AND HIV TESTING

The following are the results of the Chi-square test to test the relationship between gender and HIV testing and condom use.

4.8.1 Relationships between gender and HIV testing

The table below shows that 56.1% of female respondents have been tested for HIV as compared to 43.9% of males. The chi-Square ($\chi 2$) value was 3.367 and the *p*-value was 0.052) at 95% CI. There was no statistically significant relationship between HIV testing and gender (Table 4.20).

Table 4.20: Relationships between gender and HIV testing among students at UKZN

		Have you ever been tested for HIV?		**Pearson's Chi-Square ($\chi 2$ Value)**	***p*-value at 95%CI**
		Yes	No		
Gender of respondents	Female	56.1%	43.4%	3.367	0.052 (2-sided)
	Male	43.9%	56.6%		
Total N=331		100%	100%		

4.8.2 Relationships between gender and condom usage for the last sexual intercourse

As it appears in table 4.21, 50.8% of females against 49.2% of males have used condom at the very last sexual intercourse. The Pearson Chi-Square was conducted to test the relationship between gender and the use of condom at the last sexual intercourse. Results showed that the Chi-square ($\chi 2$) value was 1.623; the *p*-value was 0.203 at 95% Confidence Interval. There was no difference between condom usage between females and males.

Table 4 21: Relationships between gender and condom usage among students at UKZN

		Did your sexual partner use condom the very last sexual intercourse?		**Pearson Chi-Square ($\chi 2$ Value)**	**p-value at 95%CI**
		Yes	No		
Gender of respondents	Female	50.8%	58.9%	1.623	0.203 (2-sided)
	Male	49.2%	41.1%		
Total N=331		100%	100%		

4.9 PERCEIVED BARRIERS, BENEFITS AND SELF-EFFICACY AND HIV/AIDS PREVENTION METHODS UTILIZATION

In response to the sixth objective of the study, which was to describe factors associated with the use of existing on-campus HIV/AIDS Prevention methods, a wide range of statements were given with Strongly agree, agree, neutral, disagree, and strongly disagree

answers. Perceived barriers on abstinence, condom use, HIV testing, and Peer Education Program were score and displayed in figures 9; 10; 11 and 12 respectively. These questions were grouped as follows: questions related to abstinence, questions related to condom usage and questions related to Voluntary Testing. To score these, each of these questions were sub-grouped and the direction in which any question was asked was considered (Questionnaire, Section F). Results on these questions are presented in tables 12; 13; 14, and 15 respectively. Also this objective is covered throughout other responses in other sections of the questionnaire.

4.9.1 Perceived barriers and self-efficacy on Abstinence

The perceived barriers and self-efficacy minimum score value was one, the maximum was 20; and the mean was 12.06 (60.3%) (Figure 4.9).

The majority of 231 (69.8%) and 55 (16.6%) respondents respectively strongly agreed and agreed that abstinence is a way to protect oneself from getting HIV infection, 60 (18.2%) and 59 (17.9%) respectively strongly agreed and agreed that abstinence is not practical. One hundred and five (32.1%) and 67 (20.5%) respondents respectively strongly agreed and agreed that being faithful to one uninfected sexual partner protect oneself from getting HIV infection; and 95 (29.8%) and 144 (45.1%) respondents disagreed and strongly disagreed on the statement that it is difficult to be faithful to one's sexual partner (Table 4.22).

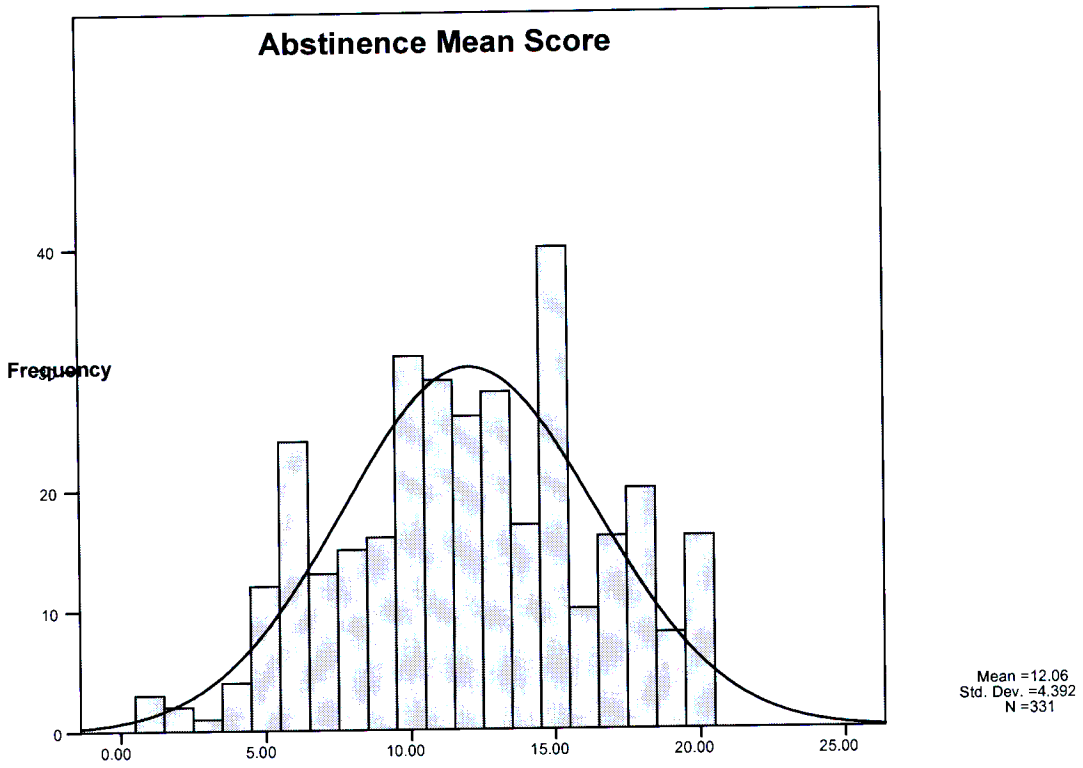

Figure 4.9: Abstinence and self-efficacy Score for abstinence

Table 4.22: Perceived barriers, perceived benefits and self-efficacy on Abstinence among students at UKZN

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Abstaining is a way of protecting oneself from getting HIV	231 69.8%	55 16.6%	16 4.8%	12 3.6%	17 5.1%	**331** **100%**
Abstinence is not practical for me	60 18.2%	59 17.9%	75 22.7%	53 16.1%	83 25.2%	**330** **100%**
Being faithful to one uninfected partner protects from getting HIV	105 32.1%	67 20.5%	71 21.7%	39 11.9%	45 13.8%	**327** **100%**
It is difficult to be faithful to my partners	15 4.7%	28 8.8%	37 11.6%	95 29.8%	144 45.1%	**319** **100%**

4.9.1.1 Relationship between perceived susceptibility/perceived threat and self-efficacy on abstinence

The perceived susceptibility and perceived threat mean score was 21.3881 against 12.0604 abstinence score. The Person correlation value was 0.057, at 95% confidence Interval. There was therefore no correlation between perceived susceptibility/perceived threat and self-efficacy on abstinence (Table 4.23).

Table 4.23: Correlation between perceived susceptibility/perceived threat and self-efficacy on abstinence

		Perceived Susceptibility Mean Score (p-value at 95%CI)	**Perceptions mean score for Abstinence (p-value with 95%CI)**	**Mean**	**Standard Deviation**
Perceived Susceptibility score mean	Pearson Correlation	1	0.105	21.3881	3.18471
	Significance (2-tailed)		0.057		
	Total	335	331		
Perceptions mean score for Abstinence	Pearson Correlation	0.105	1	12.0604	4.39172
	Significance (2-tailed)	0.057			
	Total	**331**	**331**		

4.9.2 Perceptions and self-efficacy on Condom usage

The minimum Perceptions and self-efficacy on Condom usage score was two, the maximum score was 35, and the mean was 23.47 (67%) with standard deviation (SD=6.38) (Figure 4.10).

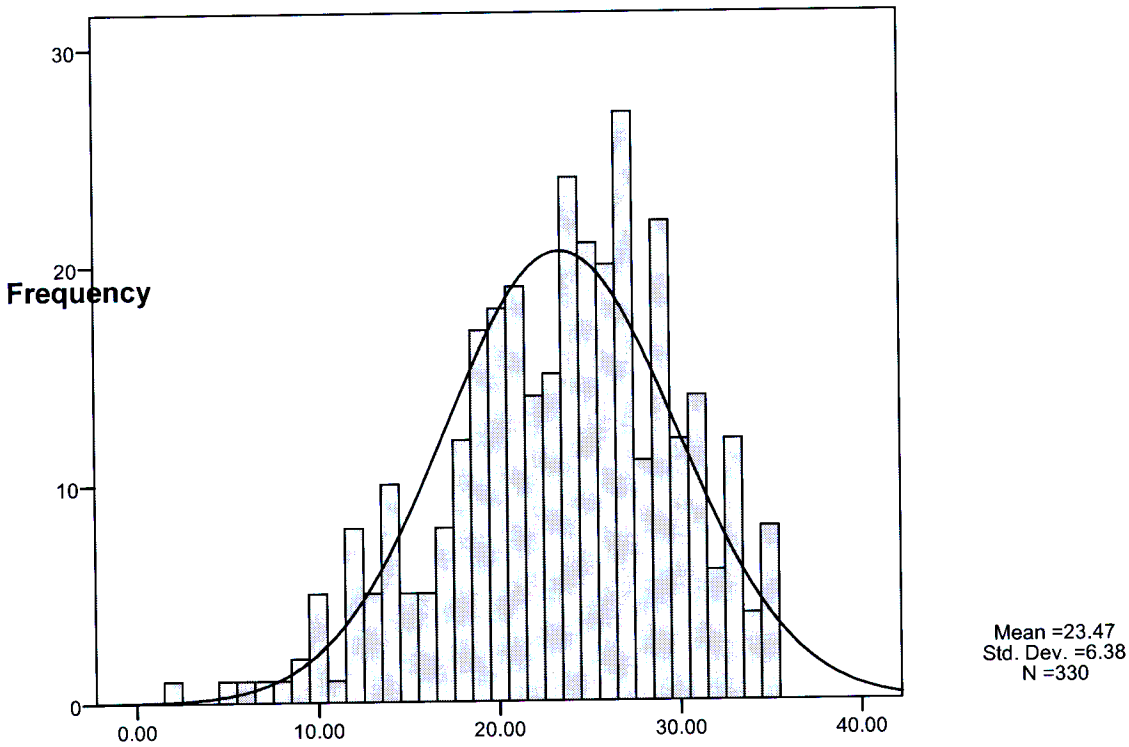

Figure 4.10: Mean Score for perceptions and self-efficacy on Condom usage among students at UKZN

Fourteen (4.4%) and 30 (9.5%) respondents were in agreement that they don't use condom because of trusting one's sexual partner. Forty-three 43 (13.7%) and equally 43 (13.7%) respondents were in agreement that condoms are unnatural. Also (6.2%) and 25

(8.2%) respondents have reported that their sexual partner don't like condom. Thirteen (4.2%) and 59 (18.9%) respondents respectively strongly agreed and agreed that condom decreases sexual pleasure, 29 (9.4%) and 20 (6.5%) respondents respectively strongly agreed and agreed that they are not able to negotiate condom usage with their sexual partner. The majority of 197 (60.8%) and 74 (22.8%) respondents respectively strongly agreed and agreed that condoms are easy to get, but 62 (19.4%) and 77 (24.1%) respectively strongly agreed and agreed that sometimes condom are not available (Table 4.24).

Table 4.24: Perceived barriers, perceived benefits and self-efficacy on Condom use among students at UKZN

Statements	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**	**Total**
I don't use a condom because I trust my partner	14 4.4%	30 9.5%	57 18.1%	75 23.8%	139 44.1%	**315** **100%**
Condoms are unnatural	43 13.7%	43 13.7%	66 21.1%	68 21.7%	93 29.7%	**313** **100%**
My partner doesn't like to use a condom	19 6.2%	25 8.2%	54 17.7%	92 30.2%	115 37.7%	**305** **100%**
Using condom decreases sexual pleasure	13 4.2%	59 18.9%	71 22.8%	75 24%	94 30.1%	**312** **100%**
I am not able to negotiate with my partner to use of a condom	29 9.4%	20 6.5%	46 15%	78 25.4%	134 43.6%	**307** **100%**
Condoms are easy to get	197 60.8%	74 22.8%	16 4.9%	14 4.3%	23 7.1%	**324** **100%**
Sometimes condoms are not available	62 19.4%	77 24.1%	44 13.8%	55 17.2%	82 25.6%	**320** **100%**

4.9.2.1 Relationships between perceived susceptibility and perceived threat score and self-efficacy on condom use

The mean score for perceived susceptibility and perceived threat was 21.3881 against 23.4667 for perceptions score on condom use. A Pearson correlation test was conducted to test the relationship between perceived susceptibility/perceived threat of HIV/AIDS and self-efficacy on condom use. As shown by the results, the Pearson correlation was 0.80 at 95% Confidence Interval. Therefore, there was Correlation between perceived susceptibility and perceived threat of HIV/AIDS and self-efficacy on condom and condom use (Table 4.25).

Table 4.25: Correlations between self-efficacy on condom and condom usage

		Perceived Susceptibility Mean Score (*p*-value at 95%CI)	**Perceptions on condom mean score (*p*-value with 95%CI)**	**Mean**	**Standard Deviation**
Perceived Susceptibility score mean	Pearson Correlation	1	0.96	21.3881	3.18471
	Significance (2-tailed)		0.80		
	Total	335	330		
Perceptions on condom mean score	Pearson Correlation	0.96	1	23.4667	6.38009
	Significance (2-tailed)	0.80			
	Total	335	330		

4.9.3 Perceptions and self-efficacy on HIV testing

The minimum Perceptions and self-efficacy on HIV testing score was five, and the maximum score was 40, while the mean was moderate to high, 26.37 (65.9%) with standard deviation (SD=5.419) (Figure 4.11).

Twenty-five (7.7%) and 47 (14.4%) respondents were in agreement that getting tested for HIV helps people feel better. Eleven (3.4%) and 18 (5.5%) strongly agreed and agreed that they don't know where to go for HIV testing. Forty-six (14.2%) and 29 (8.9%) respondents respectively strongly agreed and agreed that they would rather not know if they have HIV; 29 (8.9%) and 49 (15%) respondents respectively strongly agreed and agreed that they were not sure that their results should be kept confidential. Fifty-four (16.6%) and 46 (14.2%) respondents respectively strongly agreed and agreed that they would rather go in off-campus clinics for HIV testing, 36 (11%) and 50 (15.3%) respondents strongly agreed and agreed that the appointment given for HIV testing is too long. Eighty-one (24.8%) and 96 (29.4%) respondents respectively strongly agreed and agreed that testing for HIV helps keep people from getting HIV (Table 4.26).

4.9.3.1 Relationship between perceptions on VCT services and HIV testing

The mean difference between perceptions and self-efficacy on HIV services and having been tested for HIV infection was 0.73681. The t-test conducted to test the relationship between perceptions on VCT and HIV testing showed that the t-test value was 0.306 at 95% Confidence Interval [CI=-0.67685 to 2.15047] which indicates that there was no relationship between these two variables (Table 4.27).

4.9.3.2 Relationship between Perceptions/Self-efficacy on VCT services, Condoms and their utilization

On comparing perceptions/Self-efficacy on condoms and their usage, a t-test was carried out, and results showed that the mean difference between Condom Perceptions/Self-efficacy score and Condom usage was -0.725054; the p-value was 0.539 at 95% Confidence Interval [CI= -3.02576 to 1.58469]. There was no relationship between condom Perceptions/Self-efficacy and Condom usage (Table 4.28).

Also a t-test was conducted to test the relationship between perceptions/Self-efficacy on VCT services and their utilization. Results showed that the mean difference between VCT Perceptions/Self-efficacy score and HIV testing was -0.62331, the p-value was 0.537 at 95% Confidence Interval [CI=-2.60903 to 1.36241]. There was therefore no relationship between VCT Perceptions/Self-efficacy and HIV testing (Table 4.28).

4.9.4 Perceptions on Peer Education Programme

The minimum Perceptions on Peer Education Program score was 1, the maximum was 15, and the mean was very low, 5.43 (36.2%) with standard deviation (SD=3.24) (Figure 4.12).

The majority of 82 (25.1%) and 86 (26.3%) respondents respectively strongly agreed and agreed that Peer Education Program is not well known, 37 (11.3%) and 51 (15.6%) respondents respectively strongly agreed and agreed that they don't consult Peer Education Program because it is not helpful. Seventy (21.5%) and 84 (26.8%)

respondents respectively strongly agreed and agreed that they would contact a Health care provider rather than a peer educator (Table 4.29).

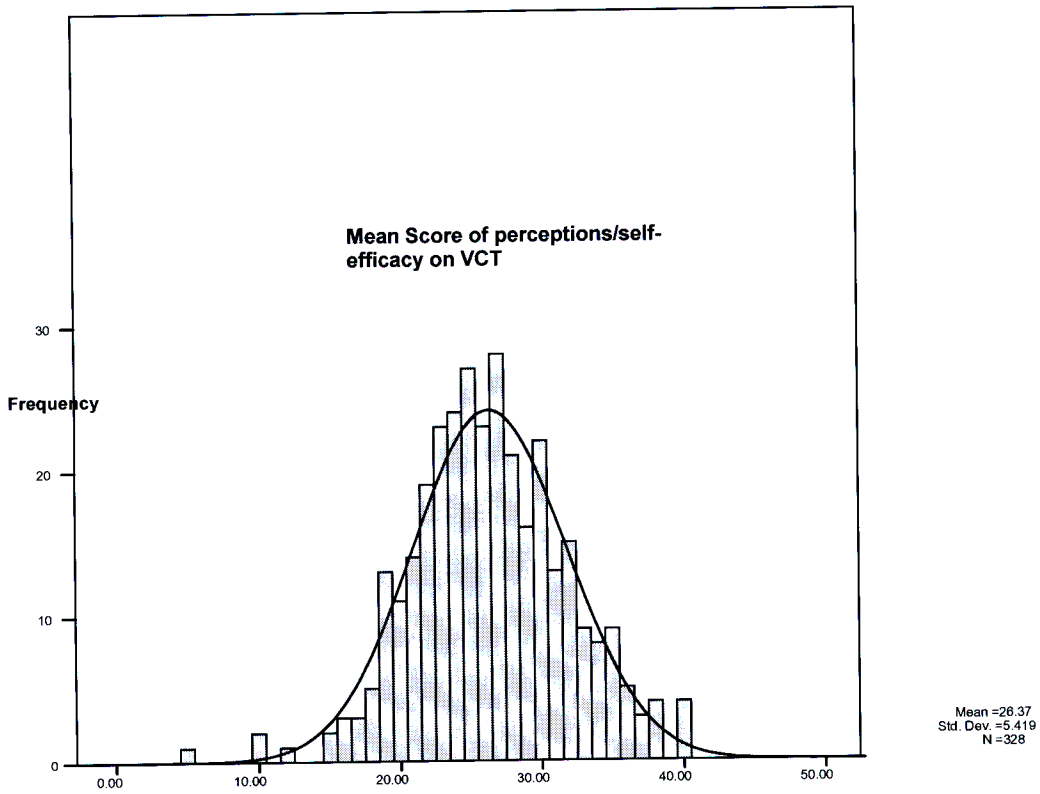

Figure 4.11: Perceptions and self-efficacy Score for VCT among students at UKZN

Table 4.26: Perceptions on VCT among students at UKZN

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Getting tested for HIV helps people feel better	119 36.5%	57 17.5%	78 23.9%	25 7.7%	47 14.4%	**326** **100%**
I don't know where I can go for HIV testing on-campus	11 3.4%	18 5.5%	22 6.7%	98 30%	178 54.4%	**327** **100%**
I would rather not know if I have HIV	46 14.2%	29 8.9%	51 15.7%	72 22.2%	127 39.1%	**325** **100%**
I am not sure that my results can be kept confidential if I am tested HIV positive	29 8.9%	49 15%	70 21.5%	74 22.7%	104 31.9%	**326** **100%**
I would rather go in off-campus clinic for HIV testing	54 16.6%	46 14.2%	81 24.9%	71 21.8%	73 22.5%	**325** **100%**
The appointment for HIV testing is too long	36 11%	50 15.3%	93 28.5%	75 23%	72 22.1%	**326** **100%**
People in my life would leave me if I have HIV	17 5.2%	34 10.4%	102 31.2%	72 22%	102 31.2%	**327** **100%**
People who test HIV positive should hide it from others	28 8.6%	26 8%	79 24.2%	71 21.7%	123 37.6%	**327** **100%**
Getting tested for HIV helps keep people from getting HIV	81 24.8%	96 29.4%	66 20.2%	44 13.5%	39 12%	**326**

Table 4.27: Relationship between perceived susceptibility and self-efficacy for VCT and HIV testing among students at UKZN

	t-test for Equality of Means					
	Significance (2-tailed)	Mean difference	Standard Error Difference	Standard Deviation	95% Confidence Interval of the Difference	
					Lower	Upper
Perceptions and self-efficacy on Getting tested mean score	0.306	0.73681	0.71857	5.44382	-0.67685	2.15047

Table 4.28: Relationship between VCT perceptions/Self-efficacy Score and VCT and Condom Usage among students at UKZN

t-test for Equality of Means							
	Utilized Campus HIV prevention	Total	Mean difference	Standard Deviation	Significance (2-tailed)	95% Confidence Interval	
						Lower	Upper
Condom perceptions score	No	33	-0.725054	7.49356	0.539	-3.02576	1.58469
	Yes	297		6.25468			
Getting tested perceptions score	No	32	-0.62331	6.20841	0.537	-2.60903	1.36241
	Yes	296		5.33513			

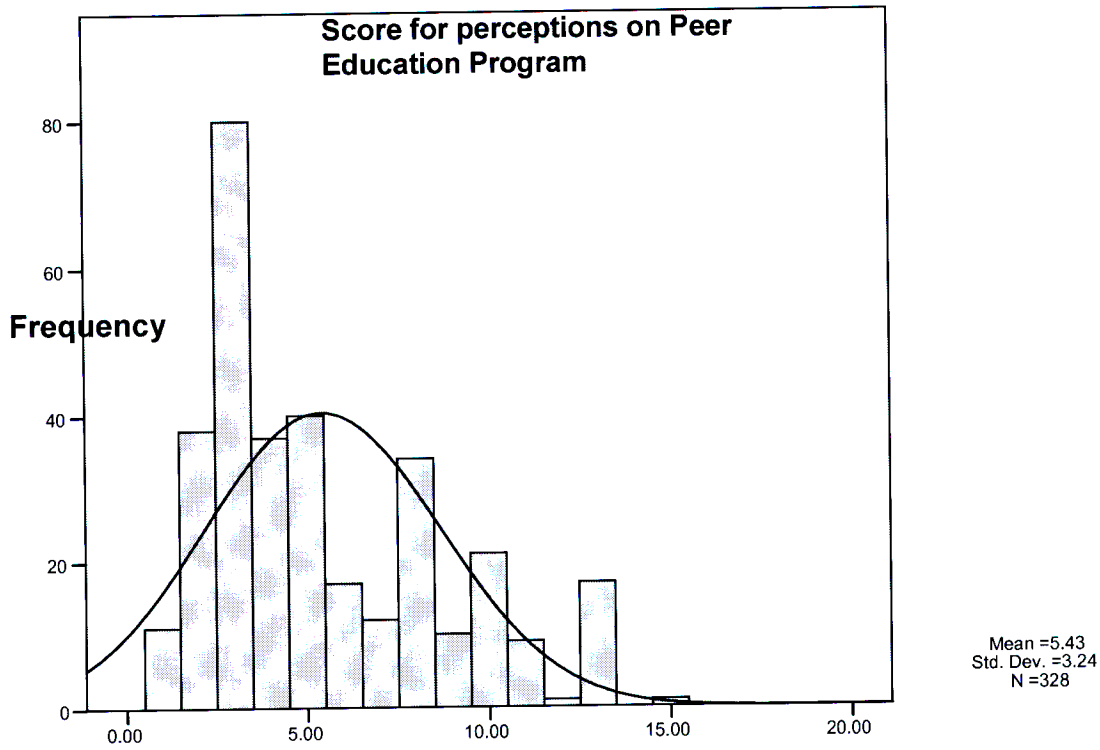

Figure 4.12: Mean Score for perceptions on Peer Education Program among students at UKZN

Table 4.29: Perceptions on Peer Education Programme among students at UKZN

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Peer education program is not well known	82 25.1%	86 26.3%	101 30.9%	35 10.7%	23 7%	**327** **100%**
I don't consult Peer Education Program because it is not helpful	37 11.3%	51 15.6%	131 40.2%	47 14.4%	60 18.4%	**326** **100%**
I would contact a Health care provider rather than a peer educator	70 21.5%	84 26.8%	91 28%	49 15.1%	31 9.5%	**325** **100%**

4.10 ENCOURAGING FACTORS TO THE USE OF HIV/AIDS PREVENTIVE METHODS

The most reported encouraging HIV preventive method is condom availability reported by 123 (38.4%); Voluntary Counseling and Testing (VCT) reported by 50 (15.6%) respondents; Peer education program reported by 35 (10.9%), and Wellness program reported by 30 (9.4%) respondents. Others included students' movements against HIV/AIDS reported by 19 (5.9%); including HIV/AIDS program in academic curriculum reported by 19 (5.9%); having more counselors reported by 15 (4.7%) respondents; open-days against HIV/AIDS reported by 15 (4.7%), and Pamphlets and flyers around the campus reported by 14 (4.4%) respondents (Table 4.30).

Table 4.30: Encouragement factors to the use of HIV/AIDS prevention methods among students at UKZN

Which of the following can encourage you to use HIV/AIDS preventive methods?	**Frequency**	**Percentage**
Condoms available	123	**38.4%**
Voluntary Counseling and Testing (VCT)	50	**15.6%**
Peer education Programme	35	**10.9%**
Wellness Programme	30	**9.4%**
Having more counselors	15	**4.7%**
Student movements against HIV	19	**5.9%**
Open-days against HIV/AIDS	15	**4.7%**
Pamphlets/Flayers around Campus	14	**4.4%**
Including HIV/AIDS into the academic curriculum	19	**5.9%**
Total	**320**	**100%**

4.11 BARRIERS TO THE USE OF HIV/AIDS PREVENTION METHODS

In response to the seventh objective of t his study, which was to determine potential barriers to the use of existing HIV/AIDS prevention methods as perceived by the UKZN students residing in a selected campus, respondents were asked to enumerate barriers to the use of on-campus HIV/AIDS prevention methods as they perceive them. As summarized in the table below, the most reported barriers are the lack of awareness, reported by 71 (31.6%) respondents; lack of privacy of the HIV testing venue, reported by 44 (19.6%) respondents; feeling uncomfortable towards peers reported by 35 (15.6%) respondents; Uninsured confidentiality and hear of being stigmatized reported by 21 (9.3%) respondents; long appointment for HIV testing reported by 18 (8%) respondents, and long line on the time of HIV testing reported by 12 (5.3%) respondents (Table 4.31).

The least reported barriers included the fact that peers are too young reported by 9 (4%) respondents; Poor counseling reported by 8 (3.6%) respondents, and unfriendly clinic staff reported by 7 (3.1%) respondents (Table 4.31).

4.12 SUGGESTIONS TO ENHANCE THE USE OF HIV/AIDS PREVENTIVE METHODS ON CAMPUS

To respond to the eighth objective of this study, which was to explore measures which can enhance the utilization of HIV/AIDS prevention methods as perceived by UKZN students residing in a selected campus, respondents were asked to give suggestions to the barriers they have identified. Suggestions given to improve the use of HIV/AIDS preventive methods from the most to the least cited are as follow: Need of a conducive

and private HIV testing venue, suggested by 65 (30.4%) respondents; advertising HIV/AIDS services to increase awareness suggested by 59 (27.6%) respondents; more counselors are needed to avoid appointments, so as to be tested the same day reported by 35 (16.4%) respondents. Also Residence-based HIV clubs reported by 18 (8.4%) respondents; Training peer educators on confidentiality reported by 13 (6.1%) respondents; Clinic staff to be friendly and have positive attitudes, reported by 11 (5.1%) respondents; Adult counselors to be employed reported by 11 (5.1%) respondents, and pamphlets and flyers around campus reported by only 2 (0.9%) respondents (Table 4.32).

Table 4.31: Reported barriers to the use of HIV/AIDS Prevention methods among students at UKZN

Reported barriers to the use of HIV/AIDS Preventive measures	**Frequency**	**Percentage**
Lack of privacy of the HIV testing venue	44	19.6%
Uninsured Confidentiality	21	9.3%
Long appointment for HIV testing	18	8%
Lack of awareness of HIV services	71	31.6%
Feeling uncomfortably towards peers as they know you	35	15.6%
Poor counseling	8	3.6%
Peers are too young	9	4%
Unfriendly clinic staff	7	3.1%
Long lines when HIV testing	12	5.3%
Total	**225**	**100%**

Table 4.32: Proposed suggestions to improve the use of HIV/AIDS Prevention methods by students at UKZN

Suggestions to the reported barriers	Frequency	Percentage
Advertising HIV/AIDS services to increase awareness	59	27.6%
Need a Conducive and private testing venue	65	30.4%
More Counselors needed to avoid appointments	35	16.4%
Residence-based HIV clubs	18	8.4%
Clinic staff to be friendly and have positive attitudes	11	5.1%
Peer-adult-led intervention	11	5.1%
Training peer educators on confidentiality	13	6.1%
Pamphlets and flyers around campus	2	0.9%
Total	**214**	**100%**

4.13 CONCLUSION

In this chapter, data were presented and analyzed. The description of the perceived susceptibility and perceived threat of HIV/AIDS was done, the students' knowledge of HIV/AIDS was assessed, the description of sexual behavior among students was done, and their awareness of on-campus HIV/AIDS Prevention Methods was assessed. The utilization of HIV/AIDS Prevention methods was assessed, factors associated with utilization were assessed, and potential barriers were identified as perceived by students. Also improving measures to the use of on-campus HIV/AIDS Prevention Methods were explored, as suggested by students at the UKZN. Each of the findings will be discussed and concluding remarks as well as recommendations will be provided in the next chapter.

CHAPTER 5
DISCUSSION OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

This chapter presents the discussion of findings, conclusion and recommendations. The main objective of this study was to explore factors influencing the use of on-campus HIV/AIDS prevention methods among UKZN students residing in a selected campus, as perceived by students. The discussion is guided by both the objectives of the study and the conceptual framework, the Health Belief Model (HBM).

5.2 DISCUSSION OF THE FINDINGS

The discussion focuses on socio-demographics, perceived susceptibility and perceived threat of HIV/AIDS, knowledge of HIV/AIDS and sources of information, sexual experiences and risk sexual behaviors, awareness and Utilization of on-campus HIV/AIDS prevention methods, perceived barriers, benefits and self-efficacy and the use of HIV/AIDS prevention methods. Encouraging factors to the use of on-campus HIV/AIDS preventive methods, perceived barriers to their use, and suggestions to enhance the use of HIV/AIDS prevention methods on campus are also discussed.

5.2.1 Socio-Demographic Characteristics of Respondents

The findings of this study showed that the majority of respondents were undergraduate students as they formed 78% of respondents. Also the majority of respondents were

single as they formed 78.2%, and the mean age which was 22.9 years old with standard deviation (SD=4.459). These findings on students' demographics were expected since the majority of students at the University of KwaZulu-Natal are undergraduate students who form 83% of the total number of about 39 000 students at the university as a whole (Uys, 2009). A majority of 309 (92.2%) respondents were black, 14 (4.2%) were whites, eight (2.4%) were Indian, and four respondents (1.2%) were coloured. These findings were expected as the majority of students residing on university residences are black (Dludla, 2009).

These findings also show that the target group of this study which was university students was appropriate as the respondents form the group the most exposed to contracting new HIV/AIDS (Jaspan, Bekker, Grant & Slack 2005). According to these authors young people are the most exposed group to HIV infections. In South Africa young people are the most affected group by HIV infections (Pettifor, Rees & Stephenson, 2004; Hartell, 2005), in which group the majority of university students fall under, and the same university students have been identified to be at high risk of contracting new HIV infections (CDC, 2007). The UNAIDS Report (2003) also reported that globally, with a particular concern to Africa and Asia, HIV infections were spreading quickly among young people aged between 14 and 24 years, and almost about half of all new HIV infections occur among youth under 25 years old (UNAIDS/WHO Report, 2005). According to Herida et al. (2007) in Eastern Europe and Central Asia, over a quarter of newly diagnosed cases of HIV in 2006 were among young people aged 15-24 years.

5.2.2 Perceived Susceptibility and Perceived Threat of HIV/AIDS

The first objective of the study was to describe the perceived susceptibility and perceived threat of HIV/AIDS by the UKZN students. The findings of this study showed that the overall mean of perceived susceptibility and perceived threat of HIV/AIDS was high, (76.4%), with standard deviation (SD=3.185). In addition 76.5% of participants were in agreement that they were concerned that they can get HIV/AIDS. However, their high perceived susceptibility to the HIV/AIDS did not correlate with the use of any HIV/AIDS prevention methods. This finding was different from the findings of the previous studies carried out in the former University of Durban-Westville which revealed that students did not perceive themselves as susceptible to contracting HIV/AIDS and their use of those prevention methods was very low (Stremlau & Nkosi, 2001; Uys, et al., 2001). The fact that the perceived susceptibility and perceived threat of HIV/AIDS was high in this study is an indication that students have started to get concerned about contracting the HIV infections. However, their use of HIV/AIDS prevention methods has yet to improve.

The findings of the present study however are similar to the ones reported in the study carried out by Iriyama, Nakahara, Jimba, Ichikawa and Wakai (2007) among adolescent male students in Kathmandu, Nepal which showed that students perceived themselves as susceptible to getting HIV infections. Another recent study conducted in Kenya showed that 74.3% of students perceived themselves as exposed to contracting HIV infections, based on their previous sexual experience. Furthermore the study showed an increase in perceived susceptibility of HIV among university students (Othero, Aduma & Opil,

2009). But throughout these studies, the lower utilisation of existing on-campus HIV/AIDS prevention methods is still a cause of concern.

5.2.3 Knowledge of HIV/AIDS and Sources of information

With regard to the second objective of the study which was to assess the knowledge of HIV/AIDS among UKZN students, the findings of this study showed that the overall mean knowledge of HIV/AIDS score among students was high, 82.22% with a standard deviation (SD=15.199). Again, the knowledge of HIV/AIDS was not correlated to the utilization of any of the HIV/AIDS prevention methods in this study. The study carried out at Stellenbosch University, South Africa by Cornelissen (2005) reported a low level of knowledge of HIV/AIDS among university students, with the mean equal of 59.23%. In addition the knowledge of HIV/AIDS was not related and the same students had reported to have utilized HIV/AIDS prevention methods minimally. In another study conducted among Chinese University students revealed that the knowledge of HIV/AIDS was low; with the mean knowledge score of 12.6 (63%) (Huang, Bova, Fennie, Rogers & Williams, 2005). Different findings reported in the study conducted at the former University of Durban-Westville by Uys et al. (2001) show that students had high knowledge of HIV/AIDS and the existence of their on-campus prevention methods, but with minimal use of these methods.

Despite the high mean knowledge of HIV/AIDS score in the current study, it was disheartening to find that students had significant misconceptions on HIV modes of transmission; the majority of 209 (92.8%) students reported that one can not get HIV by

having sex with a virgin, 8 (2.4%) respondents reported that they did not know. Seventy (20.9%) respondents reported that one must have different sexual partners to get HIV infections. Fifty-six (16.6%) reported that a woman can not transmit HIV to the fetus. Sixty (20.4%) respondents reported that one can not get HIV by having oral sexual intercourse. These findings suggest misconceptions about HIV modes of transmission.

However, the findings are in line with earlier studies which reported that university students have gaps in knowledge of HIV mode of transmission that need to be addressed through health education (Stremlau & Nkosi, 2001; Uys, et al., 2001). The study conducted in China among university students on knowledge of HIV/AIDS identified the same gaps in knowledge of HIV/AIDS (Lonn, Sahlholm, Maimaiti, Abdukarim & Anderson, 2007). The same gaps in knowledge of HIV/AIDS were identified in the study conducted in Kenya among university students (Othero et al., 2009). This suggests that even though there are strategies in place that focus on HIV/AIDS awareness and information giving, there is still a need to vigorously address issues relating to HIV/AIDS mode of transmission especially on issues relating to young people.

On comparing age and gender with the knowledge score, there was no correlation between age and knowledge, the Pearson Correlation value was (p-value=0.181). In terms of gender and the knowledge score, the t-test showed that the mean difference was 0.14915, standard deviation (SD=0.87326) at 95% Confidence Interval, the p-value was (p-value=0.145), which showed that there was no gender differences on knowledge of

HIV/AIDS. This is congruent with the findings of the study on factors for HIV/AIDS in Cape Town, South Africa carried out by Simbanyi et al. (2005) whereby there were no gender differences on knowledge of HIV/AIDS. However these findings differ from other study by Herida et al. (2007) which established gender differences in knowledge of HIV/AIDS whereby young males were the most knowledgeable of HIV/AIDS modes of transmission compared to their female counterparts.

One interesting finding was that most of respondents, 163 (49%) reported that they gained information from the media; 53 (16%) lectures; 43 (13%) health care providers; 32 (9.6%) from friends; 28 (8.4%) from newspapers and books; and 13 (4%) from peer educators. This finding suggests that the media seems to be effective in providing knowledge to the young people as they listen to radios and watch TV; however as peers they do not seem to share information relating to HIV/AIDS. This suggests that HIV/AIDS Prevention methods on-campus should be the main source of information on HIV/AIDS. This is congruent with the findings reported in the study on HIV/AIDS related knowledge, sources of information among students in Sudan by Nasir, Astrom, David and Ali (2008); where the sources of information on HIV/AIDS were mainly the media.

5.2.4 Sexual experiences and Risk sexual behaviors

The findings based on the third objective of the study, which was to describe the risky sexual behavior for HIV infection among UKZN students, showed that the majority of 241 (72.8%) respondents were sexually active. The overall HIV Risk Index Score was

0.78 (78%), which indicates a high HIV Index Score among students. A shocking finding was that students reported having more than one sexual partner, 92 (34.2%) during the last 12 months; and that they had not used a condom in their last sexual intercourse, (32.1%). It was also of concern that some of the participants had been forced to have sex (22.4%) as this was an indication of gender-based violence. Some participants 19 (5.7%) reported that they had been given money, drugs or a place to stay in exchange for sex. It was not clear whether this finding could be linked to poverty or just that students needed more money to match a university lifestyle. However, this finding needs to be explored further as it could be a contributory factor to the increase of HIV infection.

There was correlation between perceived susceptibility/perceived threat and risky sexual behaviors; the correlation coefficient was statistically significant (0.893). But, there was no correlation between knowledge of HIV/AIDS score and risky sexual behavior score; the correlation coefficient was not statistically significant (0.008). These findings indicate that risk sexual behaviors in favor of HIV/AIDS remain a cause of concern among university students, and need to be addressed to prevent new HIV infections.

These findings are congruent with the reported findings of previous studies which had established the relationship between low perceived susceptibility and perceived threat of HIV/AIDS and engaging in high risk sexual behavior in favor of HIV infections, especially among youth aged between 15-24 years (Peltzer et al., 2004; Pettifor et al., 2004; Visser, 2007). According to Bongaarts, Buettner, Heilin and Pelletier (2008), HIV/AIDS prevention methods have been the main weapon to fight the pandemic,

especially the prevention of new infections and provision of treatment to the needy. However, these authors highlight that youth and middle-aged population between 15-49 years old need particular attention because of risk sexual behaviors that are observed among them, so as to reverse the course of HIV/AIDS. In another study carried out by Jo Trepka et al. (2008) on high risk-sexual behaviors for HIV/AIDS in South Florida reported that risky sexual behaviors are still observed among students at high level. The study revealed that students indulged in risky sexual behaviors by having more than one sexual partner, in addition to inconsistent condom use, alcohol and drug-use among students, which are precursors of risky behaviors which lead to new HIV infections.

5.2.5 Awareness and Utilization of on-campus HIV/AIDS Prevention Methods

With regards to the fourth objective of the study, which was to assess the awareness of HIV/AIDS prevention methods among UKZN students, and the fifth objective of the study, which was to assess the utilization of on-campus HIV/AIDS prevention methods by students at the UKZN, results found that students were mostly aware of the Voluntary Counseling and Testing (VCT), 197 (58.8%) respondents; free condoms, 87 (26%) respondents.

Previous studies have reported that students' awareness and high knowledge of existing HIV/AIDS prevention methods were not related to their utilization (Ergene et al., 2005; Hansson et al., 2008; Fagen & Flay, 2009). This study showed different results where the most reported HIV/AIDS prevention methods by students were the most utilized; are free condoms, 146 (43.58%) and VCT, 127 (37.91%). These two HIV/AIDS prevention

methods were also the most known by students. These findings are in the line with the ones reported in the study carried out in the USA among university students which showed that students' awareness of HIV/AIDS Prevention methods was high and was related to the high utilization of those prevention methods (Davis, Sloan, MacMaster & Kilbourne, 2007).

The least utilized preventive methods were the Wellness Program, 16 (4.78%); Peer Education Program, 7 (2.09%); and ART, 2 (0.6%). As expected the findings showed that students did not utilize programmes that they were not aware of, for example only 26 (7.8%) respondents were aware of the wellness programme, hence the wellness programme together with the Peer educators, (3.9%), and Anti Retroviral Therapy (ART), (1.2%) respondents, were the least utilized methods. This was a disappointing finding as the Wellness Program and Peer education Program should be at the fore front of providing necessary information regarding HIV/AIDS prevention; however they were the least known and the less utilized. The comparison between awareness and the crude HIV/AIDS utilization have shown that there was a statistically significant relationship between the two variables; the Chi-Square (($\chi 2$) value was 5.838, with p-value (p=0.047).

These findings differ from the ones reported in the study conducted in Kenya among university students where it was reported that students were aware and knowledgeable of utilizing HIV/AIDS and its prevention methods, but were not necessarily using those prevention methods in proportion to their awareness and knowledge (Othero et al., 2009). However, the study conducted in the Eastern Cape, South Africa has shown that

awareness and availability of VCT services were among the factors encouraging HIV testing. Based on this information, it has been reported that urban women who were aware and who had access to those services were more likely to use them than rural women who had limited access and low awareness of HIV/AIDS services (Hutchinson & Mahlalela, 2007). Furthermore, the findings reported by the South African National HIV Prevalence, Incidence, Behavior and Communication Survey (2008), revealed that youth and adult South Africans from 15 years and above, the awareness of HIV status and HIV testing had doubled from 2005 to 2008; consequently, condom usage had increased at higher level up to 87.4% of males and 73.1% of females who reported that they used a condom at their last sexual intercourse (Shisana, et al., 2009). The current study showed lower percentages to the previous, only 67.9% of respondents used a condom during their recent sexual intercourse. It is still therefore a concern as students are still engaging in unprotected sex even though they are aware of contracting HIV infections.

The comparison between gender and Utilization of on-Campus HIV/AIDS Prevention Methods showed that there was no difference in findings between males and females as the Chi-Square ($\chi 2$ value) was 4.489, the *p*-value (p=0.344) at 95%CI. There was also no relationship between Marital Status and HIV/AIDS Prevention method utilization, with the Chi-Square (($\chi 2$ Value) equals to 13.838, and the p-value (p=0.611). There was also no relationship between Ethnic group and HIV/AIDS Prevention methods; the Chi-Square (($\chi 2$ Value) was 15.822, and the p-value (p=0.200). Furthermore, it appeared that there was no difference between undergraduate and postgraduate students in terms of

HIV/AIDS Prevention methods utilization, as the Chi-Square ($\chi 2$ Value) was 2.702, and the *p*-value (p=0.609).

Specifically, regarding condom use, there was no difference in findings between females and males on condom usage during their last sexual intercourse, as the Pearson Chi-Square was 1.623, the *p*-value (p=0.203) at 95% CI. There was no difference between females and males with regards to HIV testing; the Chi-Square value was 3.367, the *p*-value (p=0.052) at 95%CI. In this light, Health Beliefs Model (HBM) variables were not predictors of HIV/AIDS prevention methods utilization. Even though there was no significant statistical differences, results show that Indians used on-campus VCT more than Black, 5 (71.4%) versus 120 (43.6%) respectively; and White respondents did not use it at all. Inversely, white respondents used condoms at 100% (12), and black respondents used condoms only at 47.3% (130) and Indian respondents at 28.6%. These findings suggest very low condom use among black and Indian respondents, which is a concern in terms of HIV/AIDS prevention among university students.

These finding are congruent with the ones reported in the study conducted by Mbulo, Newman and Shell (2007) on factors contributing to the failure to use condoms among students in Zambia. All demographic characteristics, specifically gender, academic level, and religion were not predictors of the condom use. However, drinking behaviors were associated with lower condom use. In another study conducted by LaBrie, Schiffman and Earleywine (2002) among students in the USA, showed that there was no relationship between demographic variables and condom use and HIV testing; rather, drinking habits

and negative attitudes towards condom use, were related to condom use and HIV testing with gender differences where males tended not to use condoms as they become drunk compared to females.

These findings differ from the one reported recently in the study conducted among university students in the USA by Breny, Mugno, Sandra, Karina and Michele (2009) where there was relationship between demographic variables and HIV/AIDS prevention methods utilization, with gender differences, especially on condom usage and HIV testing.

5.2.6 Perceived barriers, benefits and Self-efficacy and HIV/AIDS prevention methods utilization

In response to the sixth objective of the study, which was to describe factors associated with the use of existing on-campus HIV/AIDS prevention methods, students reported their perceptions on abstinence, condom use, HVI testing services, and the Peer Education Program. Students also reported encouraging factors to the utilization HIV/AIDS prevention methods, as discussed in the following debates.

5.2.6.1 Perceptions and self-efficacy on Abstinence and Being faithful

The perceptions and self-efficacy mean score on abstinence was 12.06 (60.3%); suggest lower and negative perceptions on abstinence; the minimum was 1, the maximum was 20. There was no correlation between perceived susceptibility/perceived threat and self-efficacy on abstinence; the Pearson Correlations mean score for perceived susceptibility

and perceived threat was 21.3881 and 12.0604 for perceptions on condom, the p-value was (p=0.057) at 95% CI. Sixty (18.2%) and 59 (17.9%) respondents were in agreement that abstinence is not practical. This shows that students had negative attitude toward abstinence, and this finding supports the ones reported in the study carried out among students in Botswana by Sabone et al. (2007) where students believed that the freedom on-campus environment was not in favor of abstinence; the majority of students reported themselves that they were sexually active, and abstinence did not make sense to them. Similar findings were reported in the study carried out by Othero et al. (2009) where students regarded abstinence as not practical on-campus.

5.2.6.2 Perceptions and self-efficacy on Condom usage

The perceptions mean score on condom usage was moderate to high, 23.47 (67%) with standard deviation (SD=6.38). Furthermore, 14 (4.4%) and 30 (9.5%) respondents were in agreement that they did not use condom because of trusting one's sexual partner; and 86 (27.4%) respondents were in agreement that condoms are unnatural, and 15 (4.2%) and 59 (18.9%) respondents concurred that condoms decreased sexual pleasure, which suggests negative attitude towards condom usage. Most of respondents, 62 (19.4%) and 77 (24.1%) were in agreement that sometimes condoms are not available; which suggests a hindering factor to the use of condom. These findings show that students have negative attitudes toward condom use, and therefore are susceptible to engage in unprotected sex.

Inconsistency and negative attitude were reported in the study conducted among university students in South Florida by Trepka et al. (2008) where 52.1% respondents did

not use condoms the last time they had sexual intercourse, 52.4% did not use condoms most of the time or always during the preceding month. Similarly, in a recent study carried out in Burkina Faso, Ghana, and Zambia by Stephenson (2009) showed that young people reported risky sexual behaviors leading to HIV infection; which were mainly early first sexual intercourse, non-use of condom and inconsistency in condom use, and multiple sexual partners, which suggests behavioral change with regard to HIV/AIDS prevention. It is once again a concern, see that university students still have negative attitude toward condom usage, however it has been reported that in South Africa there has been high increase in condom use at higher level up to 87.4% among young males and 73.1% young females at national level (Shisana, et al., 2009).

5.2.6.3 Perceptions and self-efficacy on HIV testing

The perceptions and self-efficacy mean score for HIV testing was 26.37 (65.9%) with standard deviation (SD=5.419), which suggests medium to high score of perceptions on VCT. The minimum score was 5, and the maximum score was 40. 119 (36.5%) and 57 (17.5%) respondents were in agreement that getting tested for HIV helps people to feel better. However, 46 (14.2%) and 29 (8.9%) respondents were in agreement that they would rather not know if they are HIV positive, 29 (8.9%) and 49 (15%) respondents were in agreement that they were not sure that their results should be kept confidential and 54 (16.6%) and 46 (14.2%) respondents were in agreement that they would rather go to off-campus clinics for HIV testing, which suggests negative attitude to consult on-campus HIV testing services. Fifty-six (11%) and 50 (15.3%) respondents were in agreement that the appointment given for HIV testing is too long. These findings show

that uncertainty on confidentiality and the appointments for HIV testing would negatively influence students to test for HIV.

The study on attitudes towards HIV-antibody testing and people AIDS among university students in India, South Africa and United States of America by Peltzer et al. (2004) found similar findings that some students had positive attitudes while others had negative attitudes about HIV testing. Those who reported negative attitudes about HIV testing reported factors they considered to be associated with non-consultation for HIV testing, such as fear of knowing one's HIV status and irritation, fear related to blaming people living with AIDS (PWAs) and being stigmatized, loss of friends and uninsured confidentiality. Those factors are similar to the ones identified in this study, and they need to be addressed so as to maximize HIV testing among university students.

A study that identified psychological factors that predict the HIV testing among students by Hou and Wisenbaker (2005) revealed that testing-related psychological constructs such as perceived susceptibility, perceptions on confidentiality and availability of the services need to be addressed so as to maximize the rate of HIV testing among students.

5.2.6.4 Perceptions and self-efficacy on Peer Education Program

The mean score for Perceptions and self-efficacy on Peer Education Program was very low, 5.43 (36.2%) with standard deviation (SD=3.24). Most of respondents, 82 (25.1%) and 86 (26.3%) respectively strongly agreed that Peer Education Program is not well known; 37 (11.3%) and 51 (15.6%) respondents were in agreement that they did not

consult Peer Education Program because it is not helpful. These findings suggest a low awareness, lower use and negative attitude towards Peer Education Program by students.

This is congruent with the findings reported in the study carried out by Li et al. (2009) in China to evaluate the University-based peer health education. The majority of respondents (89.5%) were aware of Peer Education Program; but only 31.2% perceived peer educators to be helpful, and the majority felt that the program was not helpful (44.5%). Different findings have been reported in the study on the use of peer education program among students in Turkey carried out Ergene, et al., (2005). It was found that providing educational interventions by using peer educators or lectures among university students is a viable and effective way to transmit knowledge of HIV/AIDS and to impact positively the attitudes toward PLWAs, as it involves all students; therefore, it can be a service delivery model among university counseling centers.

5.2.6.5 Encouraging factors to the use of on-campus HIV/AIDS preventive methods

The most reported encouraging on-campus HIV preventive method is free condoms reported by 123 (38.4%) respondents; Voluntary Counseling and Testing (VCT) reported by 50 (15.6%) respondents. Others included students' movements against HIV/AIDS reported by 19 (5.9%); including HIV/AIDS program in academic curriculum reported by 19 (5.9%); having more counselors reported by 15 (4.7%) respondents; open-days against HIV/AIDS reported by 15 (4.7%), and Pamphlets and flyers around the campus reported by 14 (4.4%) respondents. These findings show that students are encouraged by the

availability and awareness of HIV/AIDS prevention methods, and the awareness and availability of these services were found to be related to their utilization in this study.

The availability of sexual transmitted diseases including HIV services on-campus premises has been accounted to be encouraging factors to the use of those services (Koumans et al., 2005). The same authors described the proportion of schools in the USA providing STIs prevention services and the use of condoms and HIV testing. In schools where the services were available, it was argued students used them much more than students who did not have such services on their campuses. However, previous studies have reported that despite the availability of STIs and HIV prevention services on-campuses, students did not use those services (Uys, et al., 2001; Stremlau & Nkosi, 2001), and students were identified to be engaging in risky sexual behaviors, which suggests low use of STIs and HIV prevention methods available (Bontempi, Mugno, Bulmer, Danvers & Vancour, 2009). Previous studies have therefore suggested that the factors associated with the non-use of those services among students need to be explored and addressed so as to maximize the use of these services (Seloilwe, 2005; Straub et al., 2006).

The inclusion of HIV/AIDS into the academic curriculum as suggested by the respondents in this study supports the findings of the study carried out in Burkina Faso, Ghana, and Zambia by Stephenson (2009) which suggested the inclusion of HIV/AIDS in the curriculum so as to provide comprehensive and correct information on HIV/AIDS to all students.

5.2.7 Barriers to the use of on-campus HIV/AIDS prevention methods

In response to the seventh objective of this study, which was to determine potential barriers to the use of existing HIV/AIDS prevention methods by students, the findings in the study showed that most reported barriers were the lack of awareness, 71 (31.6%); lack of privacy of the HIV testing venue, 44 (19.6%); uninsured confidentiality and fear of being stigmatized, 21 (9.3%) respondents; feeling uncomfortable towards peer educators, 35 (15.6%); long appointments for HIV testing, 18 (8%); and long queues during the time of HIV testing, 12 (5.3%). The least reported barriers included the fact that peer educators are too young, 9 (4%); poor counseling, 8 (3.6%); and unfriendly clinic staff reported by 7 (3.1%) respondents. These findings show that students were reluctant to have an HIV consulting due to the barriers reported in this chapter.

These findings are congruent with the one reported in the study conducted in Tanzania among medical students carried out by Vermeer, Bos, Mwambo, Kaaya and Schaalma (2009). The study identified those barriers to HIV testing comprised of fear of being stigmatized, fear of testing positive, low self-efficacy and low perceived susceptibility. Similar barriers have been identified in the study conducted in Indian on factors influencing HIV testing by Chakrapani, Shanmugam, Michael, Velayudham and Newman (2008). Other barriers identified in this study were fear of being seen by friends, fear of possible spread of false rumors by own community people, lack of correct knowledge about STIs and HIV, negative attitude of health care providers, and health care providers who use harsh language. The location of HIV testing centers closer to

residences was less consulted; restrictive time of testing, roaming around, waiting time for counseling, testing and getting test results, lack of same-day HIV testing methods, and incompetent and insensitive counselors.

These findings are also in the line with the ones of the study conducted among students at the University of Limpopo, Polokwane, South Africa by Meiberg, Bos, Onya, and Schaalma (2008) where stigma was identified as the major barrier to HIV testing among university students, the fear of knowing one's serology status was also identified as a barrier to HIV testing. Students reported that they had no trust in health workers; therefore fear that their serostatus could be revealed to their peers. This study put emphasis on guarantee anonymity or confidentiality so as to minimize the hesitation on VCT uptake. It has found that HIV-related stigma can have a negative impact on social relationships, access to resources, social and psychological well being of PLWAs, it is therefore vital to reverse these barriers so as to maximize CVT uptake in any community (Stutterheim, Bos & Schaalma, 2008). Therefore, it is vital that intervention to promote the use of on-campus HIV/AIDS prevention methods should focus on the above-mentioned barriers in order to maximize HIV/AIDS prevention methods utilization.

5.2.8 Suggestions to enhance the use of HIV/AIDS prevention methods on campus

In response to the eighth objective of this study, which was to explore measures which can enhance the utilization of HIV/AIDS by students at the UKZN, suggestions to enhance the use of on-campus HIV/AIDS prevention methods are as follow: Need of a conducive and private HIV testing venue, 65 (30.4%); advertising HIV/AIDS services to

increase awareness, 59 (27.6%); more counselors are needed to avoid appointments, and establishing the same-day HIV testing method, 35 (16.4%). In addition Residence-based HIV clubs, 18 (8.4%); Training peer educators on confidentiality, 13 (6.1%); Clinic staff to be friendly and have positive attitudes, 11 (5.1%); Adult counselors to be employed, 11 (5.1%); and pamphlets and flyers around campus reported by only 2 (0.9%) respondents. These findings show that students need to be aware of on-campus HIV/AIDS prevention methods, and they need a favorable HIV testing, and this needs to be addressed to increase HIV testing uptake.

The study carried out in India by Chakrapani et al. (2008) has proposed similar ways to overcoming barriers to HIV uptake. These are to ensure privacy, the presence of community-friendly health care providers, the same-day HIV testing methods and harmonizing policy regarding HIV testing. A study conducted on characteristics of volunteers and non-volunteers for Voluntary Counseling and HIV testing among unmarried undergraduate students by Adewole and Lawoyin (2004) reported that VCT services were consulted depending on the appropriate counseling and appropriate venue ensuring confidentiality.

With regard to Peer educators, the study carried out in Botswana among university students revealed that students found peer education program as not helpful (Seloilwe, 2005). A recent study carried out in Malaysia among university students by Jahanfar, Lye and Rampal (2009) showed that students valued peer-adult-led interventions rather than their colleagues of the same age. Findings of this current study revealed that students did

not value peer educators claiming that they are too young and they know each other, rather, students suggested that they would prefer peer-adult-led intervention.

5.3 SUMMARY OF THE FINDINGS

In this study respondents had high level of knowledge of HIV/AIDS; and higher perceived susceptibility and perceived threat of HIV/AIDS. They were aware of the two HIV/AIDS Prevention methods namely VCT and free condoms. The awareness was a predictor of utilizing HIV/AIDS prevention methods. The findings showed that students were still engaging in unprotected sex. Main identified barriers to the use of HIV/AIDS Prevention methods were lack of awareness and non-conducive HIV testing venue which does not ensure confidentiality as well as the lack of the same-day HIV testing services.

5.4 RECOMMENDATIONS

In the light of the findings of this study, the following recommendations should be given:

5.4.1 HIV/AIDS Program

- There is a need to reorganize HIV testing services and providing a favorable HIV testing venue with the entry and exit ensuring privacy and confidentiality of HIV testing seekers;
- There is a need to hire more counselors and establish the same-day HIV testing method so as to avoid long appointments in order to increase VCT uptake;
- There is a need to train peer educators on HIV/AIDS so as to improve the quality of care they offer to their colleagues on HIV/AIDS prevention.

5.4.2 Information Education and Communication (IEC)

- There is a need to establish Residence-based HIV/AIDS clubs so as to increase awareness of existing on-campus HIV/AIDS prevention methods, and ensure uninterrupted availability of free condoms;

5.4.3 Policy of HIV/AIDS

- There is a need to examine the possibility of inclusion of HIV/AIDS Program into the academic curriculum so as to offer comprehensive and correct knowledge of HIV/AIDS to all students for behavioral change.

5.4.4 Further Researches

- Comprehensive study focusing on few universities in the country or a comparative study involving a few countries to explore improving measures on the use HIV/AIDS prevention methods is needed.

5.5 LIMITATIONS OF THE STUDY

There following were the main constraints to this study:

- The use of online questionnaires had many hurdles which resulted in delays and fewer than expected participants;
- Timing of the study was not favorable as it was just before the examination time where students are not easily available;
- The sample was limited to only one of the five campuses at the UKZN.

5.6 CONCLUSION

The purpose of this study was to explore factors that influence the use of existing on-campus HIV/AIDS Prevention methods by UKZN students residing in a selected campus. As it emerged from the findings of this study, most of the variables of Health Beliefs Model (HBM) were not predictors of HIV/AIDS prevention methods utilization among students. Respondents had high level of knowledge of HIV/AIDS; and higher perceived susceptibility and perceived threat of HIV/AIDS.

UKZN students were mostly aware of the two HIV/AIDS Prevention methods namely VCT and free condoms, and both these methods were consequently the most utilized by students, and awareness was a predictor of utilizing HIV/AIDS prevention methods. The finding which was of concern was that students were still engaging in unprotected sex. The main identified barriers to the use of HIV/AIDS Prevention methods were lack of awareness, which was the main disappointing finding. Irregular availability of condoms and negative perceptions about condom use; non-conducive HIV testing venue, uninsured confidentiality, lack of the same-day HIV testing services were cited as barriers to condom usage. Others barriers included poor counseling, feeling uncomfortable towards peer educators, and negative attitudes by health clinic providers.

Intervention aiming to HIV/AIDS prevention among students at the UKZN should focus on removing identified barriers by providing a favorable HIV testing venue ensuring confidentiality, with the same-day HIV testing method, and advertising HIV/AIDS

prevention services as well as providing correct knowledge of HIV/AIDS, especially on HIV modes of transmission and focusing on behavioral change.

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Appendices

APPENDIX A: INFORMATION DOCUMENT

***Study title*:** "Exploration of Factors that influence the Utilization of HIV/AIDS Prevention Methods among University of KwaZulu-Natal Students residing in a Selected Campus"

Researcher: Eléazar NDABARORA, Student at Howard College Campus
School of Nursing, University of KwaZulu-Natal.

Dear Student,

I, Eléazar Ndabarora, Master student in Nursing at UKZN, Howard College, am conducting research on "The use of HIV/AIDS methods among university students living on and off-Campus residences at Howard College", and inviting you to participate in this study.

This study selected all students residing on and off-campus residences in order to identify issues around HIV/AIDS Prevention Services Utilization by Students.

Although, the study will not benefit you directly, but will provide necessary information about the use of HIV/AIDS prevention methods among students, and this information will contribute to improve the quality care that the HIV/AIDS Program at UKZN, Howard College offers to students. Participation will only inconvenient your time when completing the questionnaire that can take around 20 minutes. Your participation in this study is voluntary. You are under no obligation to participate. If you consent to participate, you have the right to withdraw any time if you feel uncomfortable to continue.

Your responses will be kept with the highest confidentiality, and they will not be linked with your identification, as well as the questionnaire doesn't require you to mention your name. The confidentiality will be maintained by not writing your name anywhere, and by using a coding system on the questionnaire, in such a way that it will not be possible to connect participant's responses to their identification during data collection, data analysis and findings dissemination.

Below is the researcher's and the supervisor's address that you may contact if there is a need to do so.

Thank you,

Eléazar Ndabarora Signature Date **Supervisor:**

Howard College Campus, UKZN
School of Nursing
Cell phone: 0784768992
Tel. 031-260 1075
Email: 205516350@ukzn.ac.za

Dr Gugu Mchunu
4th Floor, School of Nursing
Howard College Campus,
UKZN
Email: mchunug@ukzn.ac.za

APPENDIX B: INFORMED CONSENT

DECLARATION

I..... (Initials of the participant),

In signing this document, I am giving my consent to take part in the study titled "Exploration of Factors that influence the Use of HIV/AIDS Prevention Methods among University of KwaZulu-Natal Students residing in a selected Campus".

I have read the information document and understood the contents, and the nature of the research project, and I consent to participating in the Research Project.

Permission is granted freely and I was made aware that participation is voluntary.

I also understand that I can withdraw at any stage of the project if I do not feel comfortable to continue to participate.

It was agreed that my identification will not be linked to my responses, and to complete the questionnaire doesn't require me to put my name.

Signature .....

Date.....

APPENDIX C: THE QUESTIONNAIRE

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your age..... (In years)

2. Gender: 1. Female ☐ 2.Male ☐

3. Marital status: 1.Single ☐ 2. Married ☐ 3. Widow ☐
   4. Have regular girl/boyfriend ☐ 5. Divorced ☐

4. Ethnicity/Race: 1. African ☐ 2. Indian ☐ 3.White ☐
   4. Others .....

5. What is your student status? 1. Local student ☐ 2. International student ☐

6. What is your academic level? 1. Undergraduate ☐ 2. Postgraduate ☐

SECTION B: PERCEIVED SUCCEPTIBILITY AND PERCEIVED THREAT.

Please indicate how far do you agree with the following statements?

Statement	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
7. I am concerned that I could get HIV/AIDS.	4	3	2	1
8. HIV/AIDS is a serious problem in my community.	4	3	2	1
9. Medicines for HIV/AIDS do more harm than good.	1	2	3	4
10. Only prostitutes and drug users get HIV/AIDS	1	2	3	4
11. The government is doing all it can to fight HIV/AIDS	4	3	2	1
12. HIV/AIDS was introduced by white people as a way to control black Africans.	1	2	3	4
13. The government is telling the truth about HIV/AIDS.	4	3	2	1

SECTION C: KNOWLEDGE OF HIV/AIDS AND SOURCES OF INFORMATION

Please tick in the appropriate box to your answer in the following table

Questions/statements	Yes	No
14. HIV is transmitted from one person to another through body fluids (blood, semen, vaginal fluids and breast milk)	1	0
15. Can you get HIV from kissing?	1	0
16. Can you get HIV by oral sex?	1	0
17. Does washing after sex help protect from getting HIV?	0	1
18. Can a person get rid of HIV/AIDS by having sex with a Virgin?	1	0
19. Is there a cure for AIDS?	0	1
20. Must a person have different sexual partners to get HIV/AIDS?	0	1
21. Can a woman transmit the HIV to fetus/unborn child?	1	0
22. Do Sexually Transmitted Infections (STIs) increase the risk of HIV infection?	1	0
23. Does unsafe sex (without condom) with one or more partners runs the risk to contract HIV?	1	0
24. Have you ever known a person with HIV/AIDS?	1	0

25. Where do you get information on HIV/AIDS from?

1. Media, ☐
2. Friends, ☐
3. Peer educators ☐
4. Health care providers (Doctors/Nurses ☐
5. Lectures/ Lecturers ☐
6. Newspaper/ Magazines/Books ☐

SECTION D: SEXUAL EXPERIENCES AND RISK SEXUAL BEHAVIOR

Please answer to the following questions

26. Are you currently sexually active? 1. Yes ☐ 2. No ☐

27. How many sexual partners do you have currently? 1. One ☐ 2. More than ☐ one

28. How many sexual partners have you had sex with in the past 12 months?

1. One ☐ 2. More than one ☐

29. Have you ever shared needles to inject (shoot-up) drugs?

1. Yes ☐ 2. No ☐

30. Have you had a sex partner who you think used needles to shoot-up drugs?

1. Yes ☐ 2. No ☐

31. Have you had a sexual Infection (STI) such as Syphilis, Gonorrhea, or Herpes?

1. Yes ☐ 2. No ☐

32. Has someone ever given you money, drugs, or a place to stay in exchange for sex?

1. Yes ☐ 2. No ☐

33. Have you ever given someone money, drugs or a place to stay in exchange for having sex with you? 1. Yes ☐ 2. No ☐

34. Have you ever talked with a friend or someone else about AIDS?

1. Yes ☐ 2.No ☐

35. Has someone ever forced you to have sex when you did not want to, including when you were a child? Yes ☐ No ☐

SECTION E: HIV PREVENTION METHODS AWARENESS AND UTILIZATION:

Please answer to the following questions

36. What is your protective measure from contracting HIV?

1. Abstinence ☐ 2. Be faithful ☐ 3. Use Condom ☐

37. Did you or your sexual partner use condom during the most recent sexual intercourse? 1. Yes ☐ 2. No ☐

38. Are you aware of HIV/AIDS Prevention Methods that exist on campus? Please tick on each of the following you are aware of:

1. Voluntary Counseling and Testing (VCT) of HIV Yes ☐ No ☐
2. Wellness Program Yes ☐ No ☐ 4. Peer education Program Yes ☐ No ☐
3. Free Condoms Yes ☐ No ☐ 5. Antiretroviral Therapy Yes ☐ No ☐

39. Which one did you utilized?

1. Voluntary Counseling and Testing (VCT) of HIV Yes ☐ No ☐
2. Wellness Program Yes ☐ No ☐ 4. Peer education Program Yes ☐ No ☐
3. Condoms Yes ☐ No ☐ 5. Antiretroviral Therapy Yes ☐ No ☐

40. Which one did you utilized?

1. Voluntary Counseling and Testing (VCT) of HIV ☐
2. Wellness Program ☐ 4. Peer education Program ☐
3. Condoms ☐ 5. Antiretroviral Therapy ☐

41. Have you ever been tested for HIV? 1. Yes ☐ 2. No ☐

42. Do you plan to get tested again? 1. Yes ☐ 2. No ☐

43. Is free HIV testing available to you? 1. Yes ☐ 2. No ☐

SECTION F: PERCEIVED BARRIERS, PERCEIVED BENEFITS AND SELF-EFFICACY TO HIV/AIDS PREVENTION METHODS

Please indicate how far do you agree with the following statements?

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
44. Abstaining is a way of protecting oneself from getting HIV	**5**	**4**	**3**	**2**	**1**
45. Abstinence is not practical for me	**1**	**2**	**3**	**4**	**5**
46. Being faithful to one uninfected partner protects from getting HIV	**5**	**4**	**3**	**2**	**1**
47. It is difficult to be faithful to my partners	**1**	**2**	**3**	**4**	**5**
48. I don't use a condom because I trust my partner	**1**	**2**	**3**	**4**	**5**
49. Condoms are unnatural	1	2	3	4	5
50. My partner doesn't like to use a condom	1	2	3	4	5
51. Using a condom decreases sexual pleasure	1	2	3	4	5
52. I am not able to negotiate with my partner to use of a condom	1	2	3	4	5
53. Condoms are easy to get	5	4	3	2	1
54. Sometimes condoms are not available	5	4	3	2	1
55. Getting tested for HIV helps people feel better	5	4	3	2	1
56. I don't know where I can go for HIV testing on-campus	5	4	3	2	1
57. I would rather not know if I have HIV	1	2	3	4	5
58. I am not sure that my results can be kept confidential if I am tested HIV positive	1	2	3	4	5
59. I would rather go in off-campus	1	2	3	4	5

clinic for HIV testing					
60. The appointment for HIV testing is too long	1	2	3	4	5
61. People in my life would leave me if I had HIV	1	2	3	4	5
62. People who test HIV positive should hide it from others	1	2	3	4	5
63. Getting tested for HIV helps keep people from getting HIV	5	4	3	2	1
64. Peer education program is not well known	5	4	3	2	1
65. I don't consult Peer Education Program because it is not helpful	1	2	3	4	5
66. I would contact a Health care provider rather than a peer educator	1	2	3	4	5

67. Which of the following can encourage you to use existing HIV/AIDS Prevention methods?

1. Condom availability ☐
2. VCT Program on-campus ☐
3. Peer educators ☐
4. Wellness Program ☐
5. There should be more than one Counselor ☐
6. Students' movement against HIV/AIDS ☐
7. Open-day on HIV/AIDS on-campus ☐
8. Available Pamphlets on HIV/AIDS on-campus ☐
9. Including HIV/AIDS in academic curriculum ☐

SECTION G: OPEN-ENDED QUESTIONS

68. Please briefly list major barriers/problems you may have regarding the use of Peer Education Program or HIV testing service on campus?

.....

.....

.....

69. Please give suggestions that you think can help to overcome such barriers?

.....

.....

.....

.....

APPENDIX D: LETTER TO THE DEAN OF STUDENTS

To: The Dean of Students
University of KwaZulu Natal
Howard College Campus

Eléazar Ndabarora
Student No 205516350
Cell phone: 0784768992
UKZN, Howard College Campus
School of Nursing
The 26th May 2009.

Dear Sir,

RE: Permission to undertake the research project on and off-Campuses Residences at Howard College Campus, UKZN

May I request your permission to conduct a research project at the above-mentioned residences as part of my coursework Masters in Nursing at the University of KwaZulu Natal, Durban. The collection of data will be done after the approval by the Ethics Committee of the University of KwaZulu-Natal.
The Title of the project is "Exploration of Factors that influence the Use of HIV/AIDS Prevention Methods among University of KwaZulu-Natal Students residing in a selected Campus"

Please find enclosed herewith a copy of the proposal for the project.

Thank you,

E Ndabarora (Mr.)
Signature……..
Student

APPENDIX E: LETTER TO THE HOUSING ADMINISTRATOR

To: The Housing Administrator
University of KwaZulu Natal
Howard College Campus

Eléazar Ndabarora
Student No 205516350
Cell phone: 0784768992
UKZN, Howard College Campus
School of Nursing
The 26 May, 2009.

Dear Sir,

RE: Permission to undertake the research project on and off-Campuses Residences at Howard College Campus, UKZN

May I request your permission to conduct a research project at the above-mentioned residences as part of my coursework Masters in Nursing at the University of KwaZulu Natal, Durban.
The Title of the project is "Exploration of Factors that influence the Use of HIV/AIDS Prevention Methods among University of KwaZulu-Natal Students residing in a selected Campus"

Please find enclosed herewith a copy of the proposal for the project.

Thank you,

E Ndabarora (Mr.)
Signature……..
Student

APPENDIX F: ETHICAL CLEARANCE APPROVAL LETTER

UNIVERSITY OF
KWAZULU-NATAL

RESEARCH OFFICE (GOVAN MBEKI CENTRE)
WESTVILLE CAMPUS
TELEPHONE NO.: 031 – 2603587
EMAIL : ximbap@ukzn.ac.za

20 JULY 2009

MR. E NDABARORA (205516350)
SCHOOL OF NURSING

Dear Mr. Ndabarora

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0474/09M

I wish to confirm that ethical clearance has been approved for the following project:

"Exploration of factors that influence the Use of HIV/AIDS Prevention Methods among University of KwaZulu-Natal Students residing in a Selected Campus"

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

Yours faithfully

MS. PHUMELELE XIMBA
ADMINISTRATOR
HUMANITIES & SOCIAL SCIENCES ETHICS COMMITTEE

cc. Supervisor (Dr. G Mchunu)
cc. Mr S Reddy

APPENDIX G: APPROVAL LETTER FROM THE DEAN OF STUDENTS

UNIVERSITY OF
KWAZULU-NATAL

01 September 2009

Dear Mr E. Ndabarora

Re: **Exploration of factors influenceingin HIV/Aids prevention methods amongst UKZN students residing in a selected campus**

Kindly note that we have no objection in you conducting a study amongst students at Howard College,UKZN, provided that you have the necessary ethical approval. It will be a good thing if you could be in a position to furnish my office with the final product of your study.

Regards
Dr BW Ngcobo
Deputy Dean: Students
Howard College and Medical School

Dr B. W. Ngcobo
Office of the Deputy Dean: Students
Howard College Campus & Medical School

Postal Address: Howard College Campus, Durban 4041 South Africa

Telephone: +27 (0)31 260 2443 Facsimile: +27 (0)31 260 3021 Email: ngcobob1@ukzn.ac.za Website: www.ukzn.ac.za

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

APPENDIX H: APPROVAL LETTER FROM THE HOUSING ADMINISTRATOR

UNIVERSITY OF
KWAZULU-NATAL

7th September 2009

TO WHOM IT MAY CONCERN

Re : Ndabarora Eleazor, student No. 205516350 : Residence research

The abovementioned student has requested to conduct field research in the Howard College Campus Residences, for his academic dissertation. The research work has been approved by the University Research Ethics Committee.

Approval is hereby granted for Mr Ndabarora to conduct field research in residences as requested. It must be highlighted however that students who participate in this research work will do so at their own discretion and consent.

Sincerely

Sifiso Dludla
Deputy Director :
Student Housing

Department of Student Housing

Postal Address: Howard College Campus, Durban 4041, South Africa

Telephone: +27 (0)31 260 7449 Facsimile: +27 (0)31 260 1596 Email: [illegible] Website: [illegible]

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville