

UNIVERSITY OF THE WESTERN CAPE

Faculty of Community and Health Sciences

Knowledge and attitudes towards HIV/AIDS education and risky sexual practices among Grade 12 learners at a Finishing School in Cape Town, South Africa.

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A mini thesis submitted in partial fulfilment of the requirements of the Master's in Public Health Degree at The University of the Western Cape.

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Keywords:

HIV/AIDS, Life Orientation Curriculum, HIV/AIDS education, Knowledge, attitudes, risky sexual behavior, preferences, Grade 12 Learners, Cape Town, South Africa

DECLARATION:

I declare that “Knowledge and attitudes towards HIV/AIDS education and risky sexual practices among Grade 12 learners at a Finishing School in Cape Town, South Africa.” is my own work, that has not been submitted before for any degree or any other examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete reference. It is submitted for the degree of Master of Public Health at the University of the Western Cape.

Signature:

Masiwa Mutambara. **Date:**

15 December 2022



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I would like thank the Lord Almighty for giving me this opportunity to further my studies especially in an area I have always been passionate about. It was not easy, but I managed to get to the finish line.

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I dedicate this thesis to myself. Seeing this to completion was a milestone I never thought I would overcome.



ABBREVIATIONS

ADKQ	Adolescent Depression Knowledge Questionnaire
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral Therapy
CI	Confidence Interval
DBE	Department of Basic Education
HIV	Human Immunodeficiency Virus
H₀	Null hypothesis
H₁	Alternative hypothesis
KAP	Knowledge, Attitudes and Practices Survey
LO	Life Orientation
LMICs	Low- and middle-income countries
NGOs	Non-Governmental Organisations
NSP	National Strategic Plan
OR	Odds Ratio
RSB	Risky Sexual Behaviour
SANAC	South African National AIDS Council
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNAIDS	United Nations Programme on HIV and AIDS
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations International Children's Emergency Fund
UWC	University of the Western Cape
VMCC	Voluntary Medical Male Circumcision
WHO	World Health Organisation



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ABSTRACT

Aim: The main purpose of this study was to describe knowledge of HIV/AIDS, attitudes and perceptions towards HIV/AIDS education as given in Life Orientation Curriculum and sexual practices among Grade 12 learners at a finishing school in Cape Town South Africa. With reports of an upward trend of HIV incidence among the youth, it is worth examining how students view the HIV education they are given through the Life Orientation Curriculum.

Methods: A cross sectional study was conducted. A standardised questionnaire to gather information on Grade 12 learners' knowledge of HIV/AIDS, attitudes towards HIV education in schools as well as related sexual practices was self-administered by the participants 2020. A random sample of 251 male and female students was selected from the school and participated in the study

Results: The level of general awareness of HIV was high, with 72% of the participants answering at least 7 questions out of the ten questions on knowledge of HIV correctly. However, forty percent of the students thought that HIV can be transmitted through mosquito bites while slightly above one third (35%) of the students did not know that HIV can be avoided by being faithful to one partner. Gender, economic situation, residence, and internet access were all significantly linked to knowledge of HIV/AIDS. Women were more likely than men to aware of how HIV spreads. Slightly above 50% of the students showed positive attitudes towards HIV education in schools and most of the students (83.7%) believed that HIV education should be taught in schools. This is despite that forty-two percent of the students agreed that Life orientation teachers did not make HIV education exciting and 40% thought that the HIV education they received did not equip them to make informed decisions. Family income level place of residence during school years, and religion were the only variables that were significantly related to attitudes towards HIV education in schools. Students who reported as coming from high income families expressed positive attitudes towards HIV education in schools. Two thirds of the students reported that they engaged in risky sexual practices with 16 years being the median age for first sexual encounter.. Less than half of the students reported having used a condom in their last sexual encounter Age, gender, family economic level, place of residence during school years, religion, and availability of the

internet were all significantly related to sexual behaviour Knowledge of HIV and attitudes towards HIV education in schools were positively and significantly correlated, ($r=0.292$, $p<0.001$), meaning students with higher levels of knowledge expressing positive attitudes towards HIV education in schools. HIV Knowledge and sexual practices were positively and significantly correlated ($r = 0.135$, $p< 0.05$), with those with higher levels of knowledge about HIV reporting safer sexual practices.

Conclusion: The study showed significant high-risk sexual behavior among students at the school in Cape Town. A considerable number of students at the study site did not display positive attitudes towards HIV education in schools despite showing high levels of knowledge of HIV. These findings provide some insights that the South African Department of Basic Education should utilize to design more appealing strategies for sexual health promotion to help slow the spread of HIV and other STIs among young people in South Africa.



CHAPTER 1: INTRODUCTION

1.1 : Introduction

HIV and AIDS remains a global burden after more than three decades since its discovery. According to a 2022 UNAIDS report on HIV/AIDS, the global prevalence of HIV infection currently stands at 38.4 million with around 1.8 million people reported to have been infected in 2021(UNAIDS, 2022). Over the years there have been significant strides in the fight against HIV infections, which has seen a 47 percent reduction in HIV incidence since the peak of 1996 (UNAIDS, 2018). As part of the global strategy to halt the spread and impact of HIV, the availability of antiretroviral therapy (ART) has reached about 28.7 million people globally as of 2017 (UNAIDS, 2022). In as much as global access to ART and the reduction in HIV prevalence have significantly improved, HIV still affects African countries disproportionately, especially in Sub-Saharan Africa (SSA) (WHO, 2017). Evidence from low to middle income countries indicates that HIV incidence was reduced by half a percent as a result of intensified prevention and treatment efforts mostly in vulnerable communities (*South Africa | UNAIDS*, undated. -a; UNAIDS, 2022).

According to a 2019 UNAIDS report the South African HIV prevalence, which stands at 7.7 million, amounts to 19 percent of the global prevalence, leaving the country bearing the largest burden of the epidemic (UNAIDS, 2019). In addition, South Africa is responsible for 15 percent of the global HIV incidence as well as 11 percent of global AIDS related deaths (UNAIDS, 2019b, 2022). In spite of this picture, South Africa has taken great steps to reduce the spread and impact of HIV in the country (Mabaso et al., 2019; Psaros et al., 2018; *South Africa | UNAIDS*, n.d.-b). The South African government in collaboration with non-governmental organisations, and civil society groups helped in reducing HIV incidence to 240 000 new infections in 2018, which is a decline of 49 percent from a peak of 2006 (UNAIDS, 2019). A reduction of 50 percent in AIDS related deaths have been recorded in South Africa since 2010 (UNAIDS, 2021; WHO, 2017). This has been a result of the country's roll out of the antiretroviral therapy (ART) programme, which is the biggest in the world (UNAIDS, 2016). This followed the introduction of the National Strategic

Plan (NSP) in which the fight against HIV/AIDS, Tuberculosis and Sexually Transmitted Infections were prioritised (SANAC, 2017; UNAIDS, 2016).

Despite the strides made in reducing the national HIV incidence in South Africa, HIV incidence rates among adolescents aged 10-24 remains high (Mabaso et al., 2021; Miller et al., 2017; Simbayi et al., 2005). HIV prevalence among women in South Africa is almost four times greater than that of men (SANAC, 2017). In 2016 alone, young women aged 15-24 made up about 37 percent of new infections in South Africa (unaid.org, 2018b) accounting for about 11 percent of the global incidence (Right to Care, 2016) with 320 000 young people aged 10-19 having been infected with HIV in 2016. Adolescent girls remain vulnerable to HIV and are eight times more likely to be infected with HIV as opposed to their male counterparts (Mabaso et al., 2021; UNAIDS, n.d.; WHO, 2017) due to vulnerabilities created by unequal cultural, social and economic status (Krishnan et al., 2008; Miller et al., 2017).

To reduce the HIV incidence and AIDS related mortality among adolescents, especially those in school, in 1997, the government through the Department of Basic Education (DBE) introduced HIV and sex education as part of the Life Orientation (LO) curriculum across all grades in South Africa (DBE, 2003a). Life Orientation entails a component of “Life Skills” education whereby learners in schools are taught non-academic “...abilities, knowledge, attitudes, and behaviours necessary for successful living and learning and enhance the quality of life and prevent dysfunctional behaviour. The integration of HIV education in the LO curriculum aims to address:

“issues related to the prevention of substance abuse, diseases of lifestyle, sexuality, teenage pregnancy, sexually-transmitted infections including HIV/AIDS, and the promotion of personal, community, and environmental health” (DBE, 2003a, p. 11).

This enables LO to be a subject capable of promoting a sense of physical, mental and social well-being among learners (Mashele, 2014). However, the use of condoms in South Africa was reported to have declined among adolescents from 85 percent in 2008 to 68 percent in 2016 (Aventin et al., 2021; AVERT, 2016), despite an increase in the distribution of condoms over the same period (Timol et al., 2016; Wabiri & Taffa, 2013). In addition, only 45.8 percent of young men and women between the ages of 15-24 are able to correctly identify ways of preventing sexual

transmission of HIV (De Wet et al., 2019; Sani et al., 2016; UNAIDS, n.d.-a). Previous research suggests that the HIV content taught in the LO curriculum has not resulted in the desired results of reducing HIV incidence rates among school going children in South Africa (Helleve et al., 2009). Another question that raises concern is whether the students take the HIV and sex education they are given in schools through the LO Curriculum seriously. In addition, studies have found that the acquisition of knowledge on HIV does not necessarily translate to behavioral change (Fonner et al., 2014a). This study will explore the sexual practices of Grade 12 learners, their knowledge of HIV and their attitudes towards HIV education at a school in the Western Cape Province of South Africa.

1.2 : Problem Statement

Adolescent HIV incidence remains high as a result of socio-economic disabling factors such as poverty, peer pressure, the use of drugs and alcohol as well as lack of comprehensive knowledge of HIV/AIDS among other factors (Simbayi et al., 2018; unaids.org, n.d.). This increases the burden of disease, placing further strain on an already overburdened health system. This research sought to understand why HIV incidence continues to increase among the youth despite receiving HIV education at school. Although HIV education may not guarantee positive behavior change, it has produced noticeable results in certain contexts around the world, including SSA (Sani et al., 2016). Through HIV education, learners are able to make informed decisions with regards to HIV prevention as they are equipped with knowledge and skills (Fonner et al., 2014a; Miller et al., 2017).

In South Africa, despite the roll out of HIV and sex education in schools, a nationwide study reported that only half of the learners knew that condoms were effective in preventing HIV and the overall accurate HIV knowledge was poor (Miller et al., 2017). Observations have also confirmed this trend in the school under study as at least 30 pregnancies are noticed every year (R. Mazorodze, personal communication, 25 October 2018) showing evidence of unprotected sex in line with a study by Mabaso et al., (2018). This may therefore, raise questions about the effectiveness of the HIV education given in schools to curb HIV infection among the youth in South Africa. In liaison with school authorities, the School Governing Body of the school under

study have requested interventions that help improve the students' knowledge on HIV and sexuality. This study forms part of a needs analysis to map out the interventions that are relevant to the particular school in the Western Cape province of South Africa.

Attitudes and perceptions towards a subject tend to affect the way the subject is received by the learners and hence it is pertinent to explore learners' knowledge of HIV/AIDS, attitudes and perception towards HIV/AIDS education in schools as well as their sexual behavior practices.

1.3 : Significance of Study

The significance of this study lies in its contribution to build a better understanding of the attitudes and perceptions learners have towards the HIV/AIDS component of the LO curriculum in schools, which is an important HIV prevention intervention strategy in South Africa. As an intervention strategy, it is therefore important to get feedback from the intended beneficiaries and assess whether positive or negative outcomes have been achieved. Assessing students' knowledge of HIV, their attitudes towards HIV education and their sexual practices becomes one of the yardsticks that may be used to assess the effectiveness of the HIV education these students received in their schools. This study aimed to help policy makers by generating information which may be necessary for localised HIV/AIDS awareness and behavior change programs for the youth. Life Orientation educators in schools will also benefit as they may have to adapt new ways of delivering lessons which may appeal to their learners. In addition, the study can also influence social change. Conservative attitudes especially among teachers and parents which are strengthened by cultural and traditional beliefs may shift towards the realisation that adolescents indeed need sexual health education which can reduce HIV infections amongst them.

CHAPTER 2: LITERATURE REVIEW

2.1 : Introduction

This chapter presents literature with respect to (i) adolescence and HIV prevalence; (ii) adolescents' knowledge of HIV and risky sexual behavior; (iii) the role of HIV education in schools; (iv) learners' attitudes towards HIV education in schools and; (v) teachers' perceptions towards HIV education in schools and KAP surveys in HIV research.

2.2 : Adolescents and HIV prevalence in South Africa

HIV incidence among South African youth continues to remain high; with a third of all HIV new infections occurring between the ages 15 and 19 (unaids.org, 2018b; UNAIDS, 2020; Vhethe, 2011). Prevalence among young women in South Africa is four times greater than that of young men who fall within the same age group (Mabaso et al., 2021; *The National Strategic Plan/SANAC*, 2017). More concerning are adolescent girls in low income black communities who are eight times more likely to be infected with HIV compared to their male counterparts (AVERT, 2016; unaids.org, 2018a). This is due to vulnerabilities created by unequal cultural, social and economic status (Krishnan et al., 2008; Miller et al., 2017). In 2019 alone, young women between the ages of 15-24 made up about 37% of new HIV infections in South Africa (Mabaso et al., 2021; UNAIDS, n.d.-b), accounting for about 11% of the global incidence rate (Right to Care, 2016). Moreover, 320 000 young people between the ages of 10-19 were also infected with HIV in 2019 (UNICEF, 2020). Considering such high numbers, this puts South Africa top in terms of the global HIV epidemic (UNICEF, 2018) .

Numerous factors have led to the state of HIV prevalence and incidence among adolescents in South Africa. Young people's perceptions towards HIV have been largely environmentally, psychologically and socially oriented (Mashele, 2014; UNICEF, 2020) as they also learn from their surroundings. It has been found that factors such as peer interactions, communication between parents and adolescents, as well as school environments, have a great impact on the way young people perceive HIV (UNESCO 2001). Socio-economic issues like poverty and gender-based

violence (GBV) have exacerbated young people's vulnerability to HIV infections and unwanted pregnancies (Barron et al., 2022; Simbayi et al., 2005; Zuma et al., 2010). This has led many young girls resorting to risky sexual behavior (*The National Strategic Plan/SANAC*, 2017; Wamoyi et al., 2016) like intergenerational relationships with older man from whom they are not only infected with HIV but end up having unwanted pregnancies (UNAIDS, 2020; Wamoyi et al., 2016; Zuma et al., 2010). In 2016, teenage girls aged 10-19 constituted 13.9% of the registered childbirth in South Africa (Right to Care, 2016), suggesting a rise in unprotected sex among this age group - especially in black communities (Barron et al., 2022).

Additionally, the lack of access to healthcare facilities for youth and adolescents hinders HIV prevention and treatment services (UNICEF, 2018b). Young people face barriers in receiving health services and tend to use such services much less as compared to adults (Wamoyi et al., 2016). According to the Center for Disease Control, only about 10 % of high School students in America had been tested for HIV in 2015 (CDC, n.d.). HIV Counselling and Testing (HCT) as well as Anti-retroviral therapy (ART) are both given for free in most public and private health facilities in South Africa (SANAC, 2017). Therefore, young people in South Africa should be encouraged to access such services and help curb the spread of HIV.

However, because of stigmatisation, HIV testing among the youth remains low (Van Handel et al., 2016). This is largely due to socio-cultural beliefs, for example prohibiting young people from engaging in encounters of a sexual nature (especially in Africa) and health officials who find it hard to start a conversation with young adolescents about sex (unaids.org, 2018b; Van Handel et al., 2016). Often the fear of stigmatisation and a breach in confidentiality deters young people from visiting health facilities, thus restricting their access to ART (Strauss et al., 2015; UNICEF, 2020; Van Handel et al., 2016).

Globally, the wellbeing of the youth is threatened by preventable, and often self -inflicted causes; for example accidents, delinquency, violence, substance misuse and risky sexual behavior (Bundy et al., 2018; Kalichman et al., 2007; Miller et al., 2017; Onoya et al., 2015). Sexual risk-taking

behavior (SRB) among the youth includes unprotected sex, multiple sexual partners and transactional sex, including early sexual debut (*HIV and AIDS in South Africa | Avert*, n.d.; Mabaso et al., 2018; Ssewanyana et al., 2018).

Studies conducted found that young men and women in Sub-Saharan Africa were more likely to engage in transactional sex as opposed to their elder counterparts (Chatterji et al., 2005; Wamoyi et al., 2016). These findings are further substantiated by Berhan and Berhan's (2015) who conducted a meta-analysis on SRB amongst male youth in 26 developing countries. Their study found that out of a total of 19 148 males aged between 15 and 24 who had sexual intercourse in the preceding 12 months, 75 % had engaged in risky sexual behavior, of which 90% were reported among those aged 15-19 years. The authors concluded that there was a significant association of high risk sexual behavior among male youths below the age of 20 (Berhan & Berhan, 2015). A systematic review and meta-analysis on the health risk behaviors of adolescents living with HIV (ALWHIV) in Sub-Saharan Africa, found that about 60% of the participants reported condom non-use (Ssewanyana et al., 2018) . In this study, 33% had reported SRB, 20% reported transactional sex, while 21% had experienced sexual violence (Ssewanyana et al., 2018). In South Africa, a 2016 study on SRB and knowledge of HIV amongst Grades 9 to 12 in the Eastern Cape, found that more than half the learners had sex before the age of 15 (Adeboye, Yongsong, & James, 2016). In the same study, about 72% of the students reported no condom use during their first sexual encounter of whom 32% indicated that the sex was unplanned (Adeboye, Yongsong, & James, 2016).

Insufficient knowledge of HIV has been attributed to the rise of HIV incidence among the South African youth (Adeboye, Yongsong, Akinwumi, 2016). According to a study conducted using data from the South African National HIV, Behaviour and Health Survey (2012), it was found that among the 4.1 million youth aged 15-24-years old who have known or cared for someone with HIV, 40% were impacted by the disease (De Wet et al., 2019). One quarter of those impacted youth are reported to having 75% accurate knowledge of the virus while only 10 % had 100 % accurate knowledge of the virus (De Wet et al., 2019). Another study using the same data found that among youth aged 15-24, HIV knowledge have been decreasing from 31.5% in 2008 to 26.8%

in 2012 (Timol et al., 2016; Wabiri & Taffa, 2013). Furthermore, recent studies have revealed that only about 59% of youth aged 15-24 in South Africa have comprehensive knowledge of ways to prevent HIV (www.avert.org) (Mostert et al., 2020). Myths and misconceptions around HIV tend to make the youth skeptical about research-based knowledge that is being taught in schools (Adeboye, Yongsong, Akinwumi, 2016) and therefore continue to engage in high SRB and consequently increase HIV incidence (Natrass, 2016; Sivela, 2016).

In order to mitigate the problem surrounding the lack of comprehensive knowledge on HIV amongst the youth in South Africa, HIV education was mandated in the South African public school's curriculum (DBE 2003a).

2.3 : The role of HIV and sex education in schools

School-based sex education is a cornerstone of HIV prevention for adolescents who globally continue to bear a disproportionately high HIV burden (Faust & Yaya, 2018; Fonner et al., 2014b; Sani et al., 2016). Since HIV is transmitted among the youth, and in most cases through preventable behaviours (Kalichman et al., 2007; Kirby et al., 2007; Mabaso et al., 2021), programmes that focus on the prevention of high SRB are important in controlling the spread of the disease (Herr et al., 2012; Sani et al., 2016; UNICEF, 2020). Throughout the world, many people view HIV -, sexually transmitted diseases (STDs) - and sex education programmes as promising, yet partial solutions to reduce adolescent SRB exist (Barron et al., 2022; Kirby et al., 2007). When implemented in schools, these interventions have the potential to reach large numbers of the youth (Bhana et al., 2019; Herr et al., 2012). This can assist in fostering positive health and sexual behaviors in an attempt to reduce the risk of infection and unwanted pregnancies (Barron et al., 2022; Kirby et al., 2007).

Sexual health and HIV education in schools has brought about positive results in many settings, both in developed and developing countries (Ma et al., 2014; Mahat & Scoloveno, 2018; UNAIDS, n.d.-c). According to a review paper of 83 studies that measured the impact of curriculum-based sex and HIV education programmes among youth aged 25 and younger, it was reported that about two-thirds of the programmes significantly improved one or more sexual behaviours (Kirby et al.,

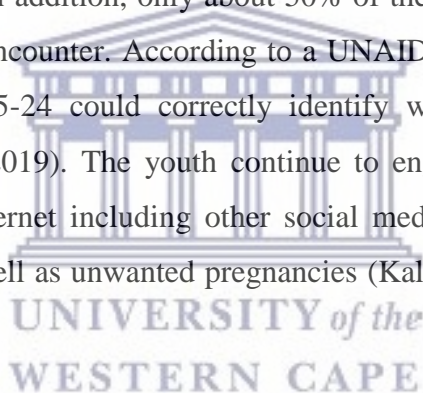
2007). In the same review, it was also found that some programmes did not hasten or increase sexual behaviour but delayed or even decreased sexual behaviours while others increased the use of condoms and/or contraceptives. A meta-analysis of 63 school-based sex education interventions in both low- and middle-income countries, reviewed the efficacy of these interventions and the impact they have on changing HIV-related knowledge and risk behaviors (Fonner et al., 2014). In their review, results found that school-based sex education was an effective strategy for reducing HIV-related risk. Students who received sex education had significantly greater HIV knowledge, self-efficacy with regards to condom use or refusing sex, fewer sexual partners and delayed first sexual encounter during follow up (Fonner et al., 2014). This concurs with findings by Sani et al. (2012) in their review of 51 studies which looked at the effectiveness of school-based interventions aimed at reducing sexually transmitted infections (STIs), including the promotion of condom use.

2.4 : Adolescents, HIV and Life Orientation in South Africa

Over the past few decades, the South African government has prioritised HIV awareness in order to curb the country's high incidence levels (UNAIDS 2018). One strategy was to raise awareness among school going children (DBE 2003 a; DBE 2008). HIV education has become part of the Life Orientation (LO) curriculum for grade 3 to grade 12 learners as a prevention intervention for youth and adolescents. Life Orientation is a subject that helps learners to study the self in relation to others and their society (DBE 2003a). It applies a holistic developmental approach which deals with personal-, social-, and physical growth of learners, including knowledge on HIV (DBE 2008). Life Orientation aims to prepare students for life's responsibilities and possibilities by addressing issues of health and reproduction, problem solving and the capacity to make informed decisions (DBE 2008). These skills should enable learners to live meaningful lives even when faced with societal problems such as crime and drugs (Mahat & Scoloveno, 2018; Vhethé, 2011) . The aim of HIV education is to educate the youth on topics that include puberty, adolescence, the male and female reproductive organs, sexual behavior and contraception (DBE 2008).

Education on sexuality has been found to bring about positive outcomes (Thaver & Leao, 2012b; UNAIDS, 2020). In South Africa, education on sexuality led to a 33% reduction in genital herpes

among young people (UNFPA, 2016). A systematic review by Mavedzenge and colleagues found that HIV education in schools positively impacted important HIV-related outcomes, such as self-reported sexual risk behaviors, voluntary medical male circumcision (VMMC), HIV testing and counselling (HTC), condom use, HIV treatment and provision of sterile injecting equipment (Mavedzenge et al., 2014). The South African government and other stakeholders have rolled out extensive interventions at national and local levels to mitigate the impact of HIV (SANAC, 2017). However, learners continue to engage in sexual activities at very young ages (Miller et al., 2017). This is evident by the high levels of teenage pregnancies and HIV incidence among the 10-19-year age group (UNAIDS, 2016; Statistics South Africa, 2019). A 2005 study by the Human Science Research Centre (HSRC) on the factors leading to high HIV incidence among teenagers living in a low income area in South Africa, found that more than 60% of the young people recruited for the study did not have comprehensive knowledge of HIV, including prevention strategies (De Wet et al., 2019; Simbayi et al., 2005). In addition, only about 50% of the youth reported to have used a condom during their last sexual encounter. According to a UNAIDS (2019) report, about 46% of young women and men aged 15-24 could correctly identify ways of preventing the sexual transmission of HIV (UNAIDS 2019). The youth continue to engage in irresponsible behavior which they learn through the internet including other social media platforms thereby exposing themselves to HIV and STIs as well as unwanted pregnancies (Kalichman et al., 2007; Mabaso et al., 2018).



Learners in South Africa have expressed different views on HIV education (Mashele, 2014). It has been pointed out that since LO educators fail to create relaxed environments, some learners end up developing a negative attitude towards the subject and its contents (Jacobs, 2011; Mashele, 2014; Nasheeda et al., 2019). With all these factors affecting the youth's knowledge on HIV in South Africa, it is interesting to note that most learners in low income areas in South Africa tend to ignore the positive and healthy lifestyles they are taught in LO due to misinformation on the internet and peer pressure (Simbayi et al., 2018; Simbayi et al., 2005). They then fail to realise that the subject is actually meant to transform their lives. Although learners would have received HIV education, students still lack a clear understanding of the subject of HIV (Mashele, 2014).

To turn around this situation, the manner in which HIV education is delivered in schools should be revised (Soul City, n.d.). This includes both the content to be taught as well as the implementation of the curriculum (Timol et al., 2016; UNICEF, 2018b). Kalichman and colleagues (2007) point to giving HIV training to LO educators so as to improve teacher efficacy in the subject thereby improving implementation of the curriculum (Kalichman et al., 2007). Another strategy that can be used to improve the impact of HIV education in schools is supporting school processes to develop an HIV policy which is meant to guide HIV education (Herr et al., 2012). Such a policy should take into consideration the environment in which the school is situated so as to ensure ownership by the students themselves, educators as well as community members (Francis & DePalma, 2014).

HIV education in South African schools has not brought about desired results (Soul City, n.d.). It was found that only 5% of schools were providing comprehensive education on sexuality in South Africa in 2016 and the government aimed to increase it to 50 percent (SANAC, 2017). This indicates that the DBE policy of including HIV education in LO has so far not been able to yield the desired results of reducing HIV infection rates and teenage pregnancies.

Evidence has shown that programmes that take into consideration the context in which they are implemented tend to yield more positive results than a generalised one-size-fits-all approach (Nasheeda et al., 2019; Thaver & Leao, 2012b). HIV education in South Africa has shown positive results in more affluent schools compared to low income communities (Thaver & Leao, 2012a; Tolli, 2012). Moreover, school-based HIV programmes should go beyond HIV and include broader school development programmes in an attempt to improve school functioning and the school environment (Helleve et al., 2009; UNICEF, 2018b). Evidence have shown that the organisational characteristics of a school, including a supportive community, are important determinants of the success of school-based HIV education programmes (Vhethhe, 2011; UNICEF, 2018a). In terms of content, research has shown HIV education to be appealing to the youths if they are presented by role models as well as in the form of contextualized and brief visually stimulating content (Chandler-Coley et al., 2017). Thus, the schools should be able to draw relevant messages targeting their students.

2.5 : Educators' attitudes and perceptions on sexuality education and their ability to teach content

Educators' reception of HIV education in schools has not been positive (Hellevea et al., 2011; Nasheeda et al., 2019). The role of giving HIV information is to larger extent placed on the teachers' shoulders who typically are not well skilled or equipped to teach the subject matter (Helleve et al., 2009; Hellevea et al., 2011). Cultural values and beliefs also function as a hindrance to the delivery of HIV education in schools (Helleve et al., 2009). A study by Ahmed et al. (2009) which looked at educators' beliefs, attitudes and behaviors with regards to sexual and reproductive health, revealed that educators are conflicted about HIV education (Kirby et al., 2007). For example, when the education on HIV is conflicting with the HIV educators' values and beliefs (Ahmed et al., 2009). In some instances, instead of teaching safer sex practices, educators are said to be promoting abstinence among learners (Helleve, 2009; Francis et al., 2014). This means that an issue such as condom use is neglected as it is conflicting with the promotion of abstinence (Francis 2014; Mathews et al., 2006). In addition, the environment in which the school is situated plays a major role in the way teachers deliver HIV education (Sani et al., 2016). In most cases, a school should mirror the values of the community in which it is located (Marshall et al., 2020). Thus teachers in most conservative communities tend to uphold cultural values of the communities in which they are teaching and often opt to promote abstinence according to social discourse (Helleve et al., 2009). Therefore, HIV education in schools is compromised while its learning outcomes will not be realized.

Notwithstanding the barriers to the delivery of HIV education in schools, enabling factors for teachers in their daily work have been reported. Previous teaching experience in health education has been identified as a factor that enables LO educators deliver their duties with ease (Herr et al., 2012). In an American study on teachers' perceptions on HIV and sexuality, Herr and colleagues found that the teachers with prior experience in health education were able to implement comprehensive HIV education compared to those without prior experience (Francis & DePalma, 2014; Herr et al., 2012). This implies that teachers with no experience in health education should be given enough time to gather the necessary experience before they offer such classes to students.

In addition to experience in teaching health education, one of the strongest elements required in the implementation of HIV education is teacher training (Ahmed et al., 2009; Mathews et al., 2006; Sani et al., 2016). When teachers are given training on HIV, their level of confidence in implementing the curriculum is raised which increases the possibilities of better outcomes (Nasheeda et al., 2019). A 2006 study by Mathews and colleagues on the factors influencing implementation of HIV education in schools, found that educators with HIV training were more confident to implement the curriculum when compared to educators without HIV training (Mathews et al., 2006). This is despite the fact that educators are supposed to be multi-tasked in their work environment (Herr et al., 2012). No prior training was given to educators in South Africa when HIV education was introduced and teachers had no option but to teach the subject (Smith & Harrison, 2013). In a study conducted by Hellevea et al. (2011) on teachers' perspectives towards HIV and education on sexuality, it was found that educators felt that they were mandated to teach the subject and it was difficult to step out of that role as sex educators (Hellevea et al., 2011).

2.6 : Knowledge, attitudes and practices surveys

The knowledge, attitudes and practices (KAP) surveys provide access to both quantitative and qualitative information (USAID, 2011). The use of surveys is most common in HIV related research amongst the youth as the topic is sensitive. Self-administered questionnaires would give the youth confidence to give their views without fear or prejudice (USAID, 2011). The KAP survey measures the effectiveness of the health education activities' ability to change health related behaviours (Fonner et al., 2014a; USAID, 2011). In addition, the KAP survey can suggest intervention strategies that reflects cultural specific activities that are suited to the respective population that is involved (USAID, 2011).

The KAP surveys have been widely adapted in order to reduce biases that may be caused by language and cultural differences. In recent years, multicultural and multinational research studies have multiplied, increasing the need for questionnaire adaptation (Beaton et al., 2000) (Andrade et al., 2020). Most KAP questionnaires were originally developed in English and require translation into local languages while taking into consideration the context and culture of the country. Other factors to be considered during adaptation of questionnaires are age, the country it was developed as

well as the country in which it will be used (Beaton et al., 2000) (Andrade et al., 2020). Considering all these factors will ensure equivalence between the original questionnaire and the one that will be adapted.



CHAPTER 3: METHODOLOGY

3.1 : Research Design

In this study, learners' knowledge of HIV/AIDS, attitudes towards HIV education and risky sexual practices were assessed using a quantitative descriptive cross-sectional survey. By nature, a cross sectional descriptive study is relatively quick and easy to conduct as all data on all variables is collected at once (Christensen, 2014). It allows attributes of a larger population or groups to be inferred from the small sample that was studied (Stephanie, 2016).

3.2 : Target population

According to the School Principal, the school enrolls an average of 1500 learners yearly who would have spent their school years in the rural Eastern Cape or Cape Town black community townships. (R Mazorodze, personal communication, 25 October 2018). Therefore, the study population for this research were 1000-1500 Grade 12 learners at school X in the Western Cape province of South Africa who were enrolled to re-write matric subjects they did not do well in their previous Matric exam sitting. These were therefore Grade 12 learners at school X enrolled to sit for the 2020 Matric examinations who were above 18 years of age whose Matric result record indicated they passed Life Orientation. This age group was suitable as they are deemed capable of understanding sexual issues and were expected to have gone through the entire LO School Curriculum.

3.3 : Aim and Objectives

Aim

To describe knowledge and attitudes towards HIV/AIDS education and risky sexual practices among Grade 12 learners at a finishing school in Capet Town South Africa.

Objectives

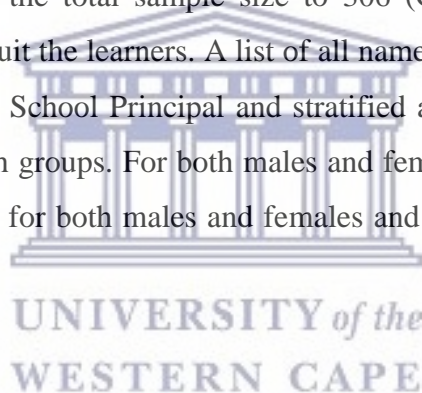
The objectives of this study were:

- To describe learners' knowledge about HIV/AIDS

- To describe learners' attitudes on HIV/AIDS education in Life Orientation
- To describe learners' risky sexual behaviours
- To describe learners' preferences pertaining to HIV/AIDS education in schools

3.4 :Sample size and procedure

According to the School Principal, out of a total of around 1500 Grade 12 learners in the school, it was estimated that about 1000 fell within the designated criteria. The sample size was estimated using a statistical table of statistical values assuming a +/- 5% margin of error with 95% Confidence Interval (Fischer & Yates, 2003). Therefore, 278 learners were recruited as the sample for the study. To allow for non-respondents, incomplete and defaced questionnaires, an extra 10% oversample was allowed making the total sample size to 306 (Christensen, 2014). Systematic random sampling was used to recruit the learners. A list of all names within the required age group was obtained with the help of the School Principal and stratified according to gender. A number was assigned to each name in both groups. For both males and females an interval was calculated using the total number of learners for both males and females and the sample required from each group.



3.5 Data Collection

In this study, data was collected in September of 2020 by means of a self-administered standardized questionnaire to gather information on Grade 12 learners' knowledge of HIV/AIDS, attitudes towards HIV education in secondary schools as well HIV related sexual practices. The questionnaire was developed by adopting Family Health International (FHI) HIV/AIDS/STD Behavioral Surveillance Questionnaire (Family Health International (FHI, 2000). This questionnaire which has been adapted to the South African setting is appropriate for this study as it was designed for unmarried male and female youths 15-24 years of age and so the questions were considered relevant to the population in this study (WHO, 2017). The questionnaire was tested for both validity and reliability before being given to learners.

The questionnaire for this study was piloted for validation within the school among ten students not recruited for this study to check for comprehension and whether it is culturally appropriate (Beaton et al., 2000). This group was debriefed and informed that their inputs to be sought were only for the purpose of modifying the final questionnaire. The study instrument was in English as all the learners were able to read and comprehend in English as English is the medium of communication at the school. The students who participated in the validation process indicated that they could comprehend the questions given on the questionnaire. The period on which information on past sexual experience was sought was reduced from one year to six months in the final questionnaire for better recall.

The questionnaire comprised of different sections questioning: Learners' demographic variables which included, gender, religion and economic status among others; HIV/AIDS knowledge; attitudes towards HIV education in schools; HIV related behaviors of learners and learners' preferences with regards to HIV education. The researcher was responsible for all the data collection due to constraints in resources to recruit research assistants.

3.6 : Data Analysis

The numerically coded data gathered were first captured into excel spreadsheet and imported into Statistical Package for Social Science (SPSS) i.e., IBM® SPSS® Statistics Version 25 (2019) where it was checked, cleaned and then analysed. For descriptive analysis, continuous data like age, means with Standard Deviation were used. For categorical variables such as gender, data was analysed and given as frequencies, percentages and presented in tables. Categorical variables like HIV/AIDS knowledge, attitudes towards HIV education as well as practices were coded for analysis purposes and the data was presented in tables, pie charts and graphs.

For qualitative variables, the number, and percentages of subjects in each category was given. Bivariate correlation tests at 95 % confidence intervals (Cis) were calculated through a logistic correlation model to determine associations between levels of knowledge with attitudes and practices among certain subgroups. The strengths of associations between measured variables was

calculated using odds ratio and adjusted odds ratios with 95 % CIs and significance level of 0.05. Chi-square analysis were used to test associations among subgroups (male/female, urban or rural) in which the p-values were interpreted for statistical significance. T-tests were used to compare subgroup scores.

To evaluate knowledge and practices, the students were required to provide “yes” or “no” answers. For attitudes and perceptions towards HIV education in schools related questions, students were required to “agree” or “disagree” with the given statements. A score of 1 for every correct answer and 0 for a wrong answer was assigned for knowledge and practice related questions. For attitude and practice-related questions, a score of 1 was assigned for every positive answer and 0 for every negative answer. The scores were then summed up to generate an overall score for each participant. Levels of knowledge were categorized as “low: to those whose score was below 50 percent, “moderate” for those who scored between 51 and 74 percent and “high” for those who scored 75 percent and above. The score for attitudes and perceptions and practices was categorized into “negative” and “positive” which was based on the mean score. Those scoring less than mean scores for attitudes and perceptions were classified as having negative attitudes and those scoring above the mean scores were classified as positive. For practices those scoring less than the median scores were classified as “risky” practices while those scoring equal or more than the median scores were classified as “safe” behavioral practices. This scoring cut offs have been informed by research that has been conducted by other researchers for instance a study by Adeboye et al (2016) used the same scoring cut-offs as they looked at HIV/AIDS KAP of high school students in Eastern Cape South Africa (Adeboye et al., 2016).

3.7 : Validity

Validity means that a study instrument measure accurately what it is supposed to measure (Heale & Twycross, 2015). The strength of this study was rooted on the use of an adequate sample size, the use of probability sampling (systematic sampling), the inclusion of both sexes as well as the use of items from a validated survey instrument.

3.8 : Limitations

One limitation to this study was absenteeism of students. Learners who were absent could have represented a distinct group whose responses could be different and influence the results. However, to overcome this, the data was collected on a Tuesday and Wednesday whereby trends have shown that all learners attend classes on these days. The use of quantitative methods in as much it allowed the study of multiple outcomes, the study could have benefitted from a mixed-methods approach to include qualitative methods in addition to quantitative especially for questions on attitudes and preferences. This would have enabled greater understanding of the subject under study. However, use of mixed methods was beyond the scope of this study

3.9 : Ethical Considerations

An application for ethics approval was sought and granted from the University of the Western Cape's Biomedical Research Ethics Committee (BMREC) to undertake the study (see Appendix 6). As the study involved school going learners and included aspects concerning the Department of Education Curriculum on Life Orientation, ethics approval was also sought from the Western Cape Provincial Department of Education (WCED), (see Appendix 4). Permission to conduct the study was granted by the school authorities. The name of the school and community in which the school is situated have been withheld to protect the identity of the participants and the school at large. Participation in the study by the learners was voluntary. Since the participants are 18 years and older, they were provided with an information sheet with details of the research study, requesting their participation and assuring them of confidentiality. They were then asked to sign a consent form once they consented to participate in the study. To ensure anonymity, participant identification numbers were used and learners were asked not to write their names on the questionnaire. All the completed questionnaires were kept in a secured box in the researcher's office at the workplace. It was anticipated that the study will not cause any harm to students. However, given the nature of the study, which could have been sensitive to some participants, there was a possibility of minimal risk/discomfort to participants. A professional school counsellor was available to attend any participant who required any emotional support or counselling because

of the study. All records of information for this study are to be kept for 5 years after which they will be destroyed (questionnaires) and the electronic data sheets will be deleted.

3.10. Reliability test

When collecting primary research data using instruments like the questionnaire, conducting a reliability analysis is essential. To determine what to keep, change, and delete, a reliability test is necessary. The way the questions are written can affect the results of the study. The majority of studies use the Cronbach's alpha coefficient to determine how reliable an instrument is. The same method was used in the current study. The questionnaire was well-structured, as shown by the results in Table 3.1, with Cronbach's alpha coefficient values ranging from 0.707 to 0.814. According to Hair et al. (2011), the Cronbach's alpha coefficient for a well-structured questionnaire should be greater than 0.7. Since the questionnaire used in this study complies with the fundamental requirements, reasonable results can be expected. Table 3.1 displays the reliability analysis results.

Table 3.1: Reliability test results

Item	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
HIV/AIDS knowledge	.748	.757	10
Learners' attitudes towards HIV/AIDS education in schools and HIV/AIDS education preferences.	.707	.711	22
Sexual Practices	.814	.822	6

CHAPTER 4: RESULTS

4.0 Introduction

This chapter focuses on the data analysis, interpretations and presentations. The research findings are presented in tabular forms and graphs.

4.1 Socio-demographic and economic background

The frequency distributions of the socio-demographic and economic backgrounds of students are presented in the Tables 4.1. Two hundred and fifty-one students participated in the study, of whom, 5.9 % (90 students) were male while 64.1 % (161) were female. Their ages ranged from 15 to 26 with 19,8 being the mean age with a standard deviation of 1,5. Slightly above half, 52.6 % (n=132) of the participants indicated that they spent most of their school years in the rural areas while 47.4% (n=119) spent their school years in the urban areas. About two-thirds (66.1%) of the students listed their mother as the person paying their school fees while 25.5% listed their father and 8.4 % listed either government scholarship, sex partner or that they were self-paying. More than half (53.8) of the students had missed school due to lack of money with most of these (43.8%) answering “sometimes” when asked if they had missed school. However, 44.2% indicated that they had never missed school due to money issues and only 2% reported that they did not know.

Table 4.1: Socio-demographic background (n=251)

	Male Female	90 Frequency	35.9 Percentage (%)
Gender	Male	90	35.9
	Female	161	64.1
Age in years	18-20	179	71.3
	21+	72	28.7
Attended rural or urban	Rural	132	52.6
	Urban	119	47.4

		Frequency	Percentage (%)
Person paying school fees	Mother	166	66.1
	Father	64	25.5
	Sex Partner	4	1.6
	Government	6	2.4
	Scholarship		
Missed school because Of Money issues	Very often	21	8.4
	Often	4	1.6
	Sometimes	110	43.8
	Never	111	44.2
	Don't know	5	2
Access to internet	Yes	94	62.5
	No	157	37.5
Religion	Christianity	173	68.9
	Traditional Rel	63	25.1
	Islam	1	0.4
	No Religion	5	2
	Don't Know	6	2.4
	Missing	3	1.2
Own a smart phone	Yes	181	72.1
	No	68	27.1
	Missing	2	0.8
Family economic status	High income	9	3.6
	Middle Income	96	38.2
	Low Income	143	57
	Missing	3	1.2

The frequency distribution of the socio-demographic background displayed in Table 4.1 indicate that 62.5 % (n=157) of the students did not have easy access to internet. Only 94 (37,5 %) students had easy access to the internet. With regards to religion, the majority of the students, 68.9% were Christians. A good number, 25.4% belonged to the Traditional African Religion while only 1 student was Muslim. Two percent (5 students) of the students and 2,4 % indicated that they did not belong to any religion and did not know their religion respectively. While only 2 students did not respond to the question on whether they owned a smart phone, the majority of the students, 72.1% owned a smart phone and only 27.1 % did not own any smart phone. In terms of family economic status (using the participants own self evaluation of their families), more than half of the students (57%) indicated they were from low-income families while 38. % came from middle income

families. Only 3.6 % reported coming from high income families. About 71.3% of the students were aged between 18 and 20 years while 28.7 of the students were aged 21 years and above.

4.2 Knowledge of HIV

Students were asked to rate their level of knowledge on various questions to gauge their understanding of how HIV spreads. The questions covered topics such as shaking hands with an infected person, eating a meal with an infected person, sharing a needle that has already been used by an infected person, blood transfusions, mosquito bites, and sexual contact. Some questions were on measures to stop HIV transmission, emphasizing the use of condoms during sexual activity and faithfulness to one sexual partner.

Table 4.2 presents frequencies and percentage distributions of responses by students to questions regarding their knowledge of HIV transmission. The majority of the students, 89.2% knew that HIV could be transmitted through sexual intercourse. Only a few, 10.8% (27 students) did not think HIV could be transmitted through sexual intercourse. Although 62.2% of the students knew that HIV cannot be transmitted through mosquito bites, a good number of students, 37,8% did not know that mosquitoes do not spread HIV infection. Regarding the question on HIV being transmitted by sharing a meal with an infected person, 78.9% of the students answered “No” while 21.1% answered “Yes”. Most of the students 79.3% correctly answered that HIV could be transmitted by sharing a needle that has been used by an infected person. On the other hand, 20.7% believed that sharing a needle that has been used by an HIV infected person could not lead to HIV transmission. About three-quarters, 74.5% of the students knew that HIV infected pregnant women could transmit HIV to their unborn babies whilst 25.5% did not think infected pregnant women could transmit the infection to their unborn babies.

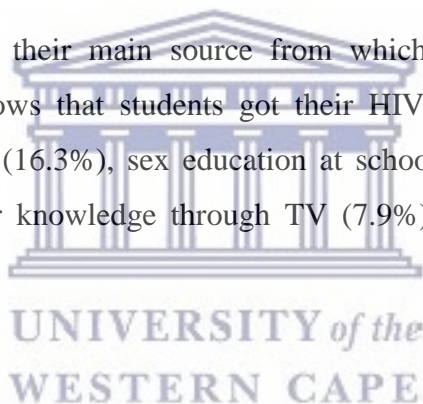
Table 4.2: Knowledge of HIV transmission (n=251)

	Frequency	Percentage
HIV can be transmitted through sexual intercourse.		
Yes	224	89.2
No	27	10.8

	Frequency	Percentage
HIV can be transmitted through mosquito bites.		
Yes	95	37.8
No	156	62.2
HIV can be transmitted by sharing a meal with an infected per		
Yes		
No	198	78.9
	53	21.1
HIV can be transmitted by sharing a needle that has been used by an infected person.		
Yes	199	79.3
No	52	20.7
Can a pregnant woman who is infected with HIV or suffering from AIDS infect the unborn baby?		
Yes	187	74.5
No	64	25.5
HIV can be transmitted by blood transfusion.		
Yes	216	86.1
No	35	13.9
HIV can be transmitted by shaking hands with an infected person.		
Yes	7	2.8
No	244	97.2
HIV can be prevented by properly using a condom during sexual intercourse.		
Yes	220	87.6
No	31	12.4
HIV transmission can be avoided by remaining faithful to one sexual partner.		
Yes	163	64.9
No	88	35.1
Only men should use condoms to prevent HIV infection during sex.		
Yes	220	87.6
No	12.4	12.4

As shown in the Table 4.2, relating to the question on whether HIV can be transmitted through blood transfusion, the majority of the students, 86.1% answered “Yes” while only 13.9% answered “No”. Almost all the students (97.2%) knew that shaking hands with an HIV infected person does not lead to viral transmission. However, seven students (2.8%) thought shaking hands with a person with HIV could lead to HIV transmission. With regards to the use of condoms in HIV prevention, 87.6% correctly answered “Yes” confirming that the use of condoms reduces HIV transmission. About 12.4% of the students did not believe the correct use of condoms can prevent HIV transmission. While about two-thirds, 64.9% of the students knew that being faithful to one sexual partner reduces HIV transmission, 35.1% did not. The majority of the students, 87.6% did not think that only men should use condoms to prevent HIV infection compared to only 12.4% who thought actually it is only men who should do so.

Students were asked to indicate their main source from which they received most of their knowledge of HIV. Figure 1 shows that students got their HIV knowledge from the internet (31.8%), friends (18.7%), family (16.3%), sex education at school (19.1%). Very few students indicated that they obtained their knowledge through TV (7.9%), radio (3.9%) or newspapers (1.9%) correspondingly.



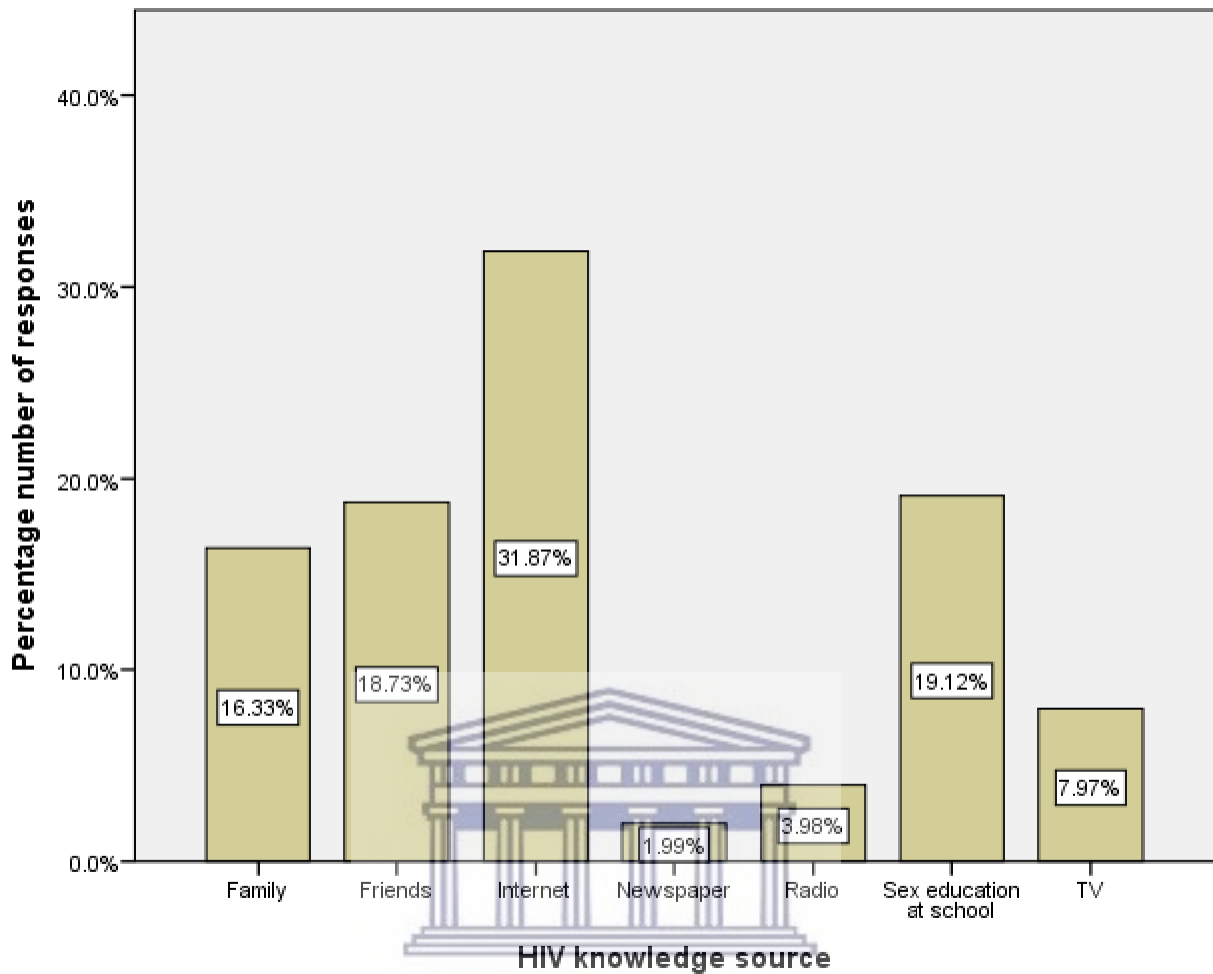


Figure 4.1: Sources of HIV knowledge

In order to ascertain each student’s score on knowledge of HIV transmission and prevention, a new variable “knowledge score” was created. Each correct answer was scored as “1” while an incorrect answer was scored as “0”. The sum of individual scores were categorized as low (0-4); moderate (5-7) and high (8-10) as given in previous studies (Murwira et al., 2021). It was found that almost three quarters (72.1%; n=180) of the students displayed having a high knowledge of HIV, while about 22% (n=55) and 5% (n=12) displayed moderate and low levels of knowledge of HIV prevention and transmission respectively. The knowledge level on HIV transmission is presented in Figure 4.2.

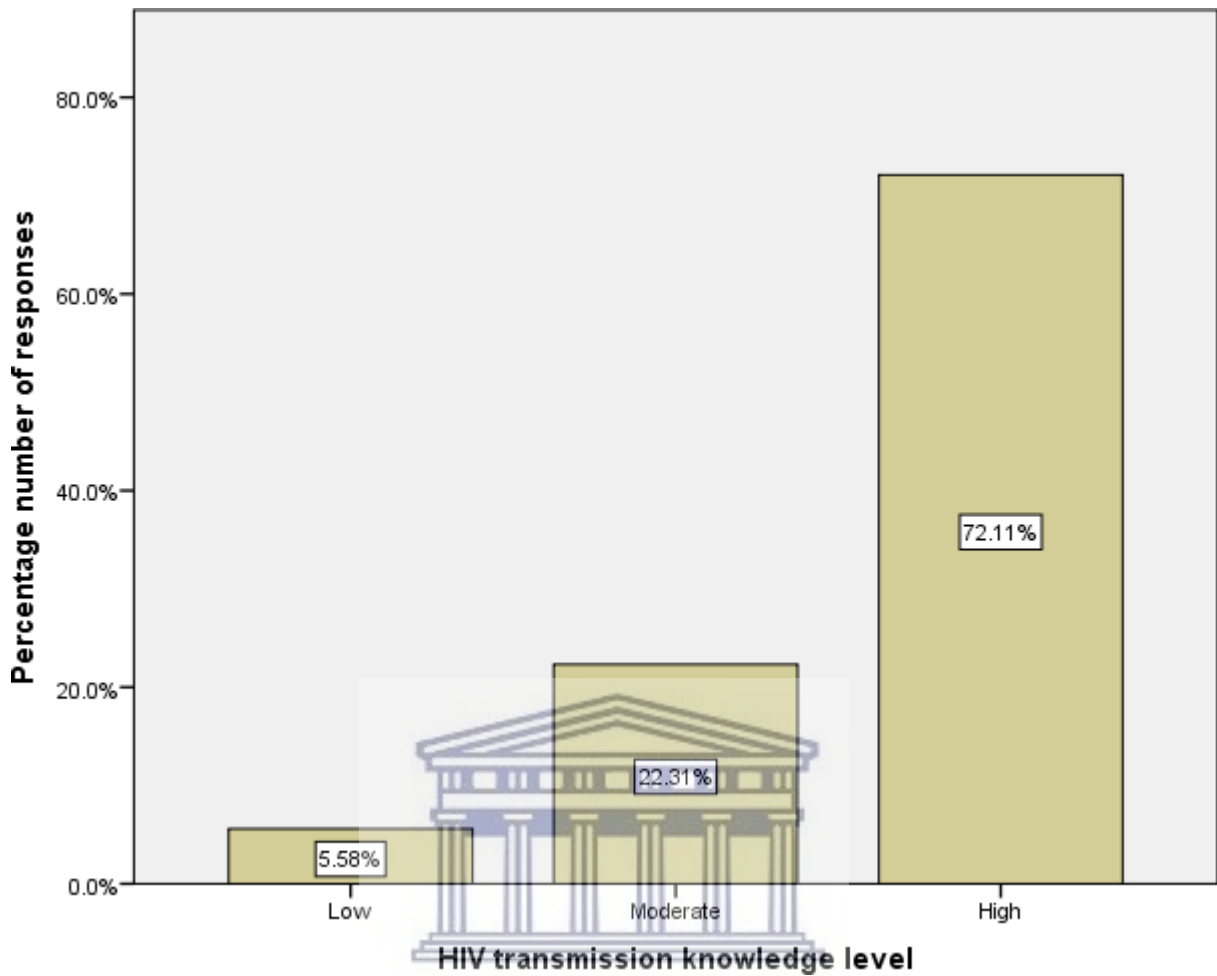


Figure 4.2: HIV transmission knowledge levels

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4.3 Learners' attitudes towards HIV/AIDS education in schools and HIV education preferences.

One of the goals of the study was to describe learners' views about HIV instruction in Life Orientation. Table 4.3 lists the responses in summary form.

Table 4.3: Learners attitudes towards HIV education in schools and HIV education preferences.

Item	Disagree	Agree	Don't know
In my own opinion HIV education is a waste of time.	88	10.4	1.6
In my opinion Life Orientation teachers are the best to teach HIV/AIDS education in schools.	38.6	56.6	4.8
In my opinion HIV/AIDS should not be taught in schools.	83.7	14.3	2.0
In my opinion, HIV/AIDS should be taught outside the school only.	84.5	12.7	2.8
Through HIV/AIDS education in school, I was empowered to make informed decisions.	24.3	59.4	16.3
Teachers did not make HIV/AIDS education exciting in class.	41.8	52.6	5.6
HIV/AIDS education I got was not complete.	43.0	45.4	11.6

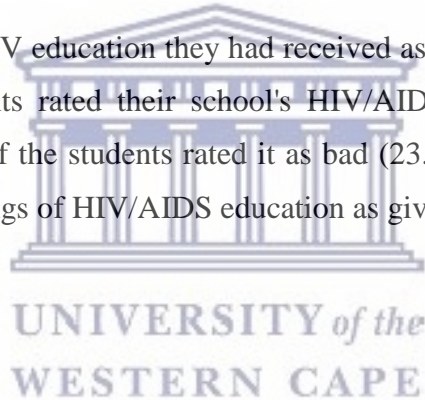
As shown in Table 4.3, more than 80 % of the students strongly supported that HIV education in schools was not a waste of time and that HIV should be taught in schools. About half of the students were not satisfied that Life Orientation Educators were the best to teach HIV education, that teachers made HIV education exciting in class as well as that through HIV education in schools, they were empowered to make informed decisions. Slightly less than half of the students (45.4 %) believed that the HIV education that they got in their schools was not complete while about 43% found it complete.

Students were asked if they would attend Life Orientation if they would only receive HIV education in this subject. The majority of students (69.7%) said they would attend Life Orientation if only they included courses on HIV/AIDS while about 30% indicated that they would not attend. In response to whether the students viewed HIV education was beneficial to them, 91.2% of the students indicated that HIV/AIDS education was beneficial to them while 8.8% suggested that HIV/AIDS education was not beneficial to them as shown in the Table 4.4.

Table 4.4: HIV education preferences

	Frequency	Percentage
Would you attend Life Orientation if only they teach lessons on HIV/AIDS?		
Yes	175	69.7
No	76	30.3
Total	251	100
HIV/AIDS education was beneficial to me.		
Yes	229	91.2
No	22	8.8
Total	251	100

Students were asked to rate the HIV education they had received as good, moderate or bad. About two-thirds (68.5%) of the students rated their school's HIV/AIDS education they obtained as moderate. Twenty-three percent of the students rated it as bad (23.1%) while only 8% rated it as good. Figure 4.3 presents the ratings of HIV/AIDS education as given by the students.



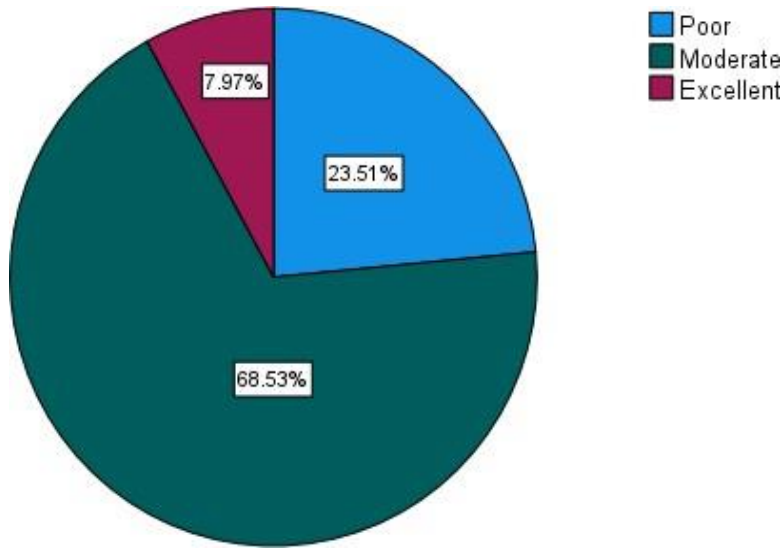


Figure 4.3: Students' ratings on HIV education in schools

Students' responses to attitude questions were recoded as positive or negative. Individual positive and negative responses to questions on attitudes toward HIV education in schools were documented, scored and summed up. All positive answers were scored as "1" while negative responses were scores as "0". A mean score for all the students was calculated. Any student whose score was below the mean score was classified as having a negative attitude while any student whose score was above the mean score was classified as having a positive attitude towards HIV education in schools. Students' attitudes towards HIV education in schools are summarized in Figure 4.4.

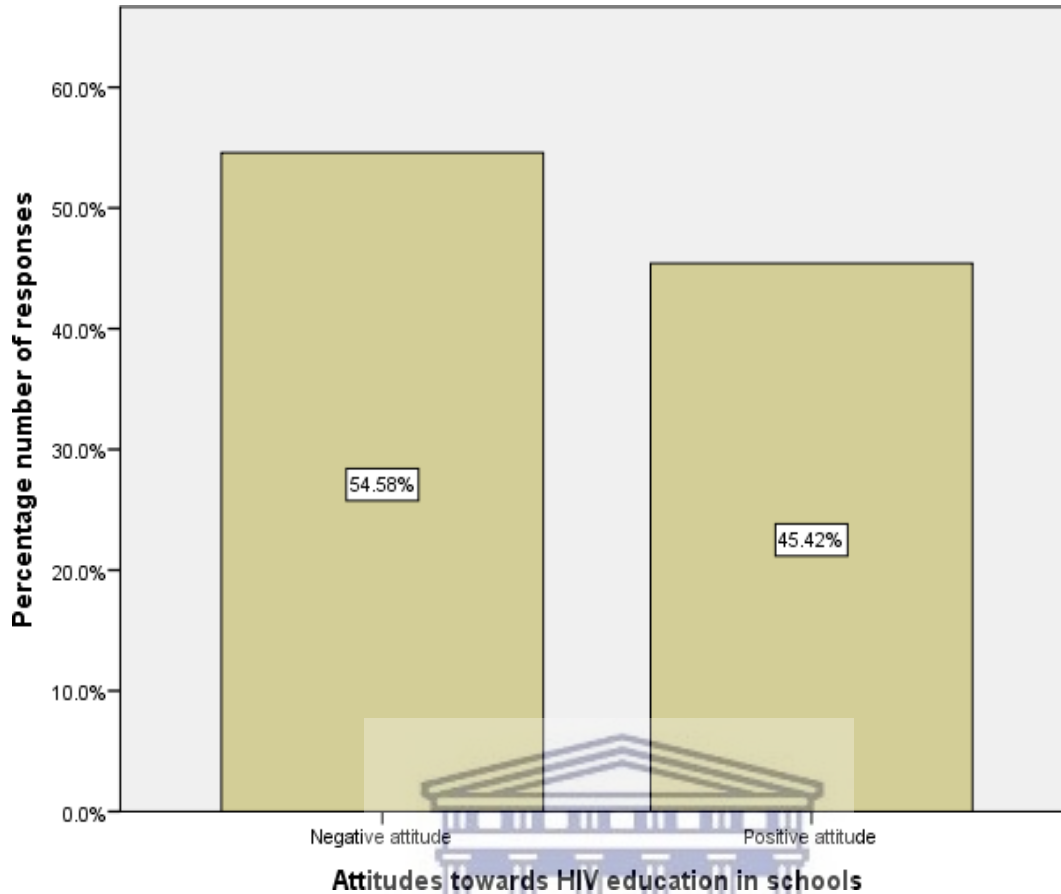


Figure 4.4: Attitudes towards HIV education in schools

Results on sum of individual score on attitudes towards HIV education in schools indicated that only 45.4% of students had positive attitude toward HIV education in schools, compared to 54.58% of students who had negative thoughts as shown in Figure 4.4.

The study also sought to explore students' preferred platform for receiving HIV education. Students were asked to choose from either: peer education in schools, community workshops, social media on the phone, young educators in schools, role models like soccer stars as well as from church. The results are shown in Figure 4.5.

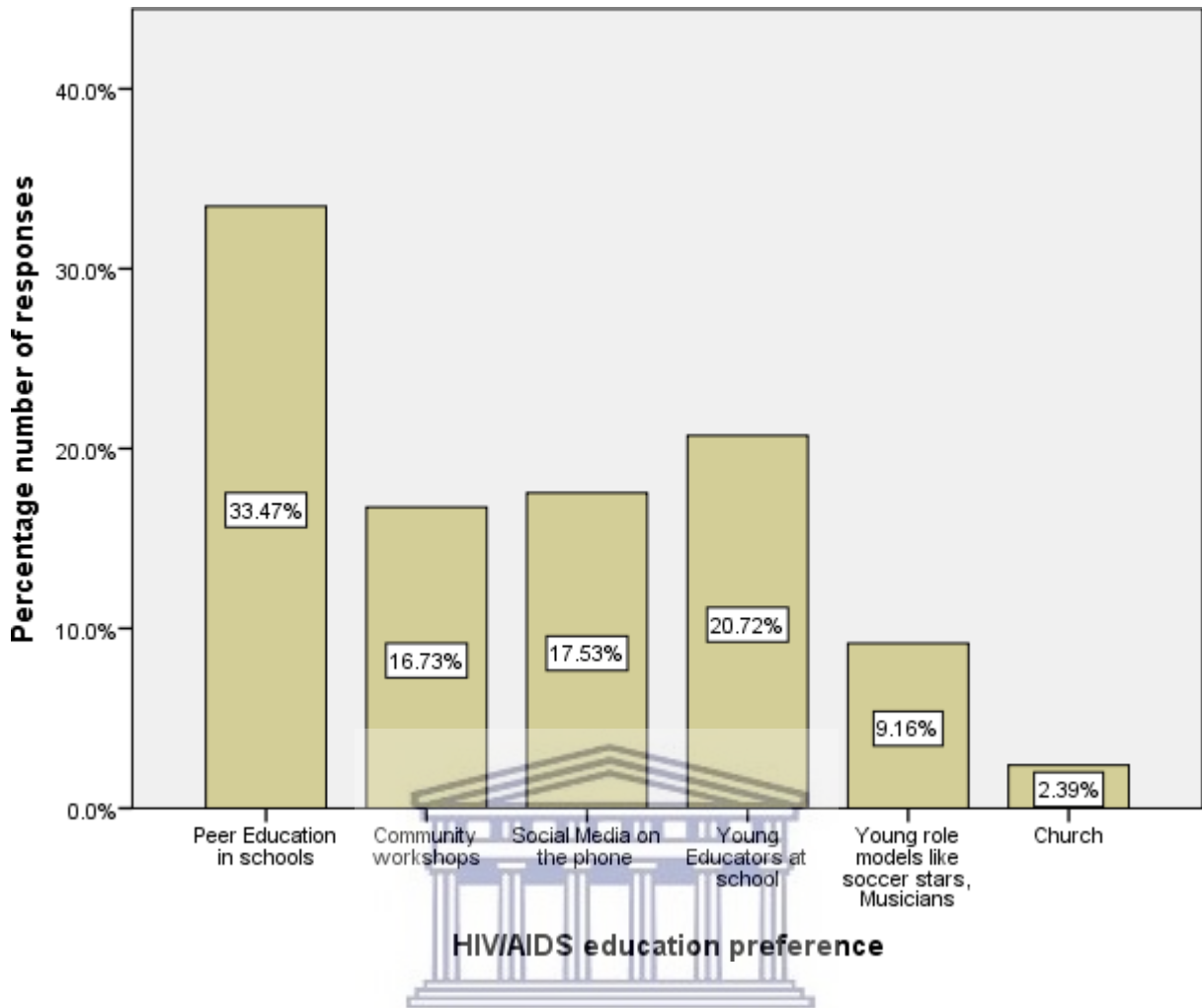


Figure 4.5: HIV/AIDS education preferences

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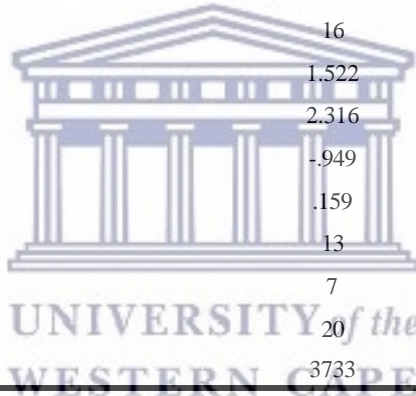
Figure 4.5 shows that about one third of the of students preferred receiving their HIV information from peer educators (33.4%). Young educators in the school were the second preferred method which was chosen by about one-fifth (20.7%) of the students followed by social media on phone conversations (17.5%), and community workshops (16.7%). Few students said they prefer receiving information from youthful role models like singers, soccer players (9.1%), or the church (2.3%).

4.4 Reported Sexual Practices

One of the objectives of the study was to identify the learners' sexual habits and risky sexual behaviors. Students were first asked to indicate the age at which they had their first sexual intercourse. Results indicate the earliest age was 7 years while the latest was 20 years. The mean age for first sexual intercourse was 15.9 while the median and mode tallied at 16 years with a standard deviation of 1.52 as shown in Table 4.5 and Figure 4.6.

Table 4.5: Age at first sexual intercourse

At what age did you first have sexual intercourse?		
N	Valid	235
	Missing	16
Mean		15.89
Std. Error of Mean		.099
Median		16.00
Mode		16
Std. Deviation		1.522
Variance		2.316
Skewness		-.949
Std. Error of Skewness		.159
Range		13
Minimum		7
Maximum		20
Sum		3733



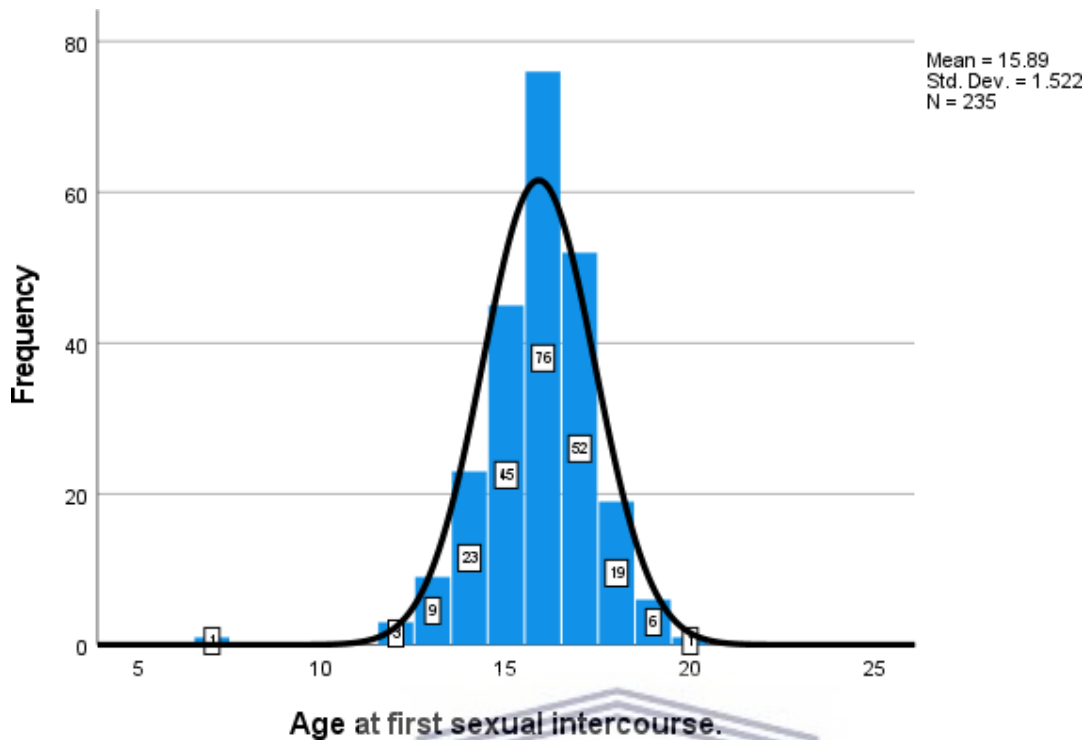


Figure 4.6: Age at first sexual intercourse

Questions on sexual practices were asked to students. Table 4.6 summarises responses to some sexual practices questions. According to the results in Table 4.6, 74.1% (n=186) of the students admitted that they had had sex during the previous six months while 21.5% (n=54) did not. More than three quarters (79.3%) of the students reported having previously used a condom, while 15.9% never used a condom. Furthermore, 89.2% of the students indicated that no one had ever paid them (either with money or other presents) to have sex with them whereas only about one-tenth (10.4%) reported having been paid. About 39% of the students who had sexual intercourse in the last six months and the last three sexual encounters were with the same person while 43.8% indicated that it was not with the same person.

Table 4.6: Sexual practices

Item	No %	Yes %	Never had sex%
Have you had sexual intercourse in the last six months?	21.5	74.1	4.4
If yes, last three sexual encounters you have had in the last six months was one person?	43.8	39.0	17.1
Has someone ever paid you (money or other gifts) to have sex with you?	89.2	10.4	0.4
Have you ever used a condom?	15.9	79.3	4.8

Figure 4.7 shows that about half (50.2%) of the students did not have an HIV test in the previous year while 49.8% managed to get tested. The results showed that 51.4% of the students did not use a condom on their last sexual encounter whereas 48.6% used reported having used one. It can be seen that 59% of the students were unaware of their HIV status while only 41% knew their HIV status. The majority of the students reported that they don't use injectable drugs as shown by the high percentage of 89.6% while only about 10% indicated that they use injectable drugs. Furthermore, none of the students reported sharing needles with other drug users. An overview of these responses is shown in Table 4.7. The responses were counted on a nominal scale of "Yes" or "No."

Table 4.7: Sexual practices

Item	No %	Yes%
The last time you had sex, did you and your partner use a condom?	51.4	48.6
Have you ever been tested for HIV in the last 12 months?	50.2	49.8
Do you know your HIV status?	59.0	41.0
Do you use injectable drugs?	89.6	10.4
Do you share needles with other drug users?	100.0	0.0

Figure 4.7 presents proportions of students' responses to the question on condom initiation during the last sexual encounter. About 28% (n=71) of the students admitted to having personally initiated condom use during the last sexual encounter of whom 35 students were male and 36 were female. One quarter (n= 63; female=48, males=15) of the students reported that their sexual partner had initiated condom usage while 18% responded that it was a joint decision between them and their sexual partner. Only 13% of the students could not remember who initiated condom usage and 15.5% indicated that they had never used a condom. Chi-square tests showed a statistically significant association between the person who initiated and gender, $p=0.027$.

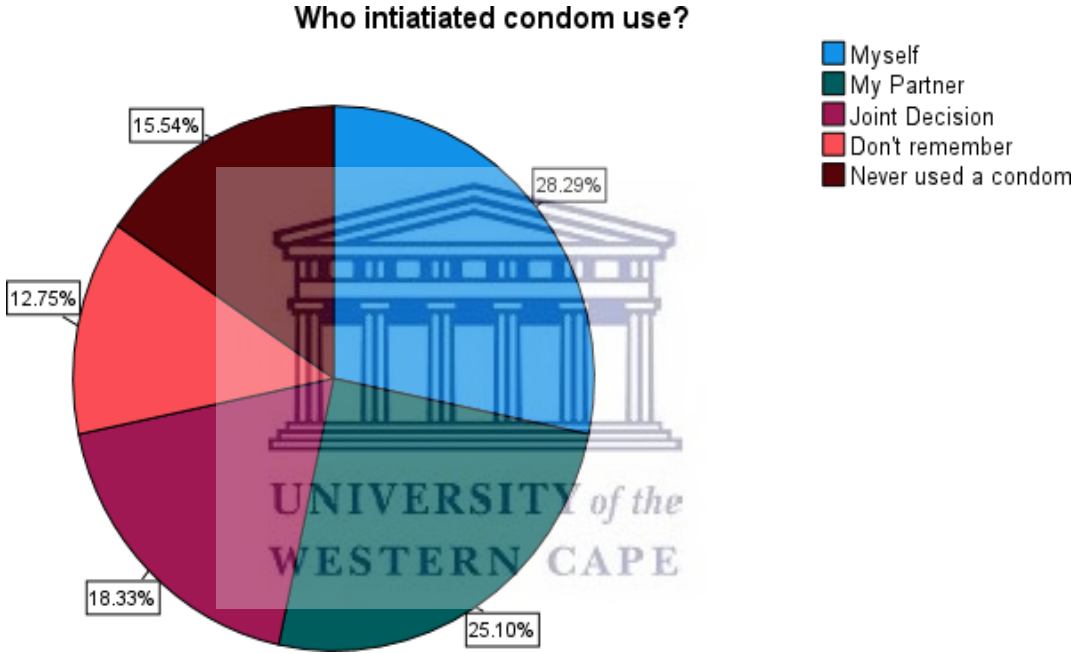


Figure 4.7: Person who initiated condom use in last sexual encounter

Figure 4.8 shows chi-square results to test the relationship between gender and condom initiation.

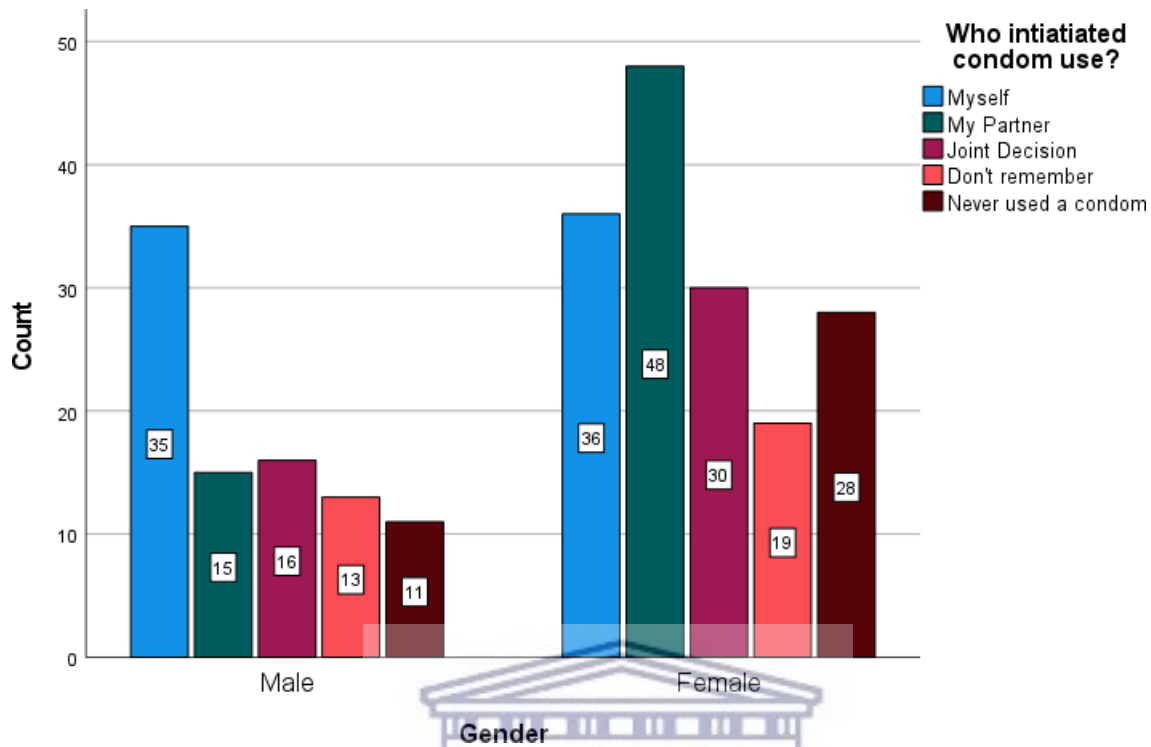


Figure 4.8: Relationship between gender and person who initiated sex in last sexual encounter.

All responses on sexual practices questions for each student were recorded and a total for each student was created and obtained. Responses indicating safer sexual practices that reduce HIV transmission like using condoms in the last sexual encounter, were coded as “1” while negative behavior unsafe sexual practices that increase the spread of HIV like having multiple sexual partners were coded as “0”. As in previous studies, a median for all individual scores on students’ responses was obtained and students whose individual scores were below the median was classified as risky sexual practices while scores above the median were classified as safe sexual practices. Figure 4.9 summarises results on students’ sexual practices.

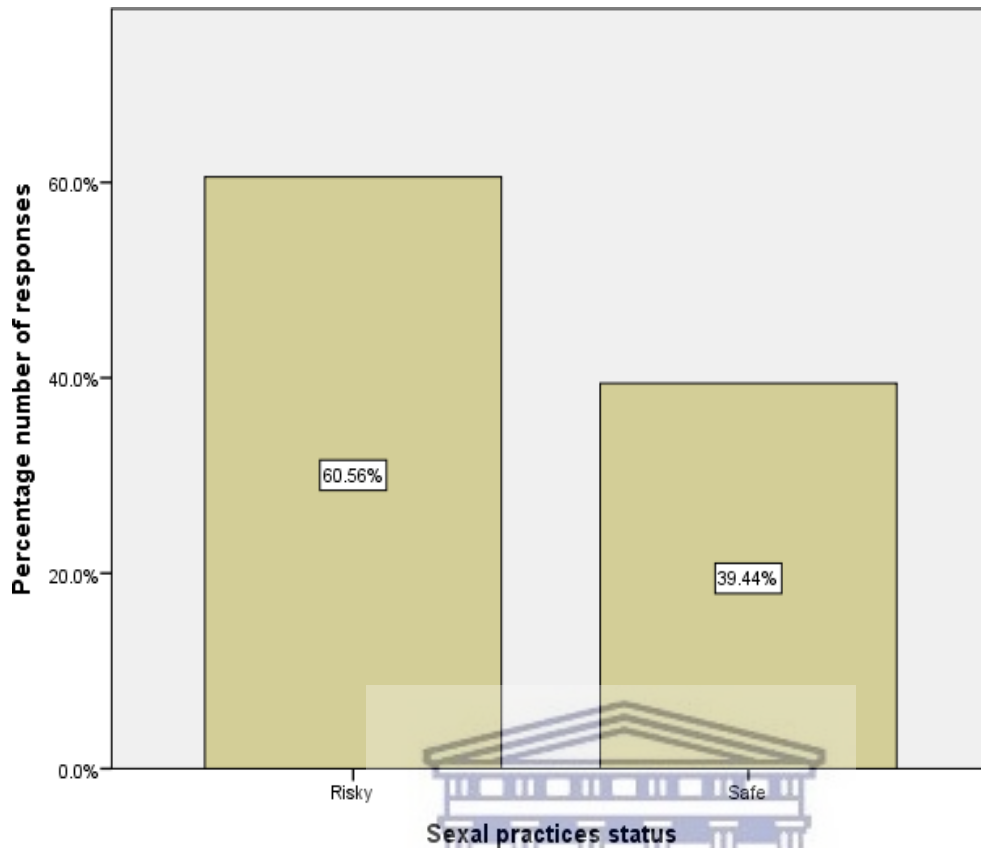


Figure 4.9: Sexual practices scores

Figure 4.9 demonstrates that the majority (60.56%; n= 151) of students practiced risky sexual behavior while about 40% (n=100) of the students engaged in safe sexual practices.

4.5 : Bivariate correlations

Bivariate correlation tests were performed to ascertain if there were any statistically significant relationships between certain variables. A bivariate correlation analysis was employed to examine the associations of HIV knowledge with attitudes towards HIV education in schools and sexual practices. Table 4.8 presents the results on the relationship between HIV knowledge and attitudes towards HIV education in schools.

Table 4.8: Relationship between knowledge and attitudes towards HIV education in schools

		Attitude	Knowledge
Attitude	Pearson Correlation	1	.292**
	Sig. (2-tailed)		.001
	N	251	251
Knowledge	Pearson Correlation	.292**	1
	Sig. (2-tailed)	.000	
	N	251	251

** . Correlation is significant at the 0.01 level (2-tailed).

Knowledge of HIV and attitude were positively and significantly correlated, as shown in Table 4.11 ($r=0.292$, $p<0.001$). This demonstrates that students with high and medium levels of knowledge were more likely to have views that were proportionately positive towards the teaching of HIV in schools than students with low levels of HIV knowledge.

The relationship between knowledge and sexual practices was examined and the results are presented in Table 4.9.

Table 4.9: Relationship between knowledge and sexual practices

		Knowledge	Sexual practices
Knowledge	Pearson Correlation	1	.625*
	Sig. (2-tailed)		.0616
	N	251	251
Sexual practices	Pearson Correlation	.135*	1
	Sig. (2-tailed)	.033	
	N	251	251

*. Correlation is significant at the 0.05 level (2-tailed).

Knowledge and sexual practices were positively and significantly correlated ($r = 0.135$, $p < 0.05$). This demonstrates that students with high and medium levels of knowledge were more likely to participate in safe sexual practices than students with low levels of knowledge.

4.5.1 : Association between knowledge of HIV transmission and learner's gender

To determine whether there is a significant relationship between knowledge of HIV transmission and learner's gender, a Chi-square test was used. The following hypothesis were formulated and tested.

H₀: There is no significant association between knowledge of HIV transmission and learner's gender.

Versus

H₁: There is a significant association between knowledge of HIV transmission and learner's gender. Table 4.10 presents the research findings.

Table 4.10: Association between knowledge of HIV transmission and learner's gender.

Gender * Knowledge level Cross tabulation					
		Knowledge Category			Total
		Low	Moderate	High	
Gender	Male	4.4	27.8	67.8	100
	Female	6.2	19.3	74.5	100
Total		5.6	22.3	72.1	100

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.568 ^a	2	.277
Likelihood Ratio	2.528	2	.282
Linear-by-Linear Association	.428	1	.513
N of Valid Cases	251		

The findings from crosstabulation as shown in Table 4.10 make it evident that there was no statistically significant relationship between gender and knowledge of HIV transmission. The likelihood value of 0.277, which is above 0.05, suggests this. Results in Table 4.13 support the null hypothesis which states that there is no statistically significant relationship between gender and knowledge of HIV transmission. This indicates that the gender of the student has no impact on their understanding of HIV transmission although 67.8% of male and 74.5% of female participants had high levels on knowledge of HIV transmission.

The study also examined the association between knowledge of HIV transmission and learner's economic status. A Chi-square test for independence test was used to examine the association. The Chi-square test was conducted under the following hypothesis:

H₀: There is no statistically significant association between knowledge of HIV transmission and learner's economic status.

Versus

H₁: There is a statistically significant association between knowledge of HIV transmission and learner's economic status.



The Chi-square results are displayed in Table 4.11.

Table 4.11: Association between knowledge of HIV transmission and learner's economic status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.118 ^a	3	.018
Likelihood Ratio	9.490	3	.023
Linear-by-Linear Association	.071	1	.790
N of Valid Cases	251		

Results from Table 4.11 reveal a statistically significant correlation between economic position and understanding of HIV transmission. The p-value= 0.018, which is below our selected level of significance of 5%, suggests this. The findings support rejecting the null hypothesis, and it is therefore possible to draw the conclusion that there is a statistically significant relationship

between knowledge of HIV transmission and a learner's socioeconomic standing. This suggests that the students' financial circumstances have an impact on their understanding of HIV transmission.

4.5.2: Association between knowledge of HIV transmission and learner’s place of residence.

The study also examined the association between knowledge of HIV transmission and learner’s place of residence. A Chi-square test for independence test was used to examine the association. The Chi-square test was conducted under the following hypothesis:

H₀: There is no statistically significant association between knowledge of HIV transmission and learner’s place of residence.

Versus

H₁: There is a statistically significant association between knowledge of HIV transmission and learner’s place of residence.

The Chi-square results are displayed in Table 4.12.

Table 4.12: Association between knowledge of HIV transmission and learner’s place of residence

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.173 ^a	1	.003
Likelihood Ratio	19.342	1	.007
Linear-by-Linear Association	.065	1	.024
N of Valid Cases	251		

According to Table 4.12's findings, there is a statistically significant association between a student's place of residence and their knowledge of HIV transmission. This is confirmed by the Pearson Chi-Square value of 22.173 and a p-value of 0.003 which is below the level of significance of 5%. The results are consistent with the acceptance of the alternative hypothesis, and it is therefore possible to draw the conclusion that there is a statistically significant correlation between a student's place of residency and their awareness of HIV transmission.

4.5.3: Association between attitudes towards HIV education in schools and learner's gender

A Chi-square test was conducted to evaluate whether there is a connection between gender and attitudes regarding HIV education in schools. The following theory was developed and put to the test.

H₀: There is no significant association between attitudes towards HIV education in schools and learner's gender.

Versus

H₁: There is a significant association between attitudes towards HIV education in schools and learner's gender.

Table 4.13 presents the research findings.

Table 4.13: Association between attitudes towards HIV education in schools and learner's gender.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.956 ^a	2	.620
Likelihood Ratio	1.004	2	.605
Linear-by-Linear Association	.528	1	.467
N of Valid Cases	251		

It is clear from the results in Table 4.13 that views about HIV education in schools and a person's gender do not statistically correlate. This is supported by the p-value, which is 0.620 and higher than the 0.05 cutoff point. Results from Table 4.13 confirm the null hypothesis, which holds that views regarding HIV education in schools and a student's gender do not significantly correlate in a statistically significant way.

4.5.4 : Association between attitudes towards HIV education in schools and learner’s economic status.

The study also looked at the relationship between students' economic situation and attitudes toward HIV education in schools. The association was investigated using a Chi-square test for independence. The following conditions were used for the Chi-square test:

H₀: There is no statistically significant association between attitudes towards HIV education in schools and learner’s economic status.

Versus

H₁: There is a statistically significant association between attitudes towards HIV education in schools and learner’s economic status.

The Chi-square results are displayed in Table 4.14.

Table 4.14: Association between attitudes towards HIV education in schools and learner’s economic status.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.040 ^a	6	.804
Likelihood Ratio	3.773	6	.707
Linear-by-Linear Association	.847	1	.358
N of Valid Cases	251		

Table 4.14's findings show that there is no statistically significant relationship between student's economic status and attitudes toward HIV education in schools. The probability value of 0.804, which is higher than the 5 percent level of significance suggests this. Given that the result is consistent with accepting the null hypothesis, it is possible to conclude that there is no statistically significant association between attitudes toward HIV education in schools and a student's socioeconomic status.

4.5.5 : Association between attitudes towards HIV education in schools and learner's place of residence.

The research looked at the relationship between a person's residence and views regarding HIV education in schools. We looked at the association using a Chi-square test for independence. Under the following assumptions, the Chi-square test was performed:

H₀: There is no statistically significant association between attitudes towards HIV education in schools and learner's place of residence.

Versus

H₁: There is a statistically significant association between attitudes towards HIV education in schools and learner's place of residence.

The Chi-square results are displayed in Table 4.15.

Table 4.15: Association between attitudes towards HIV education in schools and learner's place of residence

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.867 ^a	2	.238
Likelihood Ratio	2.989	2	.224
Linear-by-Linear Association	2.234	1	.135
N of Valid Cases	251		

The results of Table 4.15 show that there is no statistically significant correlation between a person's domicile and their awareness of HIV transmission. This is supported by a Pearson Chi-Square value of 2.867, a high p-value of 0.238, and a degree of significance over the typical 5%. It is possible to conclude that there is no statistically significant relationship between attitudes about HIV education in schools and a participant's place of residence because the findings are compatible with the acceptance of the alternative hypothesis.

4.6 : Logistic regression

To determine whether there is a statistically significant relationship between demographic factors and knowledge of HIV, a multiple logistic regression was used. The dichotomous nature of the responses to the HIV transmission knowledge variable informed the approach selection. Table 4.16 displays the findings of the analysis.

Table 4.16: Association between HIV transmission knowledge and demographic variables

	HIV transmission knowledge (%)		OR	95% C.I. for OR	
	No	Yes		Lower	Upper
Gender					
Male	19(21.1%)	71(78.9%)	Ref		
Female	33(20.5%)	128(79.5%)	1.135	0.462	0.683
Residence					
Rural	27(20.5%)	105(79.5%)	Ref		
Urban	25(21%)	94(79%)	1.497	0.374	0.831
Economic status					
High income	5 (55.6%)	4 (44.4%)	Ref		
Medium income	14 (14.6%)	82 (85.4%)	0.408	0.167	0.644
Low income	33 (22.6%)	113 (77.4%)	1.571	0.793	0.912
Religion					
Same No religion	3 (60%)	2 (40%)	Ref		
Christianity	28 (15.7%)	150 (84.3%)	1.254	0.651	2.435
Traditional	19 (30.2%)	44 (69.8%)	0.861	0.462	1.899
Islam	0 (0%)	1 (100%)	1.473	0.691	2.864
Internet					

	HIV transmission knowledge (%)		OR	95% C.I. for OR	
	No	Yes		Lower	Upper
No	35(22.4%)	121(77.6%)	Ref		
Yes	17(19.9%)	78(82.1%)	1.205	0.284	0.526

Ref =Reference group, OR=Odds ratio, CI=Confidence Interval, Bold figures indicate a significant result at the $p < 0.05$ level.

Gender, economic situation, residence, and internet access were all related to knowledge of HIV/AIDS. With an odds ratio of 1.1 women were more likely than men to be aware of the spread of HIV/AIDS. According to the odds ratio of 1.5, students who spend the majority of their time in urban regions are more likely to be familiar with HIV/AIDS transmission than students who spend the majority of their time in rural areas. The odds ratio of 1.2 shows that students with internet access are more likely than students without internet access to know how HIV is transmitted. With an odds ratio of 1.644, students from low-income homes were more likely to be aware of how HIV and AIDS are transmitted than students from high-income families. According to the odds ratio of 0.4, students from high income earner households were less likely to know about HIV/AIDS transmission than students from medium income earner families.

4.6.1 : Association between attitudes towards HIV education in schools and demographic variables.

To determine whether there is a statistically significant relationship between demographic factors and attitudes towards HIV/AIDS, a multiple logistic regression was used. Table 4.17 displays the findings of the analysis.

Table 4.17: Association between attitudes towards HIV education and demographic variables

	Attitudes towards HIV/AIDS		OR	95% C.I. for OR	
	Negative	Positive		Lower	Upper
Gender					
Male	54(21.5%)	36(14.3)	Ref		
Female	83(33.1%)	78(31.1)	1.715	0.637	1.843
Residence					
Rural	60(23.9%)	72(28.7)	Ref		
Urban	77(30.7%)	42(16.7)	0.526	0.384	0.863
Economic status					
High income	7 (2.8%)	2 (0.8%)	Ref		
Medium income	49 (19.5%)	47(18.7%)	1.745	0.755	1.684
Low income	81 (32.3%)	65(25.9%)	1.182	0.422	0.801
Religion					
No religion	6(2.4%)	5 (2.0%)	Ref		
Christianity	84(34.0%)	88(35.63%)	0.459	0.302	0.833
Traditional	44(17.8%)	19 (7.7%)	2.002	0.431	1.812
Islam	0 (0%)	1 (0.4%)	.792	0.136	1.414
Internet					
No	93(37.1%)	63(25.1%)	Ref		
Yes	43(17.1%)	50(19.9%)	1.274	0.655	1.816

Ref =Reference group, OR=Odds ratio, CI=Confidence Interval, Bold figures indicate a significant result at the $p < 0.05$ level.

Economic situation, residence, and religion were the only significant variables related to attitudes towards HIV education in schools. With an odds ratio of 0.5, those in urban areas were less likely than those in rural areas to have a negative attitude towards HIV education in schools. According to the odds ratio of 1.2, students from low-income homes were more likely to have a negative attitude towards HIV education in schools than students from high-income families. An odds ratio of 0.5 shows that, students from a Christianity group were less likely to have a negative attitude towards HIV education in schools than non-religious groups.

4.6.2 : Association between sexual practices and demographic variables

In order to ascertain whether there are statistically significant relationships between sexual habits and demographic factors such age, gender, economic status, religion, and internet access, Pearson chi-square tests were used. The analyses' findings are shown in Table 4.18.



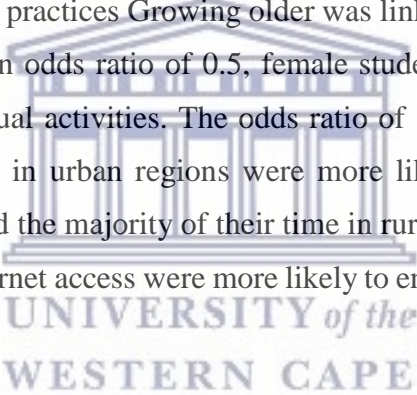
Table 4.18: Association between sexual practices and demographic variables

	Sexual practices		OR	95% C.I. for OR	
	No	Yes		Lower	Upper
Age					
<=20	100(55.8%)	79(44.1%)	Ref		
>20	51(70.8%)	21(29.1%)	1.026	.818	0.974
Gender					
Male	19(21.1%)	71(78.9%)	Ref		
Female	33(20.5%)	128(79.5%)	0.464	0.317	0.839
Residence					
Rural	27(20.5%)	105(79.5%)	Ref		
Urban	25(21%)	94(79%)	1.426	0.372	0.854
Economic status					
High income	5 (55.6%)	4 (44.4%)	Ref		
Medium income	14 (14.6%)	82 (185.4%)	0.328	0.136	0.672
Low income	33 (22.6%)	113 (77.4%)	1.581	0.526	0.811
Religion					
No religion	3 (60%)	2 (40%)	Ref		
Christianity	28 (15.7%)	150 (84.3%)	0.139	0.466	0.752
Traditional	19 (30.2%)	44 (69.8%)	1.582	0.581	0.889

	Sexual practices		OR	95% C.I. for OR	
	No	Yes		Lower	Upper
Islam	0 (0%)	1 (100%)	0.764	0.329	0.624
Internet					
No	35(22.4%)	121(77.6%)	Ref		
Yes	17(19.9%)	78(82.1%)	1.300	0.403	0.769

Ref =Reference group, OR=Odds ratio, CI=Confidence Interval, Bold figures indicate a significant result at the $p < 0.05$ level.

Age, gender, economic level, place of residence, religion, and availability of the internet were all discovered to be related to sexual practices Growing older was linked to a higher risk of engaging in unsafe sexual activity. With an odds ratio of 0.5, female students were less likely than male students to engage in unsafe sexual activities. The odds ratio of 1.4 indicates that students who spend the majority of their time in urban regions were more likely to engage in risky sexual activities than students who spend the majority of their time in rural locations. With an odds ratio of 1.3, students who had easy internet access were more likely to engage in unsafe sexual activities than students without it.



With an odds ratio of 1.6, students from low-income homes were more likely to engage in risky sexual activities than students from high-income families. Results (OR = 0.361) revealed that students from families with medium income levels were less likely than those from high income levels to engage in sexual practices. Students who identify with the African traditional religion were more likely to engage in unsafe sexual activities than students who identify with no religion, whereas students who identify with Christianity or Islam were less likely to engage in risky sexual activities than students who identify with no religion.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 : Introduction

In this chapter, key findings of this study in relation to the study's objectives are discussed. These findings are then compared to similar studies in the literature. Discussions in this chapter will be centered on knowledge of HIV transmission, sources of HIV related information, HIV education in schools, risky sexual behavior among adolescents and limitations of the study.

5.2 : HIV Knowledge

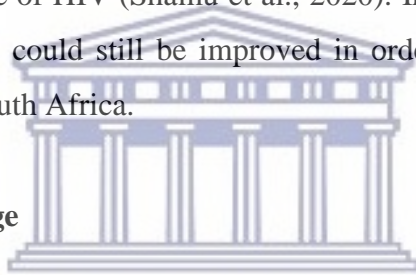
HIV knowledge refers to the correct information regarding the different modes of transmission, high risk behaviors, as well as prevention and care strategies (Carey & Schroder, 2002; UNAIDS, 2020). HIV awareness through different campaigns is one of the strategies that has been used for the prevention of the spread of HIV across all age groups. Accurate knowledge of the ways in which HIV spreads and how to prevent the spread is perceived to lead to the promotion of behavioral changes that result in the reduction of new infections especially among adolescents across the world (Aventin et al., 2021; De Wet et al., 2019). Nevertheless, in practice, HIV knowledge and awareness does not automatically translate into safer sexual practices (UNAIDS, 2020; Yaya & Bishwajit, 2018).

This study found that more than two thirds of the students scored more than 80% on knowledge questions, a finding inconsistent with what others reported elsewhere. A survey conducted by UNICEF in 40 counties indicated that less than 50% of young people knew about how HIV was transmitted (UNAIDS & UNICEF, 2009). A cross-country systematic literature review on young adults' knowledge and awareness on HIV/AIDS conducted by Abano (2018) revealed that there was a general increase in the knowledge of HIV/AIDS among the youth in most countries (O. Abano, 2018). According to a population-based analysis presented by the UNAIDS in 2020, comprehensive knowledge of HIV amongst young women and men in western and southern Africa had risen steadily (UNAIDS, 2020). Contrary, the report went on to say that comprehensive knowledge of HIV among young women in Eastern and Southern Africa had risen slowly

(UNAIDS 2020). Despite this general increase, there has not been comprehensive knowledge on HIV among the youth in many countries especially in Africa (Abano, 2018). Attributing factors were cited as myths around HIV & AIDS, masculinity as well as perceptions around HIV & AIDS. Many young people in South Africa still have misconceptions about the spread of HIV as some still think that a healthy looking person cannot be HIV positive and that HIV can be spread through mosquito bites (Yakubu & Salisu, 2018) In this current study, of those students who scored “high, 80% and above”, only about 20% scored 100% on all the knowledge questions that were asked. About two fifths of the participants still believed mosquitoes can spread HIV while about 20% believed that sharing a meal with an infected person can spread HIV infection. This supports the observation by Abano (2018) where comprehensive knowledge of HIV still lacks among the young people and points to the need for enforcing HIV awareness strategies.

The level of the general knowledge of HIV transmission and prevention among the youth in South Africa is reported to have slightly increased (Adeboye, Yongsong, Akinwumi, 2016). This could have been attributed to the inclusion of HIV education in South African schools across all grades. In this study, all the students who participated had gone through HIV education throughout their entire primary and secondary years hence about two thirds of the participants demonstrated high levels of HIV knowledge on transmission and prevention. However, given the background that these students had spent more than 10 years receiving education on HIV & AIDS, the assumption would be that most of the students should have demonstrated comprehensive knowledge of HIV transmission and prevention by answering all the questions correctly. However, only about 20% of the students had comprehensive knowledge of HIV transmission and prevention in this study. These results are similar to a study conducted by the Human Sciences Research on factors that lead to high incidence of HIV among the youth in South Africa that also revealed that about 60% of the participants did not have comprehensive knowledge of HIV compared to only 10% who had (Simbayi et al., 2005). Recent studies have also shown that globally, one in every three adolescents had comprehensive knowledge of HIV transmission and prevention (UNAIDS 2019). This is an indication that there have not been significant increases in the level of HIV knowledge of transmission and prevention suggesting the need to intensify strategies to improve HIV knowledge among the young people.

While HIV education in schools have been in some instances linked with positive sexual practices among young people, the rate of improvement has been slow as reported by UNAIDS (UNAIDS, 2021). Results of a survey conducted by UNICEF in 40 counties over a decade ago indicated that less than half of the young people between the age of 15 – 24 had adequate knowledge of HIV transmission (UNAIDS & UNICEF, 2009). Recent studies have revealed that about two thirds of young people in South Africa have adequate knowledge of HIV transmission and prevention (UNAIDS, 2020), indicating a slight increase from the 2002 UNICEF study. This is in contrast with this study in which about 70% of the students had adequate knowledge of HIV transmission and prevention. While this study shows commendable results on knowledge of HIV transmission and prevention, more still needs to be done in order to achieve comprehensive knowledge among the majority of young people in general. This is corroborated by a 2020 study which assessed young adults' (18 – 24 years) knowledge, attitudes and practices regarding HIV prevention in Nkangala and OR Tambo districts in South Africa. In this study, less than half (44%) of the participants had correct knowledge of HIV (Shamu et al., 2020). In general, this indicates that the current HIV and health education could still be improved in order to achieve positive behavior change among young people in South Africa.



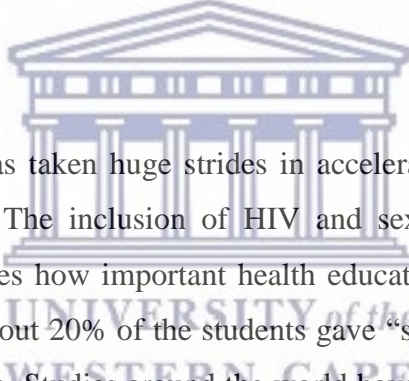
5.2.1 : Sources of HIV knowledge

Young people potentially can have many sources of information which they can utilize in order to increase their knowledge of HIV and sexually transmitted infections among other things. Such sources of information include televisions, pamphlets, friends and family as well as formal sexual health education in schools, hospitals and clinics. Limited or lack of such valuable information may explain why some adolescents in some countries around the world especially those which are shaped by traditional cultures and beliefs still lack comprehensive knowledge of HIV transmission and prevention (Robinson & Gazzard, 2005; Shamu et al., 2020).

In this study, slightly below one third of the students indicated that they had received most of the HIV knowledge from the internet. In the modern days, internet plays a big role in people's lives as it is easily available and easy to access. Research has demonstrated that the use of computers has the ability to attract young people to participate in health and behavior change programs in ways and numbers that the traditional approaches could not achieve (Alauddin et al., 1999; Eime et al.,

2015; Harvey & Barr, 2001). There has been growing literature that highly emphasized the potential of the internet not only for health promotion but also as a tool for community development (Milio, 1996; Mitchell et al., 2011). These assertions have been supported by this study as a good number of the students indicated they got their HIV knowledge from the internet.

About two thirds of the students in this study indicated they had easy access to the internet with almost three quarters of them owning a smart phone. While about one third of students sought HIV/AIDS related information from the internet in this study, a study by S Flicker et al (2004) indicated that the majority of the participants did not use their internet for health related information but rather for communication and entertainment (Flicker et al., 2004). In addition to this, a study conducted in Uganda to evaluate the effectiveness of an internet based HIV behavior change program among the youth did not show a significant difference between the group that received the internet based intervention and the one that received the traditional clinic based intervention (Bull et al., 2008).



The South African government has taken huge strides in accelerating progress around HIV and sexual education for the youths. The inclusion of HIV and sexual education in the National Strategic Plans since 2002 indicates how important health education is for the youth. Results in this current study indicated that about 20% of the students gave “sex education at school” as their primary source of HIV information. Studies around the world have indicated school-based HIV & AIDS education programs effectively reduce risky sexual behaviors (Ma et al., 2014). This is supported by the results in this study that showed that there was a significant positive relationship between knowledge of HIV transmission and prevention and sexual practices. This then suggests that HIV education could likely have been effective in achieving positive HIV behavior change for these students. Most of the students in this study believed that HIV education should be taught in schools and that their Life Orientation educators were the best to teach that content. A systematic review to assess the impact of school-based condom availability programs on condom acquisition, use and sexual behavior indicated that in most of the studies, the programs increased the odds of students obtaining condoms and condom use (Wang et al., 2018). Some studies also indicated the programs positively influenced behavior change while other studies showed no increase in sexual activity (Wang et al., 2018). In as much as HIV education in schools is believed to have the ability

to achieve positive HIV behavior change, research has shown that knowledge of HIV does not automatically translate into positive behavior change (Bhana et al., 2019; Shamu et al., 2020).

In terms of the HIV & AIDS epidemic, the family stands out as a huge support system in many ways. In this study, slightly above one third of the students indicated that they received their HIV knowledge from their family members and friends. While HIV & Aids can be taught in schools parents still have a significant role to help the young people understand HIV and AIDS (Bhana et al., 2019; United Nations, n.d.) In this study, only about 16% of the students indicated that they received HIV education from their family members. This can reflect how certain cultures prohibit discussion of anything related to sexual activities between especially parents and their children (Modise, 2019). A study carried out by Guder and Alabay (2018) on assessing children's questions on sexuality and parents' answers revealed that parents' responses were based on scientific grounds and parents often provided their answers based on avoidance-based and religious beliefs (Yağın Güder & Alabay, 2018). In a study conducted by Widman et al (2016) in which they assessed adolescent sexual communication with parents and friends, it was found that sexual communication between parents and adolescents was generally low with only 7% having discussed with parents and 19% having discussed with friends (Widman et al., 2016). Another study in Zambia on HIV knowledge and risk among Zambian adolescent girls revealed that parent-child communication was still perceived as limited since parents felt it was improper to discuss sex with their children (Buttsa et al., 2017). Thus, parents in general are not comfortable to discuss issues relating to sex education with their children as it is regarded as a taboo especially in the African context (Modise, 2019). Research has revealed that appropriate HIV information given to adolescents by parents has the potential to delay adolescents' sexual activity and may protect them from unwanted pregnancies, STIs and HIV infection (Bhana et al., 2019; Timol et al., 2016; UNICEF, 2016, 2018a). It has also been noted that having a strong and functional family background coupled by uninhibited communication and formal health programs is associated with less risky sexual behavior amongst adolescents (Chikovore, 2020).

The television (8%), radio (4%) and newspapers (2%) were also other choices considered as sources of HIV information by the participants in this study. A study conducted by Sehnem and

others in Brazil on sources of information for adolescents living with HIV revealed that some adolescents highlighted media such as television, radio and newspapers as their sources of information (Sehnem et al., 2018). However, Sehnem and others (2018) also highlighted that the use of such media sources have reduced in numbers as the young people seem to be more aligned to more recent digital platforms like Facebook and other social media platforms.

While the internet, sex education in schools, family, friends, television, radio as well newspapers were listed as sources of information by the students, these seem not to have been doing enough. With the existence of multiple sources of information available to the youth, especially the internet, when unreliable information is accessed, it can lead to misinformation and disempowering of these young people. This is evidenced by the low number of students who chose these sources of information suggesting students or young may have other preferred sources of information.

5.2.2 : Attitudes towards HIV education in schools.

The aim of introducing HIV education in schools was to reduce HIV incidence and prevalence among young people around the world. Through recommendations and guidelines from WHO and UN, countries around the world adopted these guidelines so as to equip young people with HIV knowledge with the hope that this will lead to positive health outcomes and in turn reduce HIV infections among the youth. This study assessed students' attitudes towards the teaching of HIV in the Life Orientation syllabus. In this study, most of the students agreed that HIV education should be taught in schools. This is evidenced by 84% of the students who disagreed with the statement that HIV education should not be taught in schools. More than three quarters of the students also disagreed that HIV/AIDS should be taught outside the school only. Thus, students in this study regarded the school premises as the best place to receive HIV education. The school, being a place where most of the young people meet at the same time, become the most convenient place where HIV & AIDS information can be easily disseminated to many young people in a structured manner (Sani et al., 2016; UNAIDS, 2014). Research has shown that the inclusion of HIV education in schools has resulted in positive outcomes like increased condom use, delayed pregnancies and improved knowledge of HIV & AIDS (Nasheeda et al., 2019; Sani et al., 2016). In this study the majority (91%) of the students agreed that HIV education was beneficial to them indicating that they could see how it may have helped them understand issues around HIV & AIDS.

In as much as most students in this study were happy that HIV is being taught in schools, the majority of students were not convinced that the HIV education they received was the best. Only about 7% of the students rated the HIV education received as excellent. In general, slightly above two-thirds (45%) of the students had positive attitudes towards HIV education in schools with more than half of the students having negative attitudes. About half of the students were of the opinion that their Life Orientation teachers did not make HIV education exciting in class and hence again, they were not the best to teach HIV education in schools (57%). These results are consistent with the findings of a study in Japan that assessed parents', students' and teachers views towards the teaching of HIV and sexuality in schools. In this study about 35% of the students had positive opinions towards the teaching of HIV education in Japanese schools (Abu Moghli et al., 2017).

While most of the students in this study regarded HIV education as an essential element that is worth including in the school curriculum, results suggest students may not be pleased with the way it is delivered. In schools, evidence have shown that the way a teacher delivers a subject or a topic has an impact on how the subject or the topic will be accepted or understood. A study carried out in KwaZulu Natal and Eastern Cape in South Africa to assess teachers attitudes towards the teaching of HIV & AIDS revealed that there was a conflict between cultural values and beliefs among teachers that impeded the expected delivery of HIV education to students by their Life Orientation teachers (Soul City, undated.) (Smith & Harrison, 2013). In this study conducted by Soul City (undated)ref, teachers expressed how it was difficult to deliver topics like the use of condoms among the adolescents, family planning and the use of injectable drugs as teaching such would look like they are promoting such bad behavior, as it is known, especially in the African cultural context (Smith & Harrison, 2013). These findings are in line with the Japanese study mentioned above where parents believed that only students at University level should receive HIV education and all adolescents could receive their sexual education from home by their parents (Abu Moghli et al., 2017).

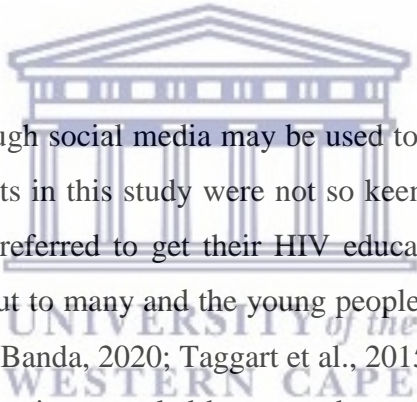
5.2.3 : Students' preferences in HIV education

Students were asked to choose their preferences with regards to HIV education. In this study, about one-third of the students indicated that they would prefer that HIV education be delivered by peer educators in schools. Peer education has been defined by the UNAIDS as strategy that involves the members of a given group so as to effect change among members of the same group (Tolli, 2012). Studies have shown that peer education has been used in many behavior change intervention strategies among individuals, groups and communities at large. Peer education has been widely used in the prevention of HIV incidence among young people around the world and there has been evidence on the effectiveness of adolescent peer-led HIV education programs on knowledge, attitudes normative beliefs and self-efficacy (Mabuie, 2020; Mahat & Scoloveno, 2018). A study conducted in Tswane, South Africa in order to evaluate a peer education and support program in 12 secondary schools in order to reduce high-risk sexual behavior revealed that peer education contributed to delayed onset of sexual activity and therefore had the potential to reduce new infections amongst adolescents (Maretha J. Visser, 2007). These results are also consistent with those revealed by a 2020 systematic review conducted by He et al (2020) on peer education for HIV prevention among high risk groups. In this review, it was found that peer education was associated with 36% decreased rates of HIV infection among adolescents, promote HIV testing and condom use as well as reduce equipment sharing and unprotected sex (He et al., 2020).

While peer education has been associated with positive behavior change, more can still be done in order to improve outcomes and sustainability of such programs. Research has revealed such programs are usually short term and lacked careful planning to ensure sustainability (UNAIDS, 1999). A study conducted in Kenya to assess performance of peer education programs for adolescents and effects on HIV/STI service utilization revealed the need for micro-planning with adequate peer educators for the targeted population group as an effective approach to scaling up HIV prevention programmes especially among key populations like adolescents (Bhattacharjee et al., 2018). This will in the end, result in high levels of programme uptake. Such adolescence peer education programmes as suggested by the UNAIDS should be collaborated by community and other stakeholder linkages to ensure their sustainability and effectiveness (UNAIDS, 1999)

(UNAIDS, 2020) Thus, students in this study as indicated, would prefer their own fellow students to take the lead in HIV education in schools.

While students in this study maintained that HIV should still be taught in schools, they, however emphasized it should be taught by young educators rather than the older Life Orientation teachers. Young educators tend to understand the current issues that affect the adolescents of today and therefore they may appeal more to the young people. The same goes to the 10% of students who indicated that young role models like soccer stars were the best people to disseminate HIV education to students. Role models tend to have influence and can be listened to and therefore giving them the duty to educate young people can yield positive results. However, such people tend to have very tight schedules which may limit time of contact with the students and in turn affect the efficacy of such an intervention that may be led by a role model (Chinelli et al., 2022; Frontline AIDS, n.d.).



While the use of the internet through social media may be used to educate young people on HIV & AIDS (UNICEF, 2022), students in this study were not so keen to use this method. Less than one-fifth (18%) of the students preferred to get their HIV education from social media. Social media has the potential to reach out to many and the young people have the potential to view and learn at their own time and space (Banda, 2020; Taggart et al., 2015). A review of literature on the use of social media for HIV prevention revealed however that many young people in that study did not use their social media platforms like WhatsApp, Facebook and others for education purposes but rather for entertainment and leisure (Tso et al. 2017). This makes it difficult to for a social media-based intervention to be considered as dependable as there may not be assurance that young people may use it.

A very small portion of the students in this study indicated that they would prefer to get their HIV education from church. While the church is believed to be a source of inspiration for good morals (Rakotoniana et al., 2014), students did not think that it is the best place to receive HIV education. These results are in congruent with other research that have revealed that churches have been mum with regards to the prevention of HIV (UNAIDS, 2006). There has been conflict between HIV

education on prevention and transmission and religious beliefs and teachings. While the church teaches about abstinence for young people as an HIV prevention strategy, HIV education in general teaches on abstinence in collaboration with condom use. In as much as the church remains part of the community, a good number of students (17%), were of the opinion that HIV education should be taught through community workshops. Thus, such programs can target the young people as they are in their communities of residence and not in the school environment.

A closer analysis of the results indicates that more than half of the students still believe that HIV education should still be taught in schools, but through peer educators (33%) or young educators in schools. This may indicate that these students may not have faith in their current Life Orientation educators as the best people to deliver the topic. Therefore, there may be need to revisit the way in which HIV education is delivered in schools and ensure that it appeals to the targeted group and ensure its effectiveness in increasing knowledge and molding positive behavior amongst the adolescents in schools.

5.3 : Sexual practices

HIV education in schools aims to instil positive behavior upon young people as they go through both their primary and secondary school education. There is a general belief that when young people are equipped with knowledge around HIV transmission and prevention, they may choose safer sexual practices like using condoms during sexual encounters (UNAIDS, 1999). In this study, almost two thirds (61%) of the students were engaged in risky sexual behavior while about 40% engaged in safer sexual practices. These results back up the observation by UNAIDS in which it was said that knowledge of HIV transmission and prevention does not always translate into positive behavior change (UNAIDS, 1999) (UNAIDS, 2020). Although students in this study are believed to have gone through the entire primary and secondary school HIV education as given in the Life Orientation curriculum, the majority of students in this study still engaged in unsafe sexual practices.

Results also indicated that there was a positive association between knowledge of HIV and sexual behavior. Students who scored high on knowledge of HIV were part of the 40% who engaged in

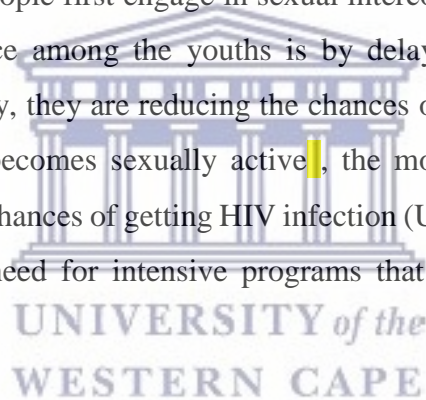
safer sexual practices. This confirms results of a systematic review and meta-analysis study on the effect of HIV educational interventions on HIV related knowledge, condom use and HIV incidence in Sub-Saharan Africa (Faust & Yaya, 2018). The systematic review demonstrated that increased knowledge of HIV was associated with safer sexual practices and ultimately reduced HIV incidence (Faust & Yaya, 2018). Further, the same review showed significantly higher odds of correct knowledge of HIV and risk reduction through condom use among the intervention groups (Faust & Yaya, 2018). Another study in Nigeria on knowledge of HIV and intention to engage in risky sexual behavior revealed that participants with good knowledge of HIV were associated with engagement in low risky sexual behavior while poor knowledge of HIV was associated with risky sexual behavior (Ajide & Balogun, 2018).

Risky sexual practices are further discussed in relation to (1) age at first sexual intercourse and number sexually active; (2) condom use and condom initiation; (3) Multiple partnering; 4; transactional sex; (5) HIV testing.

5.3.1 Age at first sexual encounter.

Three quarters of the students who participated in this study reported having had a sexual encounter in the last six months. This indicated that most of the students (74%) were sexually active compared to those who did not have sex in the previous six months (21%) and the 4% who had never indulged in sex. The number of students who reported to having had sex in the last six months was way higher than the global average of 33% (UNAIDS 2018) and the number of students who reported having a sexual encounter in a study conducted in Nigeria by K Ajide & FM Balogun (2018). In their study they reported that only 33 % of the students were sexually active while about 40 % reported their intention to indulge in the near future (Ajide & Balogun, 2018). A much lower percentage (13%) of students who were sexually active in the previous 12-month period was recorded for a study that was conducted in Ethiopia (Binu et al., 2018). While this percentage was recorded, it may not have been a true reflection owing to the fact that in that region and Africa at large, indulging in pre-marital sex is largely regarded as a taboo (Yakubu & Salisu, 2018). It can be seen that the high proportion of participants who are sexually active is of concern since many of them are not practicing safer sex.

The majority of students in this study had their first sexual encounter between the ages of 15 and 17 with a median age of 16. This finding is consistent with studies conducted in America, United Kingdom and other European countries where age at first intercourse was 16 in Denmark, Norway, Sweden (Hansen et al., 2020). In another study conducted in Nigeria, the age at first intercourse was much lower at 15 while that (Yaya & Bishwajit, 2018) Results from most African countries indicate that young people are indulging in sex at much earlier ages. A multi-level study to identify factors that influence adolescent pregnancy and early motherhood in five Eastern African countries (Keya, Tanzania, Malawi, Zambia and Uganda) indicated the age at first sexual debut as 15 (Wado et al., 2019). A study that measured and described the learners' sexual knowledge and activities in a rural technical secondary school in the North West Province of South Africa revealed that the mean age for first-time-intercourse was 15.2 years (Mostert et al., 2020). This indicates participants in this study could have been influenced by the HIV education they received in schools and postponed their first sexual encounter to later years. Findings in this study are consistent with the general age at which young people first engage in sexual intercourse around the world. One of the ways to reduce HIV incidence among the youths is by delaying sexual intercourse. When young people delay sexual activity, they are reducing the chances of getting infected based on the assumption that the earlier one becomes sexually active, the more partners they are bound to encounter thereby increasing the chances of getting HIV infection (UNAIDS, n.d.-c). The finding in this current study points to the need for intensive programs that can encourage adolescents to postpone sexual activity.



One of the indicators used to measure sexual practices in HIV prevention interventions is the use of condoms by participants. In this study more than three quarters of the students indicated that they had used condoms in their sexual encounters. Of concern is that, among those who had sex in their previous six months, slightly more than half (51%) indicated that they did not use a condom in the last sexual encounter while 49 % had used a condom. These results correspond to results from many studies around the world which point out to adolescents not using condoms to the level they may be expected to, for the prevention of HIV and other sexually transmitted infections (STIs) as well as unwanted pregnancies (Shamu et al., 2020; unaids.org, 2018b; UNAIDS, 2021; UNICEF, 2018a). A systematic review of studies in Sub-Saharan Africa on the knowledge, attitudes and sexual practices among adolescents have revealed that while condom uptake by

adolescents for the prevention of HIV have improved, more still needs to be done as many adolescents are still reporting the non-use of condoms in their last sexual encounters (Faust & Yaya, 2018). The higher percentages of adolescents not reporting the use of condoms in their last sexual encounters corresponds with the high levels of infection around the world, especially in Africa and particularly Sub-Saharan Africa of which South Africa is part of (Odimegwu et al., 2019) These results point to the need for interventions on condom promotion to rethink and re-strategize so as to increase condom use amongst adolescents.

Condom initiation in HIV prevention remains a problem to many young people around the world. Adolescents are reported to not have the confidence to start the conversation around the use of condoms (Aventin et al., 2021). Slightly more than one quarter of students in this study reported to having initiated condom use in their previous sexual encounter. Only 21% of the females were able to initiate the use of condoms in the last sexual encounter compared to the 38% of their male counterparts. This still indicates that females are still lagging behind and perhaps unempowered to initiate condom use. Other possible explanations could be linked to cultural beliefs that women are not supposed to take the lead in sexual discussions or acts. More females reported that their sexual partners had initiated condom use in the last sexual encounter compared to only 16% of the males who reported the same. This again may suggest the existence of male dominance around sexual issues. UNAIDS reported that women were still not confident enough to negotiate condom use in sexual encounters (UNAIDS, 2016). A study in North West province of South Africa which described students' HIV knowledge and practices demonstrated that about 51% of the students in that study indicated that they were able to talk about condom use in their last sexual encounters (Madiba & Mokgatle, 2015). While this result is higher than that of this current study, it is worth noting that the figures ought to increase to where the majority of young people are able to negotiate condom use during sexual intercourse so as to reduce HIV incidence among the adolescents and youth around the world. Strategies should therefore be put in place in order to improve condom use negotiation especially for women and young girls.

5.3.2 : Multiple partnerships and transactional sex

Students in this current study were asked if the last three sexual partners they had in the previous six months were with one person. Results indicate that 43% of the students indicated that their

last sexual partners in the previous six months were not the same person while 39% indicated it was the same person. These results suggest that students were engaging in multiple partnerships or were quick to move from one sexual partner to the other. Against the background of poor usage of condoms, these results are a pointer to probable high levels of HIV incidence amongst adolescents and would require intensified interventions. In as much as there were signs of students having multiple partnerships, students did not report widespread transactional sex with only 10% reporting having been paid for sex. These results contrast with other research findings which have reported evidence of transactional sex amongst adolescents especially women in low income countries (Krisch et al., 2019). A study in Zambia revealed that social and structural vulnerabilities increased the transactional sex engagement among young women and girls (Gichane et al., 2022). The lower percentage of students not involved in transactional sexual encounters in this current study could have been biased as students could have withheld the truth as it is regarded as immoral and shameful to engage oneself in transactional sex especially in the African culture (Adjei & Saewyc, 2017).

5.3.3 : HIV testing and knowledge of one's HIV status.

HIV education in schools also aims to increase uptake of HIV testing among adolescents especially those who may be sexually active. When students get tested they will know their HIV status and can be initiated into Ant- retroviral Treatment (ART) and thereby prolong their lives. About half of the students (49.8%) reported having been tested in the previous twelve months while the other half (50.2%) did not get tested. While research has shown that HIV education in schools has significant chances of improving knowledge of HIV and changing behavior like condom use (UNAIDS, undated), there has not been significant evidence that HIV education in schools maybe positively associated with uptake of HIV testing among adolescents. UNAIDS reported that HIV testing among young people remains low and more needs to be done in order to encourage them to get tested (UNAIDS, 2019b). The same can be said about students who knew their HIV status in this study. About two-fifths of the students in this study knew their HIV status while about 60% did not. In this group of students within which more than 70% were sexually active, not knowing one's HIV status may lead to those who maybe already HIV positive unknowingly spread the infection to others. Again, in this regard, interventions are needed that will instil confidence in the young people to get tested and know their HIV status. Once tested

and when found to be HIV positive, they can immediately be referred to appropriate care and start receiving the necessary support and treatment so as to prolong life.

5.3.4: Limitations

External validity refers to the extent to which information can be extrapolated to the general population outside of the boundaries of a specific study (Stephanie, 2016). External validity for this study was ensured through random sampling of students at the school and results can only be extrapolated to the school under study. Results in this study cannot however be generalised to schools in the Cape Town, the Western Cape or South Africa at large.



CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

In this chapter, concluding remarks and recommendations will be discussed.

6.1 : Conclusions

The implementation of HIV and AIDS programs in the South African education curriculum in order to reduce HIV-AIDS infection among adolescents requires a sound understanding of risky sexual practices as well as other factors that can influence such behaviors. Empirical evidence from other scholars has shown that although the majority of the students have a greater awareness and understanding of sexual risk behaviours, it varies depending on the geographic location due to different cultures, religion, background, social and economic status (De Wet et al., 2019). Research in Cape Town is critical as it has high income inequality, highest rape cases and multi-racial society from other cities (Turok et al., 2021). This is crucial for government to implement policies that can address the local needs regarding raising awareness on risky sexual behaviors among adolescents.

The research findings confirmed that a substantial number of students have practiced risky sexual behaviors such as the non-use of condoms and having multiple sexual partners that might expose them to a variety of sexual related health problems. This stems out from peer pressure from other students and friends who influence peers towards their first sexual intercourse. Peers influence the behavior of their friends either positively or negatively, therefore the schools should emphasize on promoting peer educators and peer discussion to protect adolescents and youth from risky sexual behaviors (Aventin et al., 2021).

It can be noted that the level of knowledge regarding the transmission of HIV and prevention is high. It is possible that the relatively higher levels of knowledge on HIV/ AIDS were linked to the implementation of educational programs by government in the previous decades. Respondents in this study were found to acquire information on sexual health from the internet and their schools through Life Orientation Curriculum yet the high level of risky sexual behaviour revealed in the study indicates that such information is inadequate to foster change in behaviour and attitudes towards HIV transmission. More emphasis is needed in promoting the factors that prevent risky sexual behaviour among adolescents than focusing on the harmful outcomes of the risky factors.

Throughout the study, students noted that they do not like the current HIV education curriculum and prefer younger educators to administer HIV education. The results of the study would suggest that policy makers should give adjustments to the current way in which HIV education through the Life Orientation Curriculum is being delivered. The engagement of younger educators, role models as well as public figures who appeal to the younger generation, into school based HIV intervention strategies is of great importance. In addition, schools can develop localised interventions aimed at addressing specific HIV/AIDS challenges that the schools maybe facing and not only depend on national policies that are more generalised (UNAIDS, 2020).

In this study, it was concluded that school-based sexual health has the potential to promote condom use among young people in Sub-Saharan Africa. Thus, in the light of the continued spread of HIV infection among the youth, HIV education in schools should be prioritised as it has demonstrated positive results. It is advisable that these educational programmes in schools should be accompanied with other social behaviour change interventions as knowledge of HIV on its own does not guarantee a change in behavior (UNICEF, 2020).

Results show that despite students having close relationships with their parents, guardians and family members it is difficult for them to discuss sex related matters with parents as they feel uncomfortable and embarrassed. Future research should explore and identify gaps and barriers as well as knowledge facilitation relating to the prevention of HIV/AIDS considering both scientific and traditional viewpoints.

6.2 : Recommendations

Based on the research findings, the following recommendations were made:

1. Teachers should be trained and continuously update their skills on how to sensitively deliver sex education messages to adolescents. Workshops on HIV and AIDS on a regular basis for teachers should be organized so as to equip Life Orientation educators with skills that will enable them to deliver HIV education that is relevant to their school and community.to deliver

2. Information and education resources on HIV/AIDS prevention should be provided to all schools. While information regarding HIV/AIDS should be readily available in the school libraries and encourage students to use thereof, LO teachers can also disseminate such information through platforms like WhatsApp. By so doing, learners will have opportunities to learn about HIV outside of the classroom
3. There is need to engage schools differently in HIV prevention, including use of personnel other than teachers to deliver interventions. While peer education is popular among students, there is little evidence for its ability to increase intervention impact. One approach with certain advantages over teachers, who often resist teaching sexuality education, and same-age peers, who may sometimes have difficulty commanding the necessary authority to run a classroom, would be to use older youth as 'mentors'. School mentors could work in partnership with teachers who request to teach sexuality education and HIV prevention, but would relieve the reliance on teachers who do not want this responsibility.
4. Developing school-based interventions that are group-based rather than the usual didactic learning. Most school-based interventions do not offer the group approach but are didactically delivered by teachers in the classroom and mostly rely on individuals to act on what would have been delivered. Group intervention approaches have the potential to generate positive social norms through critical thinking and hence resulting in individual empowerment
5. Positive behavioral change among adolescents in approaching sexual related issues in Cape Town in particular and South Africa as a whole is vital. Inclusion of stakeholders such as traditional leaders, Non- governmental institutions, faith-based organization, private sector health and education department should join forces and encourage adolescents to embrace traditional ways that are health preserving such as no sex before marriage or offering viable alternative normative behaviours. Therefore, the school ceases to be the sole provider of HIV education to the youth when other stakeholders get involved.
6. Department of Education should plan and implement activities for students that integrate HIV/AIDS education such as debates, drama, story-telling and skills shows competitions among schools. Prizes to be won by exceptional students which would encourage students to keep on updating their knowledge on health-related issues

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

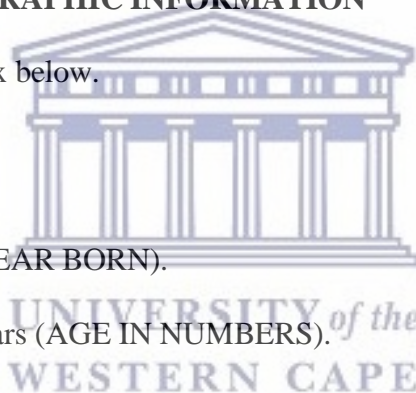
HIV/AIDS knowledge, attitudes towards HIV/AIDS education in schools and risky sexual practices among Grade 12 Learners at a Finishing School in Cape Town, South Africa.

This is a research study being conducted by a postgraduate student. We are trying to find out what young people in this school know about HIV and their attitudes towards HIV education in schools.

This study has questions about your knowledge of HIV, your attitudes towards HIV education you received in school and your sexual behaviour. The results from this study will contribute to the development of new programmes to protect young people's health. We will not ask your name and will not record it anywhere. We will not tell anyone else your answers to the questions, so please answer the questions honestly. Participation in this study is voluntary. You will not be paid for taking part.

SECTION 1: SOCIO-DEMOGRAPHIC INFORMATION

1. SEX: Tick the correct box below.
 Male
 Female
2. When were you born? (YEAR BORN).
3. How old are you? years (AGE IN NUMBERS).
4. Did you spend most of your primary and secondary years in an urban area or rural area?
 Urban
 Rural
5. Who pays your school fees? (Tick all that apply to you.)
 Mother
 Father
 Sex partner
 Government scholarship
 I pay them myself
 Don't know



6. How often, if at all, have you missed school because you did not have enough money for school fees, lunch money or bus fare? (Tick only **ONE** box.)

- Very often
- Often
- Sometimes
- Never
- Don't know

7. Do you have easy access to internet?

- Yes
- No

8. What is your religion? (Tick only **ONE** box.)

- Christianity
- Traditional religion
- Islam
- No religion
- Don't know

9. Do you own a smart phone?

- Yes
- No



10. Which of the following best your family economic status? (Tick **ONLY ONE**.)

- High income family
- Middle income family
- Low income family
- Don't know

SECTION 2: HIV/AIDS KNOWLEDGE (Transmission route)

11. HIV can be transmitted by sexual intercourse.

- Yes
- No

12. HIV can be transmitted through a mosquito bites.
- Yes
- No
13. HIV infection can be transmitted by sharing a meal with someone who is infected?
- Yes
- No
- Don't know
14. HIV infection can be transmitted by sharing a needle that has already been used by an infected person?
- Yes
- No
15. Can a pregnant woman who is infected with HIV or suffering from AIDS infect the unborn baby?
- Yes
- No
16. HIV can be transmitted by blood transfusion.
- Yes
- No
17. HIV can be transmitted by shaking hands with an infected person.
- Yes
- NO
18. HIV can be prevented by properly using a condom during sexual intercourse.
- Yes
- No
19. HIV transmission can be avoided by remaining faithful to one sexual partner.
- Yes
- No
- Don't know



20. Only men should use condoms to prevent HIV virus.

Yes

No

SECTION 3: Learners attitudes towards HIV/AIDS education in schools and HIV/AIDS education preferences.

21. Would you attend Life Orientation if only they teach lessons on HIV/AIDS?

Yes

No

22. HIV/AIDS education in schools was beneficial to me.

Yes

No

23. How would you rate the HIV/AIDS education you received in your secondary school on a scale of 1-3 (with 1 being poor, 2 being moderate and 3 being excellent.)

1

2

3

Below are some questions about how you agree or disagree with some issues relating to HIV/AIDS education in schools. Please tick only *ONE* box that best represents your opinion.

24. In my opinion HIV/AIDS education in schools is waste of time.

I agree

I disagree

Don't know

25. In my opinion Life Orientation teachers are the best to teach HIV/AIDS education in schools.

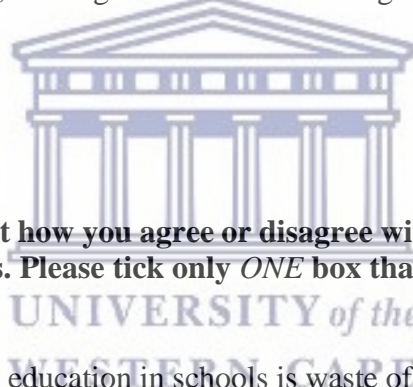
I agree

I disagree

Don't know

26. In my opinion HIV/AIDS should not be taught in schools.

I agree



I disagree

Don't know

27. HIV/AIDS education should be taught outside the school only.

I agree

I disagree

Don't now

28. Through HIV/AIDS and sexuality education, I was empowered to make informed decisions.

I agree

I disagree

Don't know

29. Teachers did not make HIV/AIDS education exciting in class.

I agree

I disagree

Don't know

30. HIV/AIDS education I got in class was not complete.

I agree

I disagree

Don't know



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31. Where did you get most of your knowledge that you have from? (Tick just one)

Family

Friends

Internet

Newspaper

Radio

Sex Education at school

TV

HIV/AIDS Education preferences

38 I would prefer if HIV/AIDS education is given through (Please tick 1.)

- Peer education in schools
- Community workshops
- Through social media on the phone
- By young educators in schools
- By young role models like musicians, soccer players
- At church

39 My parents/guardians are the best people to teach me about HIV/AIDS.

- Agree
- Disagree

40 I would enjoy HIV/AIDS education if it is visual (drama, videos.)

- Agree
- Disagree

41 I do not need HIV/AIDS education at all.

- Agree
- Disagree

42 People should educate themselves on HIV/AIDS.

- Agree
- Disagree



SECTION 4: SEXUAL PRACTICES

43 Have you ever had sexual intercourse?

- Yes
- No

44 At what age did you first have sexual intercourse? (Write the age in years.)
.....years

45 Have you had sexual intercourse in the last 6 months? (Tick only **ONE box**)

- Yes
- No

46 If yes, last three sexual partners have you had in the last six months was same person?

- Yes
- No

47 (BOTH BOYS AND GIRLS PLEASE ANSWER) Has someone ever paid you (money or other gifts) to have sex with you?

- Yes
- No

48 Have you ever used a condom?

- Yes
- No

49 If **YES**, who initiated it? (Tick only **ONE** box)

- Myself
- My partner
- Joint decision
- Don't remember

50 The last time you had sex did you and your partner use a condom?

- Yes
- No

51 Have you ever been tested for HIV in the past 12 months?

- Yes
- No

52 Do not tell me the result: Do you know your HIV status?

- Yes
- No

53 Do you use injectable drugs?

- Yes
- No

54 If YES, do you share needles with other drug users?



- Yes
- No

That is the end of the questionnaire. Thank you very much for taking time to complete these questions. We appreciate your participation.



APPENDIX 2: CONSENT FORM

Title of Research Project: **Knowledge and attitudes towards HIV/AIDS education and risky sexual practices among Grade 12 learners at a Finishing School in Cape Town, South Africa.**

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

Participant's name.....

Participant's signature.....

Date.....



Biomedical Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535
Tel: 021 959 4111
E-mail: research-ethics@uwc.ac.za

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APPENDIX 3: INFORMATION SHEET

Project Title

HIV/AIDS knowledge, attitudes towards HIV/AIDS education in schools and risky sexual practices among Grade 12 Learners at a Finishing School in Cape Town, South Africa.

What is this study about?

This is a research project being conducted by Masiwa Mutambara at the University of the Western Cape. We are inviting you to participate in this research project because you are a registered Grade 12 Learner at St Francis Finishing School above the age of 18 who have completed the Life Orientation Secondary School Curriculum. The purpose of this research project is to determine HIV/AIDS knowledge, attitudes towards HIV/AIDS education in schools and risky sexual practices among Grade 12 Learners at St Francis Finishing School. It assesses any association between the level of HIV/AIDS knowledge and attitudes towards HIV/AIDS education in schools. This study can help in designing appropriate intervention strategies to enhance learning and improve adolescents' knowledge of HIV and AIDS which can improve their health seeking behaviours and in-turn reduce HIV infections.

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

You will be required to give informed consent before you participate and you may withdraw from the research process at any time without any prejudice or consequence. You will be asked to complete a questionnaire comprising of 4 sections. The first section consists of socio-demographic information relating to the participant e.g. age, gender. You will also be asked about your attitudes towards the HIV/AIDS education that you received in school as well as how you think HIV/AIDS education for the youth should be delivered. In addition, you will be asked about whether you have considered doing what you were taught in Life Orientation like condom use. The questionnaire has structured questions with predetermined response options you can choose from. It will take no longer than 20- 30 minutes to complete. Your identity will be protected; all identifiable data will be removed by the researcher. You are also free not to answer any question that may make you uncomfortable. Your participation in the research will be greatly valued.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, the survey is anonymous and will not contain information that may personally identify you. Your name will not be included on the questionnaire and a number code will be placed on the questionnaire and other collected data forms. In addition, through the use of an identification key, the researcher will be able to link your survey to your identity and only the researcher will have access to your identification key. If we write a report or article about this research project, your identity will be protected. All the questionnaires collected for this study will

be kept in locked filing cabinets in the researcher's office at her work place. It is only the researcher who keeps the keys to the office.

What are the risks of this research?

All human interactions and talking about self or others carry some amount of risks. The topic of HIV/AIDS may not be comfortable. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. You are free to stop the survey at any point if you are not comfortable and can choose not to answer any question that you may not be comfortable to answer. This does not in any way devalue the importance of the information given by you towards this study. In the event that the study causes you to have feelings of worry, the researcher has spoken to the school counsellor (Ms Kappa) to provide counselling. Ms Kappa can be contacted on 021 387 0104. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

Although not designed to directly help you personally, the results may help the investigator to learn more about HIV/AIDS knowledge, attitudes towards HIV/AIDS education in schools and students' sexual behaviour preferences. The self- assessment of your personal knowledge of HIV/AIDS might trigger you to want to get more knowledge concerning the matter. We hope that, in the future, other people might benefit from this study through improved understanding of HIV/AIDS. Further, useful insights from the results may assist in the development of community specific HIV/AIDS interventions which are learner driven.

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

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

What if I have questions?

This research is being conducted by *Masiwa Mutambara, a Master's student in Public Health* at the University of the Western Cape. If you have any questions about the research study itself, please contact masiwa.mutambara@gmail.com or 3814507@myuwc.ac.za

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

Prof U Lehmann

Head of Department: School of Public Health

University of the Western Cape
Private Bag X17
Bellville 7535
ulehmann@uwc.ac.za

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

This research has been approved by the University of the Western Cape's Humanities and Social Sciences Research Ethics Committee.

Humanities and Social Sciences Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535
Tel: 021 959 4111
e-mail: research-ethics@uwc.ac.za



APPENDIX 4: WCED APPROVAL LETTER

Audrey.wyngaard@westerncape.gov.za

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

REFERENCE: 20200608-6438

ENQUIRIES: Dr A T Wyngaard

Ms Masiwa Mutambara

88 Chianti Heights

Broadway Boulevard

Strand

7140



Dear Ms Masiwa Mutambara

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RESEARCH PROPOSAL: KNOWLEDGE AND ATTITUDES TOWARDS HIV/AIDS EDUCATION AND RISKY SEXUAL PRACTICES AMONG GRADE 12 LEARNERS AT A FINISHING SCHOOL IN CAPE TOWN, SOUTH AFRICA

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **03 July 2020 till 19 March 2022**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.

10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

The Director: Research Services

**Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

DATE: 09 June 2020



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APPENDIX 5: SCHOOL APPROVAL LETTER

ST FRANCIS RADICAL LEARNING

MANDALAY ACADEMY /TRAIN STATION
PHYSICAL ADDRESS
35 Ryan Way Merrydale Centre
MANDALAY 7785

Tel: 021 387 - 0104
Email Address: stfrancisradical@gmail.com



Ms Masiwa Mutambara
88 Chianti Heights
Broadway Boulevard
Strand
7140

30/06/2020

Dear Ms Masiwa Mutambara

RESEARCH PROPOSAL: KNOWLEDGE AND ATTITUDES TOWARDS HIV/AIDS EDUCATION AND RISKY SEXUAL PRACTICES AMONG GRADE 12 LEARNERS AT A FINISHING SCHOOL IN CAPE TOWN, SOUTH AFRICA

Your application to conduct the above-mentioned research at St Francis Radical Learning Academy in the Western Cape has been approved subject to the following conditions:

12. Principals, educators and learners are under no obligation to assist you in your investigation.
13. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
14. You make all the arrangements concerning your investigation.
15. Educators' programmes are not to be interrupted.
16. The Study is to be conducted from **03 July 2020 till 19 March 2021**
17. The School receives a copy of the completed report/dissertation/thesis.

We wish you success in your research.

Kind regards.

Signed: *R.T Mazorodze*

Principal: Reuben Mazorodze

DATE: 30/06/2020

APPENDIX 6: ETHICS APPROVAL LETTER



UNIVERSITY *of the*
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01 April 2020

Mrs M Mutambara
School of Public Health
Faculty of Community and Health Sciences

Ethics Reference Number: BM20/1/15

Project Title: Knowledge and attitudes towards HIV/Aids education and risky sexual practices among Grade 12 learners at a finishing school in Cape Town, South Africa.

Approval Period: 31 March 2020 – 31 March 2023

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

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report annually by 30 November for the duration of the project.

Permission to conduct the study must be submitted to BMREC for record-keeping.

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

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

Director: Research Development
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Email: research-ethics@uwc.ac.za

NHREC Registration Number: BMREC-130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE.