Perceptions of youth regarding the consequences of unsafe lifestyles regarding transmission of HIV and TB in Meadowlands, Gauteng Province.

By:

Shika Ciccioline Ntswaki

Student Number: 11610149

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Supervisor: Dr J.T Mabunda

Co-supervisor: Dr M Mohlala

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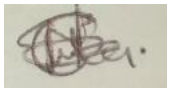
Declaration

I CICCIOLINE NTSWAKI SHIKA, student no 11610149 hereby declare that the mini-dissertation titled **'Perceptions of youth regarding the consequences of unsafe lifestyles regarding transmission of HIV and TB in Meadowlands, Gauteng Province'** for Master of Public Health degree at the University of Venda, hereby submitted by me, has not previously been submitted for a degree at this or another institution, and that this is my own work in design and execution. All reference materials contained therein have been duly acknowledged.

Signature:  Date: 03 April 2020

Dedication

I dedicate this study to my son Lizalise Shika.

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- Last but not least, the learners that agreed and took time to participate in the study.

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Ante Natal Care
FP	Family Planning
GBV	Gender Based Violence
HIV	Human Immune Deficiency Virus
HRSC	Human Resource Service Centre
KNBS	Kenya National Bureau of Statistics
MDR	Multi Drug Resistant
MSM	Men who have Sex with Men
NHLS	National Health Laboratory Services
SAMRC	South African Medical Research Council
SANAC	South African National AIDS Council
STATSSA	Statistics South Africa
STI	Sexually Transmitted Infection
TB	Tuberculosis
TOP	Termination of Pregnancy
TPB	Theory of Planned Behavior
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHO	World Health Organisation
XDR	Extensively Drug Resistant TB

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Abstract

Human Immunodeficiency Virus and Tuberculosis are the most investigated and analysed topics worldwide. However, there is a knowledge gap among the youth concerning the consequences of unsafe lifestyle on the transmission of Human Immunodeficiency Virus and Tuberculosis co-infection. The aim of this study was to assess the perceptions of youth regarding the consequences of unsafe lifestyles regarding the transmission of Human Immunodeficiency Virus and Tuberculosis in Meadowlands Township, Gauteng Province. A quantitative cross-sectional descriptive design research method was used to conduct the study on male and female learners aged 18-20 years in Meadowlands Soweto. Data was collected using questionnaires with close-ended questions to determine the demographics, knowledge, attitudes and practices of the youth regarding Human Immunodeficiency Virus and Tuberculosis infections among 410 learners from three high schools. The Statistical Package for Social Sciences version 25 was used to analyse data. Charts were used to present the study results. 95% of learners had information on the transmission of Human Immunodeficiency Virus. Eleven percent of learners knew about the Human Immunodeficiency Virus statistics in their communities. There were 84% of the learners who thought that females are more vulnerable to contracting Human Immunodeficiency Virus than males. Fifty percent of the learners did not know that one can develop active Tuberculosis while still infected with Human Immunodeficiency Virus, which indicates that half proportion of learners were not aware of Human Immunodeficiency Virus and Tuberculosis co-infections. Furthermore, about 54% of the learners did not know about the Tuberculosis centres available in Meadowlands. Sexual health, Tuberculosis and Human Immunodeficiency Virus and Tuberculosis co-infection related education needs to be constantly provided to learners to keep them informed.

Keywords: Attitudes, Co-Infection, Human Immunodeficiency Virus, Knowledge, Perception, Practices, Tuberculosis, Unsafe lifestyle, Youth.

Chapter 1

Introduction

1.1 Background

Human Immune Deficiency Virus (HIV) and Tuberculosis (TB) co-infection occurs when people are infected with both HIV and latent or active TB. Although HIV and TB are two different infections, when a person is infected with both, each disease accelerates the progress of the other, resulting in further health complications and death (Mayer & Hamilton, 2010). According to the World Health Organisation (WHO), HIV-infected people not receiving treatment, damage their immune system and become ill with TB within weeks to months, rather than the normal years to decades. In 2015, about 400 000 people who had both HIV and TB were estimated to have died in the world, in addition to the 1.4 million people who had died from TB alone and 800 000 people who died from HIV (WHO, 2016). People who die from co-infection of HIV and TB are internationally reported as having died of HIV infection (WHO, 2016). Tuberculosis remains the leading cause of death among people living with HIV, accounting for one in three HIV related deaths globally (WHO, 2016).

Young people are vulnerable to HIV at two stages of their lives. First it is in their first decade of their life when HIV can be transmitted from mother-to-child and the second decade of their life when adolescence brings new vulnerability to HIV. There are also many factors that expose the youth to elevated risks of getting infected with HIV and TB. Transition from childhood to adulthood is a time for exploring and navigating peer relationships, gender norms, sexuality and economic responsibility. Unprotected sex is the most common route for HIV infection in young people, with sharing infected needles the second risk factor (Idele, 2014). Condom use among the youth is also relatively low. Demographic and Health Surveys conducted in Sub-Saharan Africa between 2010 and 2015 report that less than 60 % of female youth aged between 15 and 24 years old with multiple partners did not use a condom during their last sexual intercourse (Idele, 2014).

Intergenerational sex is also thought to be an important driver of the HIV pandemic in sub-Saharan Africa. Older partners are more likely to expose young people to unsafe sexual behaviours such as low condom use. In many cases, these relationships take place between older men and

younger women which are transactional in nature and are driven by the implicit assumption that sex will be exchanged for material support or other benefits (Stoebenaua, Heiseb, Wamoyic & Bobrovad, 2016). Injecting drugs among the youth is also common and exposes them to HIV and other blood borne diseases. HIV prevalence among young people who inject drugs world-wide is estimated at 5.2% (UNAIDS, 2014). A significant proportion of the youth that inject drugs become infected with HIV within the first 12 months of initiation. In Ho Chi Minh City, Vietnam, 24% of the youth that injected drugs under 25 years of age had started injecting within the previous 12 months and of these 28% were infected with HIV (WHO, 2015). Young people who inject drugs are more likely than older people to lack knowledge about safer injecting practices and HIV prevention and be unaware of risks to their health (WHO, 2015).

The influence of drug use on the epidemiology of TB was well known in developing and developed countries even before the HIV epidemics. Socio-economic factors such as tobacco use and alcohol abuse place people who use drugs at higher risk of developing TB. Drug use among the youth is a risk factor whether drugs are injected or not. However, since the emergence of HIV epidemic, the HIV induced immune-suppression is considered the most important risk of progression to active TB. The use of drugs or excessive alcohol weakens the immune system and makes you more vulnerable to TB (WHO, 2015). The WHO, 2015 reported that alcohol consumption increases the risk of contracting TB threefold, and the condition becomes worse because people who struggle with alcohol use are less likely to get treatment or take note of symptoms. These people are also less likely to eat regular, healthy meals therefore malnutrition adds additional risk to those who may contract TB. People who drink alcohol regularly are also more likely to ignore and keep drinking to alleviate symptoms rather than seek medical treatment (WHO, 2015).

A 2017 meta-analysis of numerous medical studies found about 10.4 million incidences of TB around the world. In all studies, heavy consumption of alcohol was closely linked to the higher rates of TB, on average, abusing alcohol increased the risk of contracting TB by 35% (WHO, 2015). Studies on binge drinking which the youth are more likely to engage in, have shown that drinking too much in one day can lower the immune system's response to infection. So people who drink more than moderately in one evening, are at greater risk of contracting infections or have a hard time overcoming existing infections (WHO, 2015).

Both HIV and TB are global challenges that threaten the existence of humans. HIV is an infection that weakens the immune system and makes the human body susceptible to other diseases such

as TB, which are opportunistic in nature and can lead to death if not properly controlled (WHO, 2016). People who are HIV positive are at greater risk of contracting TB infection, due to a compromised immune status. HIV positive people are often advised to report to their clinics as soon as possible in order to be put on TB prophylaxis, which will protect them from contracting TB (Gauteng Department of Health, 2016).

People living with compromised immune systems, such as those who have tested HIV-positive, those with a low CD4 count, malnutrition or diabetes or those who use tobacco, are at higher risk of getting ill from TB infection than those who are HIV negative. There were an estimated 10.4 million new tuberculosis cases globally in 2016 and 1.2 million (11 %) were HIV positive people (WHO, 2016). The risk of developing active TB is estimated to be 26 to 31 times greater in HIV positive people than those who are HIV negative (WHO, 2016). The risk of death in co-infected people is also twice as high in those who are HIV infected without TB, even when the CD4 cell count and antiretroviral therapy is considered (Suchindran, 2015). There are about 33 million people globally who are HIV positive and over the past 10 years the number has increased by 27% (UNAIDS, 2016). Despite this, around 57 percent of HIV-associated TB cases remained untreated in 2015, as weak health systems resulted in missed opportunities to diagnose TB among HIV positive people (UNAIDS, 2016).

HIV is a global pandemic because of sexual risk behaviours, poverty, economic and political instability, which affects HIV programmes and health care services, as well as lack of knowledge about the disease. On the other hand, TB has existed among humans for many years and it remains a major global health problem, along with HIV. It causes serious health problems in millions of people each year, and in 2015 it was one of the top 10 leading causes of deaths from infectious diseases worldwide, ranking above HIV (UNAIDS,2014). In 2015 countries like the Democratic Republic of Congo, India, Indonesia, Mozambique, Nigeria, South Africa, the United Republic of Tanzania, and Zambia, accounted for around 70 percent of all TB deaths among HIV positive people (WHO, 2015).

There were 9.2 million HIV new cases globally and 1.7 million were associated with TB. Most of these cases were in Asia. However, the highest numbers of cases were observed in Africa, where the prevalence of HIV was high (WHO 2015). In the United States, Men who have Sex with Men (MSM) are considered to have those with the highest HIV infections among the youth aged between 13 and 24. Among these men, the African-American population was the population that

carried the greatest burden of HIV (Centre for Decease Control and Prevention, 2014). In the WHO Global TB Report (2016), the burden of TB infections in India increased during the period 2000-2015. This follows accumulating evidence taken from previous surveys and collected TB data that previous estimates of cases and deaths were too low. The number of new TB cases in India in 2015 was estimated at 2.8 million, while previously it had been set at 1.7 million. However in high prevalence states, HIV prevalence among people with TB ranges from 10% to 40%. Thus, while the country is dealing with its HIV burden, a TB associated with HIV epidemic is posing great challenges (WHO, 2016).

Despite the continuous growth of the epidemic in Africa, there are signs of hope. For example between 2010 and 2015, new HIV infections declined by 66% among children (0-14 years) to an estimated 56,000. However, new HIV infections among adults are not declining fast enough and have fallen by just 4% over the same period, but there is a significant difference by country. The annual number of new HIV infections among adults declined by more than 20% in Botswana, Malawi, Mozambique, Uganda and Tanzania between 2010 and 2015, but increased by more than 20% in Eritrea and Madagascar (UNAIDS, 2016).

In Sub-Saharan countries, Africa is the most affected and it accounts for 68 percent of the population living with HIV in the world. In the industrialized world, the prevalence is much lower. However, vulnerable groups include racial and ethnic minorities, MSM, drug users who use injections and sex workers (Top AIDS, 2016). In some African countries, young people (youth) are denied access to HIV information, education and care (Top AIDS, 2016). As premarital sex, sex education and safe sex practice education is being denied the populace in African countries among young people, access to family planning services, condom use and contraceptives, were only available for married couples because it is believed that access to those services encourages young people to be sexually active before marriage (Ross, Pick & Fergroon, 2012).

South Africa has the largest HIV epidemic in the world, with an estimated 7 million people living with HIV in 2015 (UNAIDS, 2016). In the same year, there were 380,000 new infections, while 180,000 South Africans died of HIV-related illnesses. Although South Africa invests 1.5 billion rands annually towards Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome programmes and has the largest antiretroviral treatment programme globally, HIV prevalence remains high at 19.2 percent among the general population (South African National AIDS Council, 2016). Furthermore, South Africa has a high TB burden and has made significant

efforts to tackle the two diseases simultaneously. Tuberculosis was integrated into the mandate of the South African National AIDS Council in 2009 along with HIV (SANAC, 2016).

National Strategic Plans for TB and Sexually-Transmitted Infections (STIs) have been developed in South Africa (Department of Health, 2014). In the 2014/15 and 2016/17 performance plans, the South African Department of Health reported that 60% of the people with TB in the country were also HIV-positive. The reports also showed increasing incidences of Multi-Drug-Resistant (MDR) and Extensively Drug-Resistant TB (XDR) (National Department of Health, 2014). About 21919 patients were reported to be co-infected with HIV and TB in Gauteng Province in 2016, which constituted to 68% of the co-infection rate in 2015/16. The number of TB patients also increased from 459 to 1007 in that year and new infections were also highest in women aged 25 to 35 years of age (Gauteng Department of Health, 2016).

1.2 Problem Statement

Unsafe sexual practices, fear of stigma and shame of accessing sexual health services are the most common factors of HIV infections among the youth in Meadowlands Township in Gauteng Province (AVERT, 2015). Sexual practices such as unprotected sex, early sexual debut, alcohol or drug use before sexual intercourse, multiple sexual partners, forced or coerced sexual intercourse for reward, have all been identified as risk factors that increase the chances of young people engaging in risky sexual behaviour in South Africa (AVERT, 2015). The youth engage in unsafe sexual practices that expose them to HIV and do not visit their local clinics for health care information and sexual health advice. With these risky behaviours, some end up getting HIV and are ashamed to seek medical care until their CD4 count decreases significantly and they are forced to get medical care. Such people make themselves susceptible to active TB and end up having a co-infection of HIV and TB. One of the other observed practices in the township is the use of ‘Bluetooth’. The practice involves extracting blood with a needle from the body after taking drugs, preferably “Nyaope” and injecting the blood into another person who has not smoked the drug to receive the same effect from the drug. This method is dangerous because it not only exposes them to HIV, but other blood-borne diseases. Drug users do not often seek medical services and they also do not eat well (nutritious meals) this weakens their immune system, making them susceptible to active TB.

Intergenerational relationship trends in Meadowlands among young girls dating older men also fuels HIV transmissions. These relationships are often transactional in nature, with material gifts, most commonly money, given for sex. Relationships with older partners are risky because they often have a history of multiple relationships. Negotiating safe sex practices has diminished and exchanging money or gifts for sex further increases the likelihood of coercive sex and infections (Jewkes, Levin & Penn-Kekana, 2016). In South Africa, girls aged 15–19 years reported that they have had five partners and some of these partners were 10 years or older than them (Pettifor, Rees & Kleinschmidt, 2015). It is not clear if the youth are aware of the consequences of their lifestyles. This concern is what motivated the researcher to conduct a study on the perceptions of the youth regarding consequences of unsafe lifestyles regarding the transmission of HIV and TB.

1.3 Rationale of the study

The researcher sought to study the perceptions of youth regarding the consequences of unsafe lifestyles regarding the transmission of HIV and TB in Meadowlands Township, Gauteng Province. Studies have been conducted in Soweto about HIV in White City Jabavu Soweto (Matima, 2010), Knowledge and Attitudes towards HIV vaccines (Bruyn, Sikhosana, Robertson, Mcltyre & Gray, 2011) and Conspiracy beliefs and knowledge about HIV origins among adolescents in Soweto (Hogg, Nkala, Dietrich, Collins, Closson, Cui, Kanters, Chia, Barhafuma, Palmer, Kaida, Gray & Miller, 2017). There is no known study on the perceptions of youth regarding the consequences of unsafe lifestyle regarding the transmission of HIV and TB in Meadowlands Township, Gauteng.

1.4 Significance of the study

From the study findings the Department of Health might better understand the current trends or factors that continue exacerbating the transmission of HIV and TB and come up with new strategies to help reduce the number of new transmissions and implement health promotion strategies. The Department of Education might also be able to help educate the learners about safe living and get other health stakeholders to intervene. The youth and the community might also become aware of behavioural risks or unsafe lifestyles that they engage in, that might expose them to HIV and TB infections.

1.5 Aim of the study

The aim of the study was to explore the perceptions of youth regarding the consequences of unsafe life styles regarding transmission of HIV and TB in Meadowlands Township, Gauteng Province**.**

1.6 Objectives of the study

The objectives of this study are:

1.6.1 To assess the knowledge of the consequences of unsafe lifestyle on the transmission of HIV and TB among youth in Meadowlands.

1.6.2 To assess attitudes on the consequences of unsafe lifestyle on the transmission of HIV and TB among youth in Meadowlands

1.6.3 To assess unsafe lifestyle practices contributing to transmission of HIV and TB among youth in Meadowlands

1.7 Definition of terms

Human Immune Deficiency Virus

HIV is a retrovirus that is spread through body fluids and attacks the body's immune system specifically the DC4 cells in the body which helps the immune system, fight off infections (Allender, Rector & Warner, 2010).

In this study HIV is a virus that weakens the immune system making room for opportunistic diseases like TB.

Tuberculosis

Is an infection of the lungs caused by bacteria called mycobacterium Tuberculosis. It is contagious, and it can be passed through the air by droplet nuclei that are produced when a person infected with TB coughs or sneezes (Allender et al., 2010).

In this study TB is an infection that is more likely to occur in HIV positive people with a low CD4 count.

Youth

It refers to the transitioning stage from dependent childhood to independent adult. It includes young men and women between the ages of 15 and 35 years (National Youth Commission, 1998).

In this study, youths are persons who are aged from 18 to 35 who are able to make personal decisions independently and be held accountable for them.

Unsafe lifestyle

An unsafe lifestyle typically reflects on an individual's habits or risky way of life, likely to cause harm to their health or death. Therefore, a lifestyle constitutes a mode of living of an individual or group (Bell & Hollows, 2006).

In this study, an unsafe lifestyle is a way of living that increases the risks of the youth to contracting and getting ill from HIV and TB and possibly dying from them.

Perception

It's an act of perceiving, apprehending by means of the senses of the mind, cognition or understanding. It is processing which is connected to a person's expectations or knowledge (Bernstein, 2010).

In this study, it is the way in which the youth understands or perceives their unsafe lifestyles, which expose them to transmissions of HIV and TB.

1.8 Chapters outline

The chapters are arranged as follows:

This first chapter introduces the study and its background.

Chapter 2 contains a review of literature,

Chapter 3 contains the research methodology adopted for the study.

Chapter 4 presents the results of the study

Chapter 5 discusses the study findings, conclusion and recommendations.

1.9 Conclusion

This chapter provided the background of the study. It covered the prevalence of HIV and TB co-infections internationally, continentally, nationally and provincially focusing on the Gauteng Province. It also covers the problems identified in the community, rationale and significance of the study and definition of concepts. The next chapter presents the literature review.

Chapter 2

Literature Review

2.1 Introduction

This chapter describes the data-based and theoretical-based literature reviewed. The data-based literature review includes the knowledge, attitudes and practices of the youth towards unsafe lifestyles regarding HIV and TB transmissions, TB and HIV infections, the natural history of TB in HIV positive people. The theoretical-based literature describes the theory that informed the study.

2.2 Data-based literature review

The data based literature reviewed covers how and what the practices, knowledge and attitudes of youths contribute to HIV and TB transmission.

2.2.1 Practices of youth of contributing to HIV/TB transmissions

The youth is at a higher risk of HIV and TB infections due to psychological, social and structural transitions. There are key populations among the youth that are vulnerable and faced with the burden of HIV and TB. These are Men who have Sex with Men, those who inject drugs, those who are in relationships with older partners for social and financial security, those having multiple sexual partners, those who are in the early years of youth and young sex workers, people who smoke, drink alcohol and substance abusers and people living in poorly-ventilated informal settlements (SANAC, 2016).

The practices/ behaviours of youth which puts them at risk of HIV and TB transmissions include unsafe sexual practices, gender inequalities, Intergenerational relationships, smoking, alcohol consumption and drug injection use. TB and HIV are separate diseases which have different modes of transmissions and symptoms. However, they can co-exist due to a compromised immune system. Below is an outline of unsafe lifestyles that expose an individual to contracting each disease.

2.2.2 Risky sexual behaviours

Risky behaviours are defined as individual's sexual practices that may increase the susceptibility of a person to the risks of sexually transmitted infections including HIV, unplanned pregnancy and psychological disorders (Alemu, Mariam, Belay & Davey, 2017). Some of these behaviours

include unprotected sexual intercourse, having multiple sexual partners, early sexual initiation, sex with commercial sex workers and bartering sex for money, goods or favours (Famutimi & Oyetunde, 2014).

Unprotected sexual intercourse (No condom use)

Unsafe sex is one of the variables affecting risky sexual behaviour among youth. Condom use is one of the major ways to prevent sexually transmitted infections and pregnancy (WHO, 2016). There are perceptions among the youth related to condom use which result in some engaging in unsafe sex without using condoms. Use of condoms depends on a number of factors such as knowledge about the proper use of both male and female condoms, the source, rationale for condom use and attitude of both partners towards using a condom at that point of time. A study conducted in Sub-Saharan Africa reported risky behaviours as a common practice of the youth with ill consequences of unwanted pregnancies and HIV transmissions (Idele, 2014).

Multiple sexual partners

Having multiple sexual partners is defined as having 2 or more partnerships that overlap in time which also increase the risk of HIV transmissions. Having multiple sexual partners has been identified as a likely driver for the spread of HIV. In South Africa, having multiple sexual partners is associated with being popular and important among young people. This trend is often associated with no condom use and substance induced sex which increases the risk of STIs and HIV transmissions. Individuals who have multiple sexual partners increase their risks of contracting HIV as each new relationship introduces another pathway for HIV transmissions. The South African Demographic Health Survey conducted in 2013 reported that young males as compared to females in their early 20s were most likely to have multiple sexual partners. The Mandela Foundation-(Human Sciences Research Council) National Survey (2011) found that 9% of young females and 23% of males had more than one sexual partner in the year before the survey. A study conducted on Tanzanian youth indicated that 29% of the participants were sexually active and of which 47% have had more than one sexual partner were HIV infected (Magu, Wanzala & Mutugi, 2012). Results from a population based sample conducted in Botswana showed that 23% of the respondents reported having multiple sexual partners (Cohen, 2011).

When someone first contracts HIV, he is highly infectious. HIV viral load is high during the first months after the onset of infection, meaning that a large amount of the virus is in a person's blood. HIV is more likely to be transmitted with each act of unprotected sex during this acute stage of

infection than in the following months to years. Therefore someone in multiple sexual relationships who acquires HIV is more likely to pass it on quickly because he will probably engage in unprotected sex with more than one person during this when he is most infectious (Cohen, 2011).

Early sexual initiation

Globally, early sexual activity remains a recurring public health issue. Early sexual activity is not without its accompanying complications which may range from increased incidence of multiple sexual partners, unprotected sex and risk of STIs including the transmission of HIV, subsequent risk behaviours later in life, higher sexual risk taking behaviours and more negative attitudes towards condom use. A country based Nepal Demographic Health Survey conducted by the Ministry of Health and Population in 2011, indicated that 40% of young women and 24% of young men had initiated sex before 18 years. Similarly a recent study reported that 59% of males had initiated sex before 19 years (Shrestha, 2013). Several studies in sub-Saharan Africa have shown that early age at first sex is associated with having multiple sex partners and a heightened risk of HIV transmission (Shrestha, 2013). In Tanzania, young people make up to 60% of all new HIV cases and half of the HIV prevalence and one of the reasons suggested is that adolescents initiate sexual activity earlier (Mmbaga, Leonard & Leyna, 2012). A study conducted in Moshi, Tanzania, indicated that 21.6 % of youth started sexual intercourse before the age of 15 years and from the study participants who ever had sexual intercourse more than 80% started sexual intercourse before the age of 18 years (Dekeke & Sandy, 2014).

2.2.3 Gender based violence

Gender-based violence, gender inequalities and power imbalances in relationships are barriers to contraceptive use and condom use. There have been unequal balances of power between men and their sexual partners, an imbalance which has resulted in women becoming more at risk of contracting HIV and becoming the face of HIV. The women's lack of power to speak in relationships means that there is a limited decision-making capability in the relationship and they are unable to use condoms during sex and, therefore, risk infection. Gender Based Violence (GBV) is extremely common in South Africa. This is in part due to the historical inequalities and discriminatory cultural norms (Mosavel, Ahmed & Simon, 2012).

Many of these young women are in abusive relationships or intergenerational relationships and are accorded a lower status than men which has serious implications for the choices that young girls make in their lives, especially with regard to when, with whom and how sexual

intercourse takes place (UNESCO, 2009). Demographic and Health surveys conducted between 2010 and 2015 show that less than 60% of young women with multiple partners do not use condoms with their partners (UNAIDS, 2016). In addition, their male partners either have sex with sex workers or engage in multiple relationships, and their female partners or spouses are unable to insist on the use of condoms during sexual intercourse, either out of fear of losing their main source of livelihood or for fear of any violent reaction. Consequently, many women are left unprotected and are exposed to HIV infection by their male partners (South African National AIDS Council (SANAC, 2006)

2.2.4 Intergenerational relationships/sex

Intergenerational sex has been defined as sex between older men and younger women or girls. Relationships between young women and older men (sugar daddies) have been viewed by researchers as one of the key drivers of the HIV epidemic (Hope, 2007)**. "**Sugar daddies" are often older men with numerous previous sexual partners, who expose young girls to potential sexual abuse, unwanted pregnancy and especially HIV infection (Mandela, 2002). The national HIV household survey which was conducted in South Africa revealed a high HIV prevalence of 29% among females aged 15-19 years who had male partners who were at least 5 years older than themselves (Shisana et al., 2005). The risk of illness and death for those females seemed irrelevant when faced with the immediate need to pay school fees or put food on the table. Because of the significant disparity between rich and poor in Southern Africa, intergenerational and transactional sex are often at the top of the youth's desire in exchange for luxury goods in a globalizing world in which consumerism is prevalent (Hope, 2007).

Such relationships are risky because older partners are more likely to be living with HIV because of their habits of having sexual intercourse with young women in exchange for money and gifts and therefore this puts young people at risk of exposure through unsafe sexual intercourse (Athena, 2013). The unequal power relations reflected in such relationships affect a girl's ability to refuse unsafe sex, hence exposing them to sexually transmitted infections, including HIV/AIDS. It is also quite evident that women are less likely in these types of relationships to protect themselves against HIV infection or even negotiate for safe sex (Luke & Kurz, 2012).

2.2.5 Injection drug use

For some young people, drug use is a part of adolescent experimentation, risk-taking and reward seeking, particularly in the presence of peers. HIV can be transmitted through injection of drugs such as heroin morphine, meth (methamphetamine), cocaine and other prescription drugs and even liquids. The practice of using injections to insert drugs is common among the youth and most dangerous because the needles used and shared among drug users are not sterilized to prevent disease transmissions. Some of these needles can be shared amongst four users without being exchanged or even sterilized (Idele, 2014).

In a 2011 study in Dar es Salaam, United Republic of Tanzania, 25.6% of a sample of young people aged 17–25 years who injected heroin were living with HIV (John Atkinson, McCurdy, Williams, Mbwambo & Kilonzo, 2011). A significant proportion of young people who inject drugs become infected with HIV within the first 12 months of initiation (Hagan, Pouget, Des Jarlais, & Lelutiu-Weinberger, 2018). In Ho Chi Minh City, Viet Nam, 24% of people who inject drugs under 25 years had started injecting within the previous 12 months, and of these, 28% were infected with HIV (National Institute of Hygiene and Epidemiology & Family Health International, 2015). In South Africa there is a way of injecting drugs called Bluetooth which originated in South African prisons and found its way to the streets. This method among young men who are drug addicts in the Gauteng region exposes its users to blood-borne diseases as well as HIV (Idele, 2014).

Young people who inject drugs are more likely than older people to lack knowledge about safer injecting practices and HIV prevention, and to be unaware of risks to their health. Some are unconcerned about HIV, other STIs, viral hepatitis or tuberculosis (Merkinaite & Grund, 2016). They are also more likely than older people to be isolated from harm-reduction services, and to be unable to afford to buy injecting equipment. In addition, criminalization of drug use and stigma and discrimination directed at people who inject drugs also increases their vulnerability to HIV transmission. In some instances, such people don't eat balanced meals, therefore upon HIV transmissions and taking long to seek medical care, their immune systems become weak and unable to fight off other infections resulting in acquiring opportunistic infections such as TB (Merkinaite & Grund, 2016).

2.2.6 Smoking

TB is spread from an infectious person to a vulnerable person through the air. It is also spread through aerosolized droplets after an infected person coughs or sneezes. People nearby may breathe in bacteria in the droplets and if exposed long enough become infected as well. People with TB of the lungs are most likely to spread bacteria to those with whom they spend time with – including family members, friends and colleagues (JAMA, 2017).

Active and passive smoking among the youth is a risk factor for contracting TB, independent of alcohol use. Active smoking is associated with recurrent TB and death due to TB disease (National Department of Health, 2014). Individuals who smoke have a 73% increased risk of becoming infected with Tuberculosis and are more than twice likely to develop active tuberculosis than those who do not smoke. This suggests that smokers are 40% to 60% more likely than non-smokers to develop TB disease after being infected with TB bacteria (JAMA, 2017). The growing trend of tobacco use among the youth has been worry some. According to the findings of Global Youth Tobacco Smoking project 12% of 13 to 15 year old Iranian youth were occasional smokers. In the second phase of the similar project conducted in 2017 the rate reached 27% (WHO, 2017).

2.2.7 Alcohol consumption

Excessive alcohol consumption is a significant problem for South Africans. Alcohol use by the youth in South Africa is characterised mainly by binge drinking. Binge drinking is a major risk factor for a range of alcohol related harms in South Africa of which some include sexual risk behaviour, HIV and TB. High alcohol consumption (on average >40g alcohol per day) is associated with a three-fold risk of developing TB. This is because alcohol has a direct toxic effect on the immune system and the physical effects of alcohol abuse may impair the immune system (National Department of Health, 2014). A 2017 meta-analysis of numerous medical studies found that there were about 10.4% million incidents of TB around the world in 2015. In all studies, heavy consumption of alcohol was closely related to the higher rates of TB. Alcohol use in youth increases their risks of contracting TB by 35%. When a person breathes in TB bacteria, the bacteria settle in the lungs. If that person's immune system is compromised, or becomes compromised, the bacteria begin to multiply. From the lungs, they can move through the blood to other parts of the body, such as the kidney, spine and brain. People who use alcohol or abuse alcohol are less likely to eat regular, healthy meals; malnutrition adds as additional risk to those who may contract TB (WHO, 2014).

2.3 Knowledge of youth concerning unsafe lifestyles in HIV and TB transmissions

The knowledge about HIV and TB is centred on disseminating information about the transmission, prevention and cure. In South Africa, recent findings indicated that the proportion of young people aged 15-24 years with comprehensive knowledge of HIV prevention was generally high although there were some gaps. Similarly, attitudes towards people living with HIV were generally positive although some attitudinal barriers were identified (HEAIDS, 2010). The focus on health education makes sense objectively and intuitively, considering that communication and education reach the youth faster than any method of prevention. Education is necessary in combating the culture of silence, misconceptions, stigmatization and discrimination associated with HIV and TB amongst the youth (UNESCO, 2016).

A United Nations AIDS Programme report (2012) stated that most youth did not know the modes of HIV transmission and were poorly informed on methods by which they could protect themselves against infection. The same study revealed that half of all youth in the countries surveyed had mistaken beliefs about the transmission of the virus. The National Youth Risk Behaviour Survey (2008) reported that 95% of young people knew that there were ways to avoid HIV infection and 77% knew that use of condoms prevented transmission. The survey suggested that 62% of HIV-infected young people thought they were at little or no risk of contracting HIV. This finding confirmed other studies in which young people appear to underestimate their personal risk of infection (Reddy et al., 2010).

Despite high levels of knowledge of HIV and AIDS among young people in South Africa, studies have revealed a mismatch between knowledge and reported sexual behaviours (Simbayi et al., 2005; James et al., 2004; Panday et al., 2009). Simbayi et al., (2005) examined risk behaviours and HIV risk factors among young people living in a South African township and established that 68% of men and 56% of women reported engaging in sexual behaviours with a high risk of HIV transmission. Although knowledge about HIV transmission was generally high, there was evidence that misconceptions persisted, particularly myths related to HIV transmission. For young men, HIV risk factors were associated with fewer years of education, lower levels of HIV related knowledge, negative attitudes to condoms, and dagga (marijuana) use. Among young women, HIV risk factors were high rates of unprotected vaginal intercourse and the perception that condoms get in the way of sex (Simbayi et al., 2005).

The responsibility of promoting change and imparting updated information to the youth lies firmly in the hands of parents, teachers, nurses and all primary health care workers as well as those working with sexual and reproductive health services. They should advance some strategies in creating awareness campaigns that will help prevent HIV and TB and generate knowledge and understanding, promote change of attitude in the youth that will allow them to develop attitude change and allow them to be assertive in dealing with sexual matters (UNESCO, 2016).

Relevant information given has the ability to change attitudes and behaviours related to HIV in the youth. Evidence shows that the youth is less likely to be vulnerable to HIV and enables them to live in a protected society when they are given adequate information related to HIV, sexual health and prevention information (UNICEF, 2016). Table 2.3 below shows the comparison rates in African countries among 15 to 24 year old young people about HIV prevalence rates in percentages and comprehensive knowledge they have about HIV. The table shows the top three HIV prevalence rates of countries with females being the most affected, compared to males in Swaziland (15.6% in females; 6.5% in males), Lesotho (14.2% females and 5.4% males) and Botswana (11.8% in females and 5.2% in males) having the highest HIV prevalence rates than other countries (UNICEF, 2016).

Countries like Namibia, Malawi, Kenya and Rwanda reported having a higher percentage of youth both males and females with a less than 10 % difference who are knowledgeable about transmission of HIV. On the other hand countries like Burundi, Angola and Ethiopia need to educate their youth more about HIV because they present a lower percentage than other countries of comprehensive knowledge among the youth. Negative outcomes of percentages of HIV prevalence among the youth were reported in Comoros, Ethiopia and South Sudan, which either implies that the countries could not get an accurate number of their youth and prevalence rates or no research was conducted to report on. The same goes for reports on comprehensive knowledge the youth has about HIV. Countries like Botswana, Comoros, Eritrea, South Africa and South Sudan show no reports (UNICEF, 2016).

Table 2.1: Comparison rates between male and female youth in HIV prevalence and knowledge.

Country	HIV prevalence (%) among young people (15-24 years old)		Comprehensive Knowledge of HIV (%) among young people (15-24 years old)	
	Male	Female	Male	Female
Angola	0.6	1.6	32	25
Botswana	5.2	11.8	-	-
Burundi	1.0	2.1	1	30
Comoros	<0.1	<0.1	-	-
Eritrea	0.2	0.4	-	-
Ethiopia	-	-	33	20
Kenya	1.8	4.1	55	48
Lesotho	5.4	14.2	29	39
Madagascar	0.1	0.1	26	23
Malawi	3.1	0.1	42	42
Mozambique	3.1	8.6	34	36
Namibia	2.3	5.8	62	65
Rwanda	1.3	1.9	54	51
Somalia	0.4	0.6	-	4
South Africa	4.5	13.6	-	-
South Sudan	-	-	-	-
Swaziland	6.5	15.6	54	58
Uganda	2.3	4.8	38	32
Tanzania (United)	1.7	3.9	43	48
Zambia	4.2	8.9	41	38
Zimbabwe	3.3	6.9	-	53

Source (UNICEF, 2016)

2.4 Attitudes of the youth towards unsafe lifestyles and HIV and TB transmission

Early adulthood is a crucial period of one's development, with physical and emotional growth. Young people experience growing personal autonomy and have the responsibility over their health. The transition from childhood into adulthood is often the time of exploring, engaging in peer relationships, identifying gender norms, sexuality and economic responsibility (Top AIDS, 2016). For knowledge about risky behaviours to HIV and Tb transmissions to result in risk-reduction behaviour, shifts in attitudes and social norms are often required in order to create environments that support and encourage change among young people (Pettifor et al., 2014).

According to a national survey on HIV and sexual behaviour among 15-24-year-olds conducted in 2013, indicated that majority of participants disagreed that it was acceptable to have many sexual partners (97%), to pressure someone to have sex (98%) or to have a sugar mommy or sugar daddy who bought you things in exchange for sex (95%) (Pettifor et al., 2014). In the same survey, 20% of young people agreed that it was cool to have a sexual partner who was older. Females were significantly more likely to agree with this statement than males. While young people were confident that they could discuss condom use with their partner (90%), fewer were

confident that they could use a condom after drinking alcohol or taking drugs (43%) (Pettifor et al., 2015). It was frequently reported that condom use was discouraged by feelings of trust, respect and fidelity that developed within steady relationships, while condoms were generally accepted in casual encounters. There is ample evidence that campaigns and programmes build knowledge relating to HIV transmissions from risky behaviours. But there is less consistent evidence of their effectiveness in improving skills or changing values, attitudes and peer norms (Pettifor, 2015). There is a need for more rigorous evaluation of institution-based HIV interventions that focuses on biological outcomes, such as STI, HIV and pregnancy rates, which would indicate behaviour change.

2.5 Tuberculosis and HIV co-infection

TB and HIV co-infection place an immense burden on the health care systems and pose therapeutic challenges. Infection with HIV is the most important risk factor predisposing for TB infection. When someone has both HIV and TB, each disease speeds up the progress of the other. HIV speeds up the progression from latent TB to active TB, while TB also accelerates the progress of HIV infection (Mayer & Hamilton, 2010). HIV and TB infections are two different infections. If you are HIV positive, you will not get TB infection unless you are in contact with someone who has TB. However, if you are living in a country with a high prevalence rate of TB such as India or South Africa, TB transmission might happen without one realising. Similarly, if you have TB you will not get infected with HIV unless you perform unsafe activities like unsafe sex or sharing unsterilized needles with an HIV positive person (Suchindran, 2015).TB also occurs earlier in the course of HIV infection than many other opportunistic infections. The risk of death in HIV/TB co-infection is twice than that of HIV positive people without TB. This is more so when antiretroviral therapy is not taken into account (Sucjindran, 2010).

2.6 The natural history of TB in HIV positive people

When people have a damaged immune system, such as those who are HIV positive and are not receiving ARVs, the natural history of TB is altered. Instead of there being a long phase between infection and development of the TB disease, people who are HIV positive can become ill with TB within weeks to months, rather than a normal years to decades (Kanabus, 2018). The risk of progressing from latent to active TB is estimated to be between 12 to 20 times greater in people infected with HIV, than those without HIV. This also means that they become infectious and pass

TB to other people. Overall, it is considered that the lifetime risk for HIV negative people of progressing from latent to active TB is about 5-10 % and for HIV positive people the same figure is the annual risk (WHO, 2017).

2.7 Global TB and HIV co-infection statistics in 2016

In 2016, about 374 000 people who had both HIV and TB were believed to have died globally. This is in addition to the 1.3 million people who died from TB alone (WHO, 2017). Those people who had HIV/TB co-infection, when they die, they are internationally reported as having died of HIV infection (WHO, 2016).

Table 2.2 below shows the estimated WHO TB mortality statistics for HIV positive people in 2016 by age, gender and region. The statistics reported global TB mortality rates of 374 000 in 2016, with males between ages 15 and older responsible for higher mortality rate of 206,500 compared to females with mortality rate of 114,700. The statistics still show a higher mortality rate in two leading countries in Africa with a mortality rate of 320 000 per year and South East Asia 35 000 per year. Although Eastern Mediterranean's mortality rates are the least globally, they also increased to 3 000 in 2016 from 1000 in 2015 (WHO, 2017).

Table 2.2 Global TB mortality statistics for HIV positive people in 2016.

Region	TB Mortality Total	Males 15 years and older	Females 15 years and older
Africa	320 000	177 000	100 000
Americans	6 200	2 900	1 500
Eastern Mediterranean	3 000	1 400	1 100
Europe	5 100	3 000	1 200
South East Asia	35 000	20 000	9 900
Western Pacific	5 000	2 200	1 000
Global Total	374 000	206 500	114 700

Source: WHO, 2017

2.8 How HIV infection lead to TB infection

Many people get exposed to the bacterium that causes tuberculosis, but that does not mean all of them will get sick, however, the odds will change. The odds will change for someone with HIV. HIV attacks and weakens the immune system leaving the body vulnerable to infections. So once the bacteria that causes TB enters the body of someone with HIV, usually through the lungs, the bacteria will be able to multiply, invade and cause full blown tuberculosis, rather than being contained by healthy immune system. For people with HIV, the immune system cannot fight the tuberculosis infection (WHO, 2018).

Tuberculosis can occur early in the course of HIV infection and throughout the stages of HIV infection. The risk of infection however increases soon after infection with HIV (Sonnenberg et al., 2015). Although TB can be a relatively early manifestation of HIV infection, it is important to note that the risk of developing TB increases as the CD4 count decreases. Even with effective immune reconstruction with ARVs, the risk of TB generally remains elevated in HIV positive people above the background risk of the general population even with high CD4 cell counts (Gupta et al.,., 2012).

2.9 The impact of TB on the natural history of HIV infection

Tuberculosis may similarly negatively impact the natural history if HIV. Several studies have indicated that TB/HIV co-infection increases the risk of HIV progression and death, particularly in people with untreated HIV infection (Lopez, 2007). The effect of TB on the progression of HIV is hypothesised to be attributable to increased immune activation (Vanham et al., 2006). TB and HIV are separate diseases, with different modes of transmission and symptoms, however when they are combined they are still the leading cause of death among HIV infected individuals in South Africa (CDC, 2014).

2.10 Having HIV and TB together (Co-infection)

TB can develop through progression of recently acquired infection, reactivation of latent infection or exogenous re-infection. Once infection occurs, the risk of rapid progression is much greater among persons with HIV infection because HIV impairs the host's ability to contain new TB infection (CDC, 2014). A person with latent or inactive TB may go for years without experiencing any TB symptoms. But should a person contract HIV and their immune system weakens, that latent TB infection is more likely to develop into active TB. In fact, HIV is the single greatest risk factor for the development of TB. If both diseases are active, the combination of the diseases can be fatal (CDC, 2014).

TB and HIV play off each other's weaknesses. HIV weakens the immune system and makes it more vulnerable to infection and disease, encouraging TB to develop. A tuberculosis bacterium also takes advantage of body's slow defences and spreads. Combination of the two illnesses creates perfect scenario to allow the bacterium to infect the lungs and other organs and by definition an HIV infected person who has active TB is considered to have AIDS, the most advanced stage of HIV infection (CDC, 2014).

The consequences of HIV that give rise to opportunistic infections like TB have been felt across all spheres of life, mainly through the mortality affecting women and men during their reproductive life. The impact of HIV create a burden on the individuals, their families and the economy of the country. This has put a major financial burden on the health department because funds are diverted from other programmes to HIV prevention, care and treatment services. It also impacts the future of the country's economy because these young people are the country's hope and is the coming generation that has to replace the older generation and take full participation in the economy of the country (Athena, 2013). With tuberculosis being an opportunistic infection, it is

more severe when combined with HIV. Thus, it is important for an individual to get regularly tested for TB when they are diagnosed with HIV (Athena, 2013).

2.11. Conceptual or Theoretical-Based literature

The Theory of Planned Behaviour (TPB) guided the study. Ajzen & Fishbien's theory of planned behaviour (1980) allows the researcher to explore why the youth engage in risky behaviours that expose them to HIV and TB transmissions (Ajzen, 2012).

According to the Theory of Planned Behaviour (Ajzen & Fishbein, 1980), the central determinant of behaviour is the individual's intention to perform the behaviour in question. Intentions are assumed to capture the motivational factors that influence behaviour. They are indications of how hard people are willing to try, or how much of an effort they are planning to exert, in order to perform the behaviour.

The theory postulates three conceptually independent determinants of intention. The first is the attitude towards the risky behaviour that the youth engage in, that puts them at risk of HIV infections. It also refers to the degree to which the youth performing risky behaviours have favourable or unfavourable evaluation of the behaviour they are engaging themselves in or about to engage in. This relates to the youth's attitude to unsafe sex. Most youth have unsafe sex with the intention of enjoying it without a condom, as they believe that "you cannot eat a sweet that is wrapped". This clouds their judgement and evaluation of possible outcomes that might arise from the acts they engage in which can either be unplanned pregnancies or contracting HIV and other sexually-transmitted infections. The second predictor is a social factor termed subjective norm. It refers to the perceived social pressure to perform or not to perform the risky behaviour, such as injecting drugs, engaging in unprotected sex, having intergenerational relationships and having multiple sexual partners. This factor can be related to the level of knowledge the youth have that is associated with knowing the right and wrong thing to do when it concerns risky behaviours that might make them at risk of contracting HIV (WHO, 2015).

The third determinant of intention is the degree of perceived behavioural control. This factor refers to the perceived ease or difficulty of performing a certain behaviour that puts them at risk of HIV, and it is assumed to reflect past experience as well as anticipated impediments and obstacles. This factor relates to the youth's practices that put them at risk of contracting HIV. It seems to be an easy task for young people to have unprotected sex from alcohol abuse and even try new methods of using drugs that expose them to HIV. It also gets easy for young drug addicts to

contract HIV because of the methods they use, like injecting drugs such as methamphetamine. As a rule, the more favourable the attitude and subjective norm with respect to a particular behaviour and the greater the perceived behavioural control, the stronger the individual's intention to perform the behaviour under consideration should be. Intention, in turn, is viewed as an immediate antecedent of actual behaviour. The stronger the people's intentions to engage in unprotected sexual intercourse or inject drugs with a shared unsterilized needle, the more successful it is going to happen and contract the diseases (WHO, 2015).

2.12 Conclusion

This chapter discussed the prevalence of HIV/TB co-infections globally. The literature indicated that HIV and TB are the most spreading diseases in developing countries especially among young people, whereby South African TB patients with a known HIV negative status were reported at 43% in 2016 and 57% having a positive HIV status (Gauteng Department of Health, 2016). It also indicated that the youth are at the centre of the global TB and HIV pandemic wherein an estimated 11.8 million young people globally were HIV positive. Literature also indicated that 2.1 million people between ages 10 and 19 years were found to be HIV positive worldwide in 2016 (UNAIDS, 2016). This chapter also discussed factors associated with HIV and TB transmissions, including unsafe sexual practices, gender inequalities, intergenerational relationships and injection drug use.

Chapter 3

Research methodology

3.1 Introduction

This chapter is about the nature of the study and the research design. The section includes the study design and procedures that were followed, population and location of the study, sampling and sampling procedure, data collection method, data collection instrument, data management and analysis and ethical considerations.

3.2 Study design

A quantitative, cross-sectional descriptive design study was adopted in the study. The design was chosen to assess the knowledge, attitude and practices of the youth concerning the co-infection of HIV and TB transmissions.

A cross-sectional study allows the investigator to examine data at one point in time. The researcher collects data from respondents once rather than on several occasions. The design is less expensive and less time consuming and manageable for the researcher (Akinsola, 2005). Quantitative research mainly deals with numerical data and statistical analysis, to provide quantified information gathered by means of a questionnaire. Quantitative research objectively requires evaluation of data that is numerical and excludes bias from the researcher (Vosloo, 2014).

3.3 Area of study

The study was conducted in Meadowlands, which is in Soweto, under the City of Johannesburg Municipality in Gauteng Province. Meadowlands is one of the largest townships in Soweto. It comprises of 10 spread zones. The township is occupied by a wide range of people from different cultures who were forcefully removed from Sophiatown and placed in Meadowlands. Today Meadowlands is one of the few townships in Soweto that does not have squatter camps or informal settlements. In addition, there are housing developments, brick houses and tarred roads. There are 12 primary schools and 8 high schools, to accommodate all residents across the 10

Zones. Residents have access to basic electricity, water and clinic services. The area also has recreational facilities like the Dorothy Nyembe Park, located in Zone 10. It's one of Meadowlands' biggest parks which was re-launched in 2003 after a huge makeover. The 3,5ha Park has netball courts, a soccer field, a volleyball court, a basketball court and areas set aside for residents to play chess and morabaraba. Meadowlands' also has shopping complexes for its residents (Meadow-point and Ndofaya Mall), different churches and a number of community centres. The township is estimated to have a population of 570 635, which is made up of young people, pensioners and children and 153 756 households. The township has 4 clinics distributed among the zones Meadowlands clinic in Zone 2, Meadowlands Portacabin clinic in Zone 10, U-care walk-in clinic in Zone 9, Singcobile clinic TB unit in Zone 10. They provide services like antenatal care (ANC), abortion or termination of pregnancy (TOP), family planning (FP), and HIV-related service, dental and mental care and TB related services. Meadowlands also has the second largest population among other townships in South Africa; Africans comprising 88 percent and coloureds 11% and 36, 2% of youth (STATSSA, 2016).

3.4 Study population and sampling

3.4.1 Population

Population refers to the entire mass of observations, which is the parent group from which a sample is to be formed. It is also the total count of individuals men and women which is to be included in a survey (Pandey & Pandey, 2015).

The population of the study included male and female high school learners over 18 years of age in matric in three high schools.

3.4.2 Sampling

Sampling means selecting a given number of subjects from a defined population as representative of that population. Sample is a small proportion of a population selected for observation and analysis from a large population group (Pandey & Pandey, 2015).

The researcher included all matric learners from three high schools in Meadowlands because approval to conduct the study was granted only in those three schools due to year end exams and the researcher used the total population of matric learners as respondents. A total population was used because the total number of learners from the three high schools was small which was 414.

3.5 Measurement instrument

A self-developed questionnaire (Appendix A) was used to collect data. The questionnaire was divided into four sections; Section A: Identifying particulars, Section B: Assessment of youth's knowledge, Section C: Exploring youth's attitudes and Section D: Describe youth's practices concerning co-infection of HIV and TB which addressed the study objectives. The questions in the questionnaire were in English, close ended and they were not translated to the respondents. A LiKert scale was used in the instrument where participants were asked to indicate whether they strongly agreed, agreed, were neutral, disagreed or strongly disagreed with the statements. The questions were not explained to the learners before and during data collection.

3.6 Pre-test

The researcher chose 10 respondents from one of the schools who did not form part of the main study to pre-test the instrument. This was done to determine whether the questions in the questionnaire will be understood by the respondents or whether they will need translation of some questions. The pre-test respondents gave feedback on the questionnaire and the findings indicated that the questions were not difficult for them to answer and they did not need any translations or clarities on any of the questions on the questionnaire. The respondents used for the pre-test were not included in the study and their questionnaires were also not recorded as part of collected data.

3.7 Data collection

Data collection refers to gathering information from the respondents. This process may involve issues around quantification of variables, levels of measurement and the appropriate techniques for gathering information (Swartz, De La Rey, Duncan &Townsend, 2013).

Researcher arranged with the learners to communicate days which they would be free for data collection because they were busy with their preliminary exams. Data was collected over different days including weekends with groups of about 20 learners who confirmed their availability on those specific days. The respondents who were included in the study were given information letters, which informed them about the purpose of the study and those willing to be part of the study were given consent forms to sign to be part of the study. The researcher then distributed questionnaires to the learners to be completed. The researcher used the signed consent forms

to keep track of participants to avoid repetitions. The learners were also divided into groups where each member appeared on a specific group once.

3.8 Data management and analysis

The researcher coded the questionnaire using code sheet of the Statistical Package for Social Sciences Software (SPSS) version 25.Then coded the data obtained from the learners and analysed it using the SPSS version 25. Descriptive statistics and frequencies were used to describe the data and obtained results were presented in the form of tables and charts. Cross tabulation and sample t-tests were used to determine the relationship between knowledge, attitudes and practices towards HIV/TB co-infection transmissions demographics. The level of significance was set at P≤0.05, any value that was equals to or less than 0.05 was regarded as significant (association) and any value that was above 0.05 was regarded as no significant (no association)and the results obtained were presented in the form of tables and charts.

3.9 Validity and Reliability

3.9.1 Validity

Validity refers to the extent which any measuring instrument measures what is intended to measure. It is concerned with the accuracy of measurement. However it is also affected by survey design, since it also depends on asking questions that measure what is supposed to be measured (Creswell, 2014). The questionnaire was analysed by the researcher to check if important elements of the study were well chosen and were in-line with the objectives of the study. Face Validity refers to whether the instrument or test measures what it is supposed to measure (Lane, 2013). The questionnaire was also assessed by lecturers from the University of Venda, Public Health Department and members of the Higher Degree Committee, to check if it was measuring what it was supposed to measure and that the respondents would understand how to answer the questions. Content validity- The questionnaire was evaluated by the supervisors, lecturers from the Department of Health, Research and Knowledge Department from the Department of Education.

Validity of the research study is an extent at which requirements of the scientific research have been followed during the process of generating research findings (Oliver, 2010). The study results are legitimate because of the way the respondents were selected based on their age and assumed knowledge of HIV and TB. Data was also carefully recorded and analysed with no bias.

3.9.2 Reliability

Reliability refers to the consistency, repeatability and stability of results over time. That is the researcher's results will be considered reliable if consistent results have been obtained in identical situations but different circumstances (Creswell, 2014). To ensure reliability of the questionnaire a test-retest method was used. The questionnaire was given to a group of 10 learners to respond and after a period of 1 week the same group was given the questionnaire again. This was done to check the consistency and accuracy of the questionnaire and if it would produce the same results. The results of the questionnaire were the same.

3.10 Ethical considerations

3.10.1 Approval and permission

Before data was collected, the researcher obtained approval to conduct the study from the University of Venda Higher Degree Committees (Appendix H). Ethical clearance certificate from the Ethical Committee at the University of Venda was granted (Appendix D). Request was sent to the Gauteng Department of Education (Appendix E) and approval was obtained and from participating schools (Appendix F) to conduct the study with their leaners.

Protecting the rights of participants

The following ethical considerations were observed, to ensure that the respondents' rights were protected in the study:

Self-determination

Self-determination was ensured by providing verbal information regarding the study to the learners and teachers. This allowed the respondents to make decisions independently regarding participating in the study.

The researcher explained to the respondents of reasons they were chosen as respondents and the purpose of the study. This was done with information letters that they were given (Appendix B).

Anonymity and confidentiality

To ensure anonymity and confidentiality, the researcher assured the participants that the answers they gave on the questionnaires would not be directly linked to them and that no personal details such as their names, identity numbers and place of residences will be required. The respondents

were also ensured that their information will not be disclosed anywhere else and for any other purposes other than for the study.

Informed Consent

For purpose of giving informed consent, the researcher explained to the youth what the study was about, how they will benefit from it and the importance of conducting it with them. Attached to the information letter (Appendix B) were consent forms (Appendix C that the respondents were to sign giving their permission to be included in the study. There were no minors amongst the participants as they were excluded from the study. The participants were matric learners from 18 years of age, so the assent form was not used.

Voluntary participation

The autonomy requires that individual participation in any study should be freely given and based/guided by informed consent. Respondents were not forced or manipulated to participate at any point in the study and only those who agreed to be part of the study and signed their consent forms were included in the study.

Scientific integrity of the research

Researcher was honest in the study. This applies to a whole range of research including generating and analyzing data, acknowledging direct and indirect contributions of colleagues, collaborators and others. The researcher did not falsify the results at any stage of the study. The findings of research were reported accurately and truthfully. Furthermore, the researcher has recorded results as they were collected. The results were not tampered with to suit the researcher or for any other reason.

3.11 Plan for dissemination and implementation of results

The researcher will share the information gathered on the phenomena to public and university libraries. The researcher will also send other copies of the study to the Department of Education because the study is based in the province. Finally, the researcher will, publish the study online so that people who are comfortable with using technology can access it online.

3.12 Conclusion

This chapter discusses study methodology which was used. This included the study design and area of study. It also presents the sampling procedure, instrument that was used, method of data collection and analysis and ethical considerations used to ensure that the respondents and their rights were not violated in the study.

Chapter 4

Results

4.1 Introduction

This chapter is about presentation of study findings obtained from data analysis. The results are divided into four sections in the questionnaire; Section A: Demographic characteristics, Section B: Assessment of youth's knowledge, Section C: Exploring youth's attitudes and Section D: Describe youth's practices concerning co-infection of HIV and TB.

4.2 Demographic characteristics

Four hundred and ten questionnaires were distributed among matric learners in three different schools in Meadowlands from the initial total number of four hundred and fourteen of matric learners. Table 4.1 shows demographic information of matric learners selected from the three schools. The identifying particulars include age, gender and location. Their age ranged from 18-20 years 100%, 38.5% were males and 61.5% were females. There were 44.1% 18 year olds, 35.6% 19 year olds and 20.3% 20 year olds. Their mean age was 19.

Table 4.1 Demographic information of the respondents (n=410)

Variable		Frequency	%
Gender	Male	158	38.5
	Female	252	61.5
	Total	410	100
Add Age	18	181	44.1
	19	146	35.6
	20	83	20.3
	Total	410	100

4.3 Section A: Assessment of youth's knowledge

4.3.1 HIV Statistics knowledge

The results showed that 89% of learners did not know about the current HIV statistics in their community and only 11% were aware of the current HIV statistics in Meadowlands. Figure 1 below shows the results.

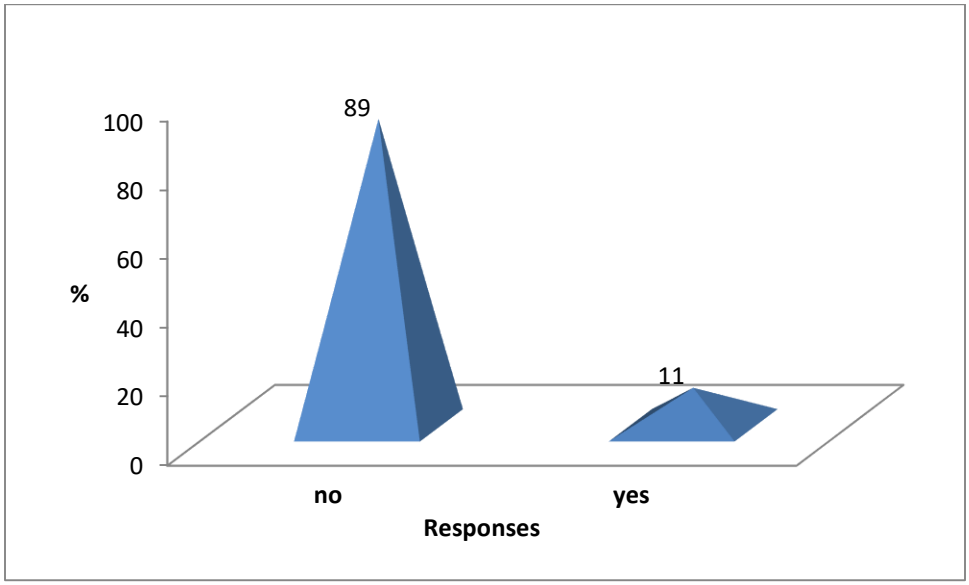

Figure 1: Knowledge about HIV statistics

4.3.2 HIV campaign or talk

The majority of learners 98% reported that they had attended an HIV campaign or talk previously and only 2% of learners reported that they have not attended any of the two. Figure 2 below shows the results.

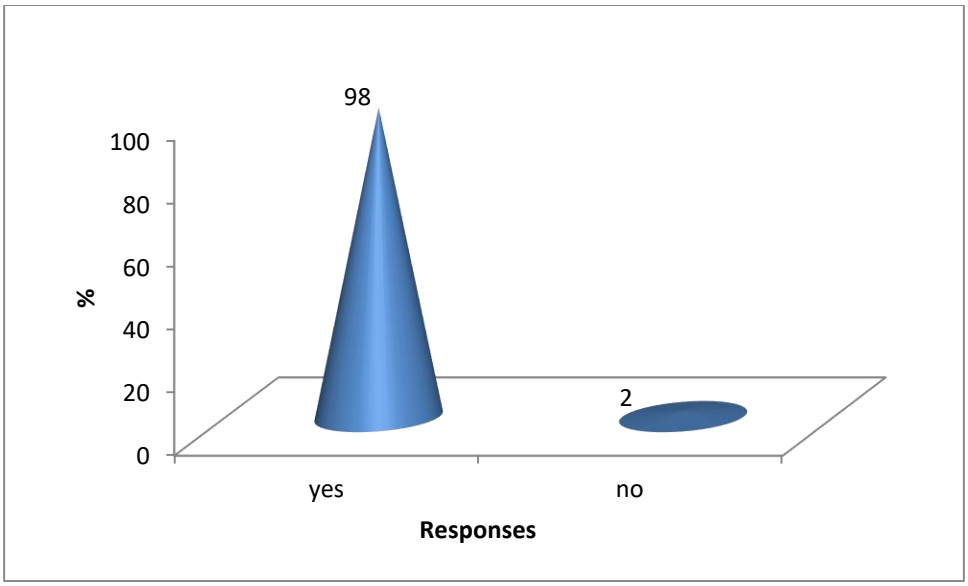

Figure 2: HIV and TB campaigns attended

4.3.3 Youths are sufficiently informed about HIV and TB

Respondents were asked if they were sufficiently informed about HIV and TB. The results revealed that 96% of learners reported that they were well informed about HIV and TB while 4% responded that they were not. The following figure shows the results.

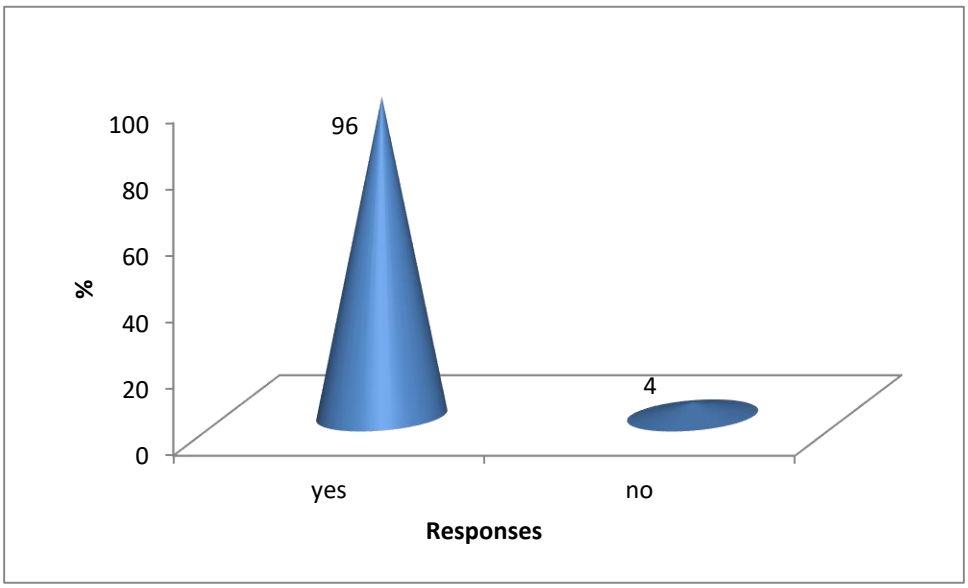

Figure 3: Youth are well informed about HIV and TB

4.3.4 HIV services being offered in the community

All the participants (100%) reported that they were aware of the HIV services being offered in their community.

4.3.5 Antiretroviral therapy

The majority of the learners (98%) agreed that they knew and had heard of antiretroviral therapy.

4.3.6 Multiple Sexual Partners

When asked if one can get infected through having multiple sexual partners 98% replied in the affirmative.

4.3.7 HIV positive people can develop active TB

Figure 4 below shows that 50% of the learners knew that HIV-infected people can develop active TB, while the other 50% did not know.

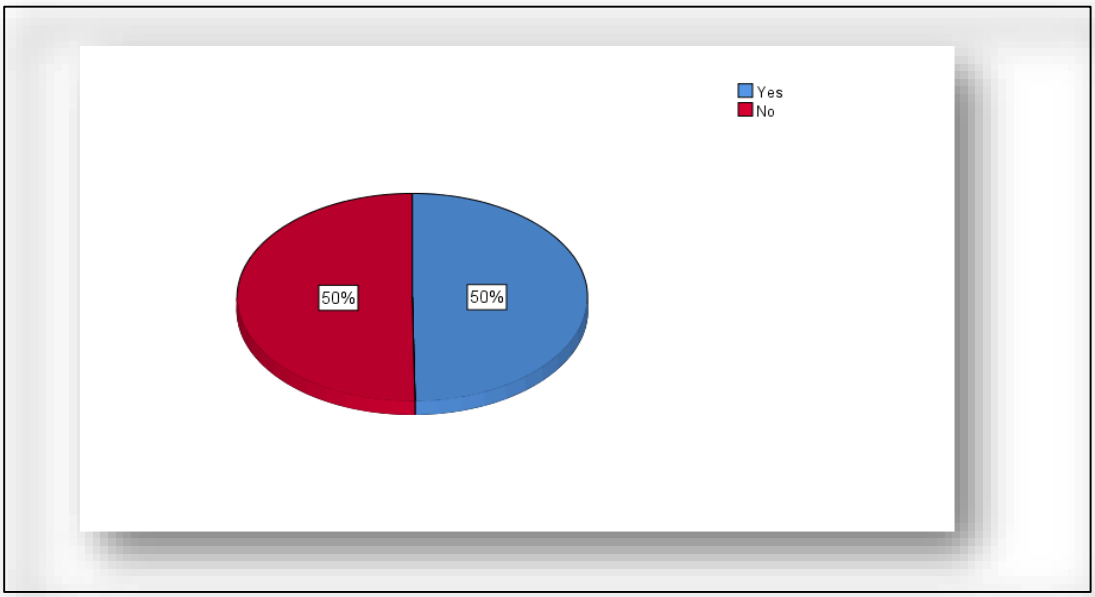

Figure 4: HIV people can develop active TB

4.7.8 TB infection from unprotected sex

The majority of the learners (99%) indicated that one cannot get infected with TB from unprotected sex.

4.7.9 TB centre in the community

More than half of the respondents 54% indicated that they did not know of any TB centre in Meadowlands while 46% indicated that they knew of it. Figure 5 below shows the results.

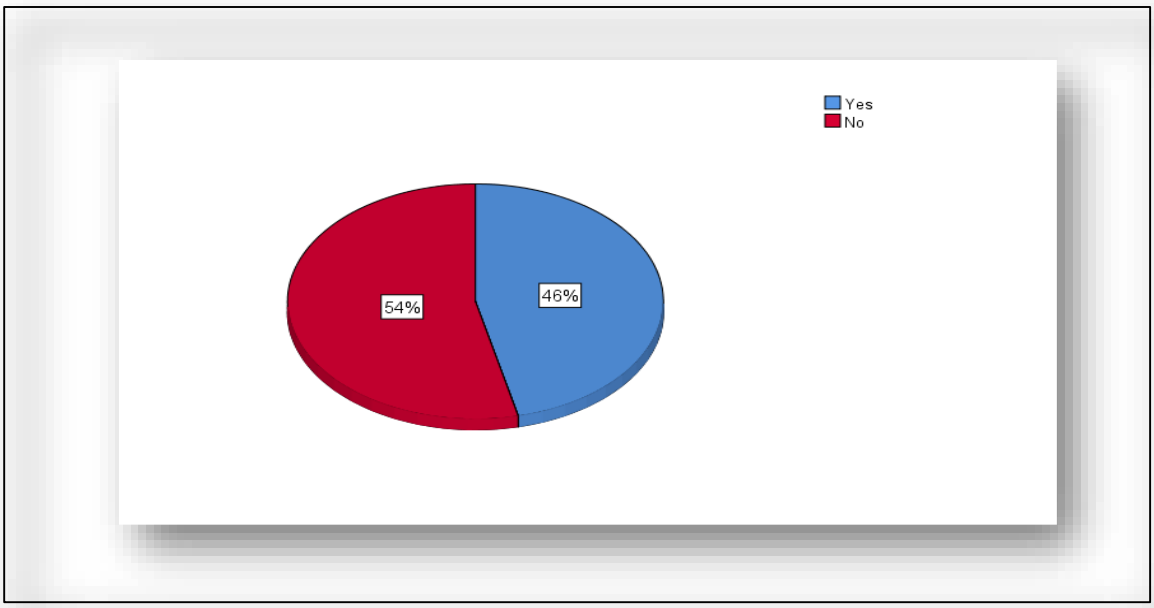

Figure 5: Knowledge about TB centres

4.7.10 knowledge about Sexual Health services

Figure 6 below indicates that respondents knew about the sexual health services 80% of the respondents agreed that the youth in the community knew about them and only 20% did not.

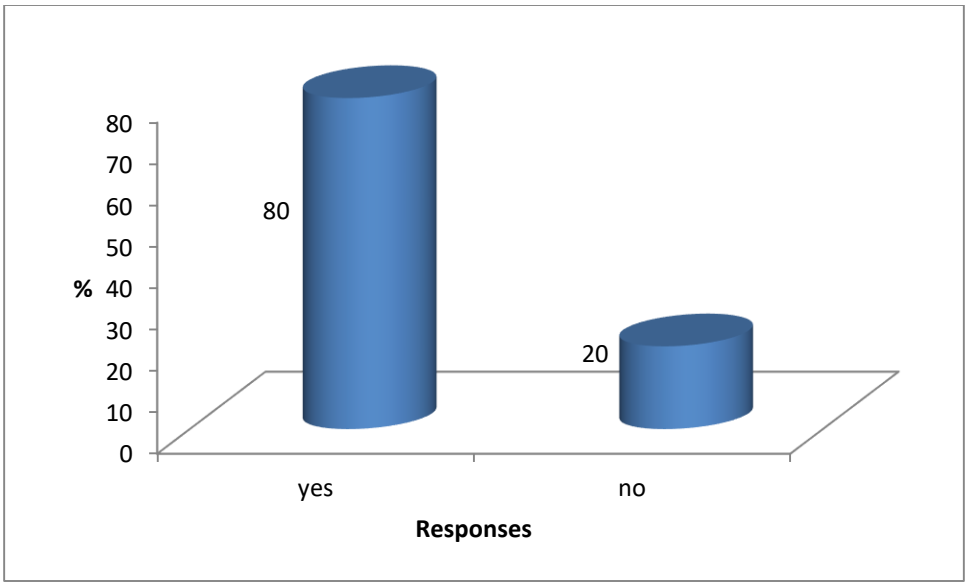

Figure 6: Sexual health services

4.4 Section B: Assessing youth's Attitudes

4.4.1 Sharing home with HIV positive person

Respondents were asked if they would share their home with an HIV positive person. The majority of respondents 53% agreed that they would, while 27% strongly agreed that they would, 19% neither agreed nor disagreed. In other words, they were neutral to the question and only 1% reported that they would not share their homes with HIV positive people. Figure 7 below shows the results.

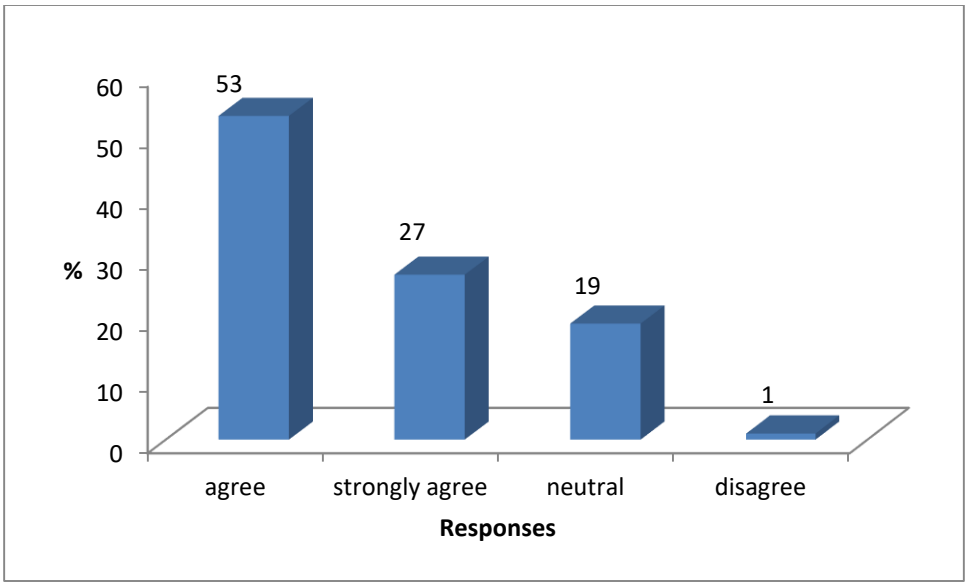

Figure 7: Sharing home

4.4.3 ARVs help HIV infected people

Respondents were asked if ARVs help people who are infected with HIV. About half of the respondents 50% agreed that ARVs help 49% indicated that they strongly agreed with the statement and 1% indicated that they are neutral.

4.4.4 Females are more vulnerable to contracting HIV than males

Respondents were asked if females were more vulnerable to contracting HIV than males and the following were their responses. The majority of the respondents 84% indicated that females are indeed more vulnerable to HIV than males, 8% were neutral, 2% strongly agreed and 6% disagreed. The figure 8 below shows the results.

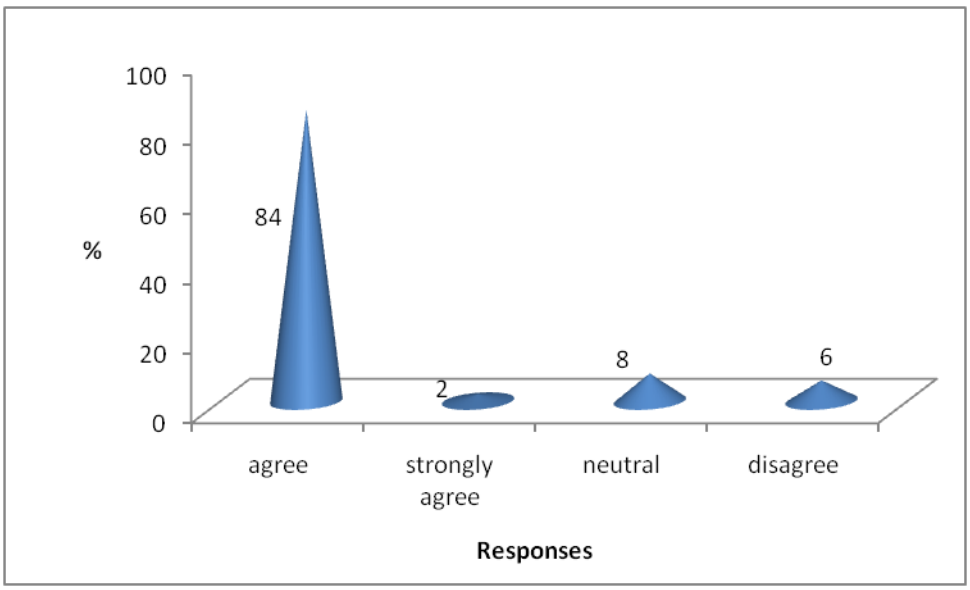

Figure 8: Females are more vulnerable to HIV than men

4.4.5 Voluntary testing

Respondents were asked if they would go for voluntary HIV. The majority of the respondents 82% indicated that they would voluntarily go for HIV testing, followed by 10% who were neutral 5% reported that they would not go for voluntary testing and only 3% indicated that they strongly agreed. The figure below shows the results (Figure 9).

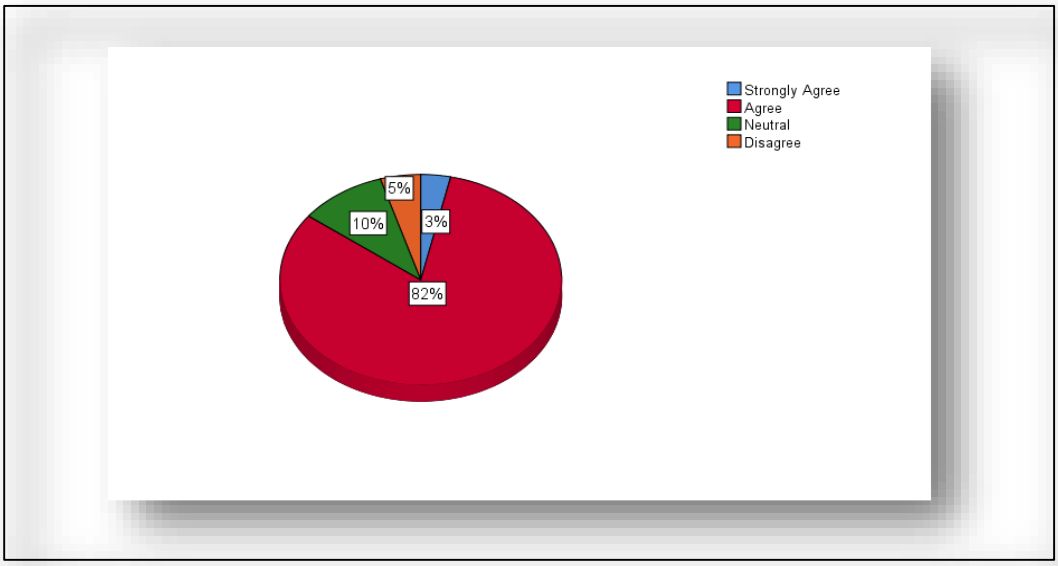

Figure 9: Voluntary testing

4.4.6 Free government condoms in schools

The following figure shows the answers of the respondents were asked if government should provide free condoms in schools. The majority of the respondents 83% strongly agreed while 17% agreed that there should be condoms at schools. Figure 10 below shows the results.

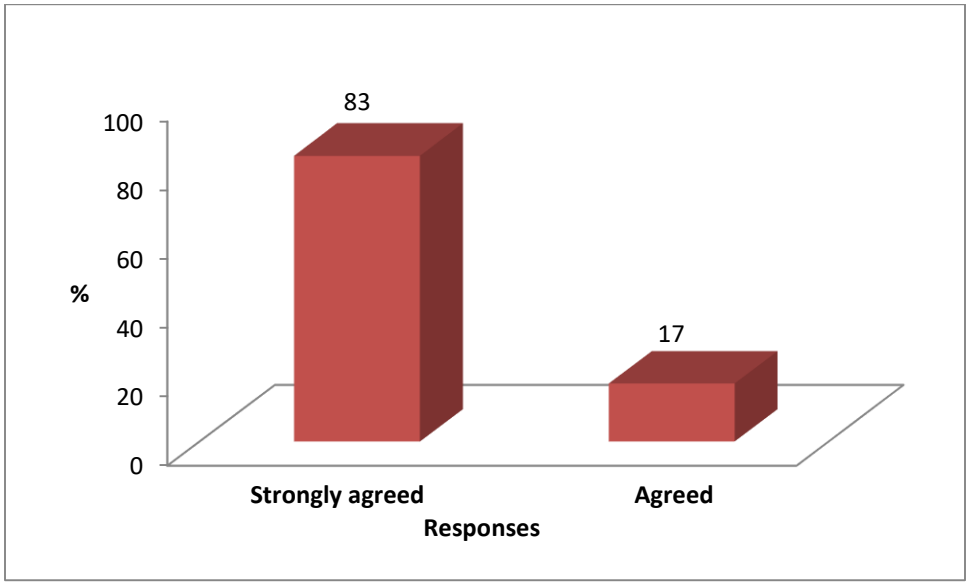

Figure 10: Government should provide free condoms

4.4.7 TB can be easily transmitted

Respondents were asked for their views on whether TB is more easily transmitted than HIV. More than half of the respondents 86% strongly agreed while 13% agreed.

4.4.8 TB treatment works

The majority of the respondents 74% indicated that they strongly agreed that TB treatment works on its patients and 26% agreed that the treatment works.

4.4.9 Youth are well informed about HIV and TB

Three hundred and fifty (85%) respondents strongly agreed that the youth in their community of Meadowlands are well informed about HIV and TB while 15% strongly agreed.

4.4.10 HIV positive people must be allowed to socialise with HIV negative people.

Almost all the respondents 98% indicated that people who are infected with HIV should be allowed to associate with HIV negative people. Only 2% of the respondents were neutral.

4.5 Section C: Exploring youth's practices

4.5.1 Sharing disinfected razors

Respondents were asked if they can get infected with HIV from sharing razors or needles, all the participants 100% agreed.

4.5.2 Injecting drugs exposes a person to HIV and TB

All of the respondents 100% agreed that injecting drugs can expose a person to HIV or TB.

4.5.3 Unsafe sex in the last 12 months

Respondents were asked if they had engaged in unsafe sex in the last 12 months. All the students 100% indicated that they had not engaged in unsafe sex in the last 12 months.

4.5.4. Using condoms with multiple sexual partners

All 100% of the respondents agreed that one can prevent HIV by using condoms with multiple sexual partners.

4.5.5 Preferences in condom use

Respondents were asked if they preferred using condoms when engaging in sex. The majority of the respondents 91% indicated that they like using condoms while 8% indicated that they did not prefer using condoms. The figure below shows the results (Figure 11).

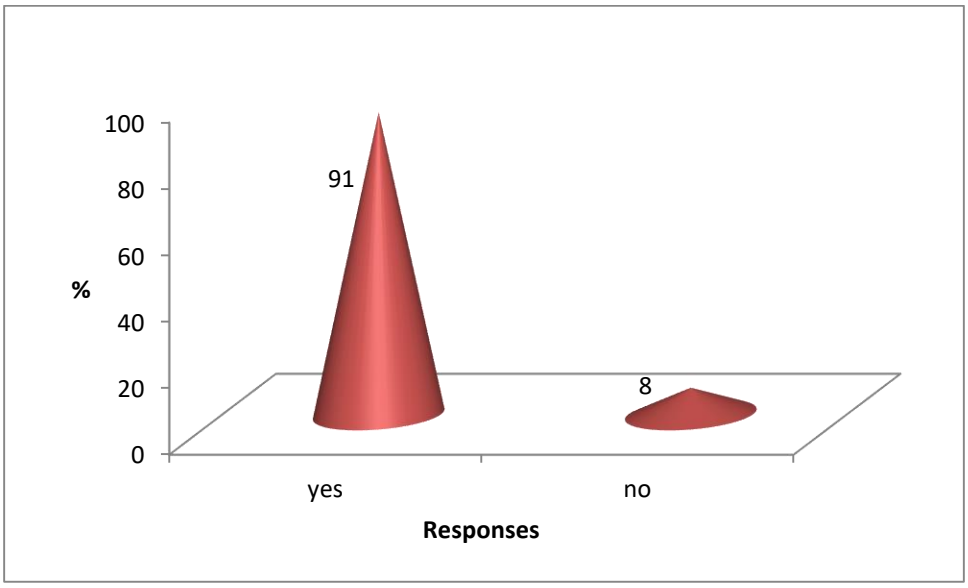

Figure 11: Condom use preference

4.5.6 Substance abuse and unsafe sex in youth

All respondents 100% indicated that substance abuse contributes to unsafe sexual practices in youth.

4.5.7 Intergenerational relationships

Figure 12 below shows the results when respondents were asked if intergenerational relationships expose girls to contracting HIV. The majority of the respondents 71% agreed that intergenerational sex exposes girls to HIV, while 29% disagreed that it exposes girls to HIV.

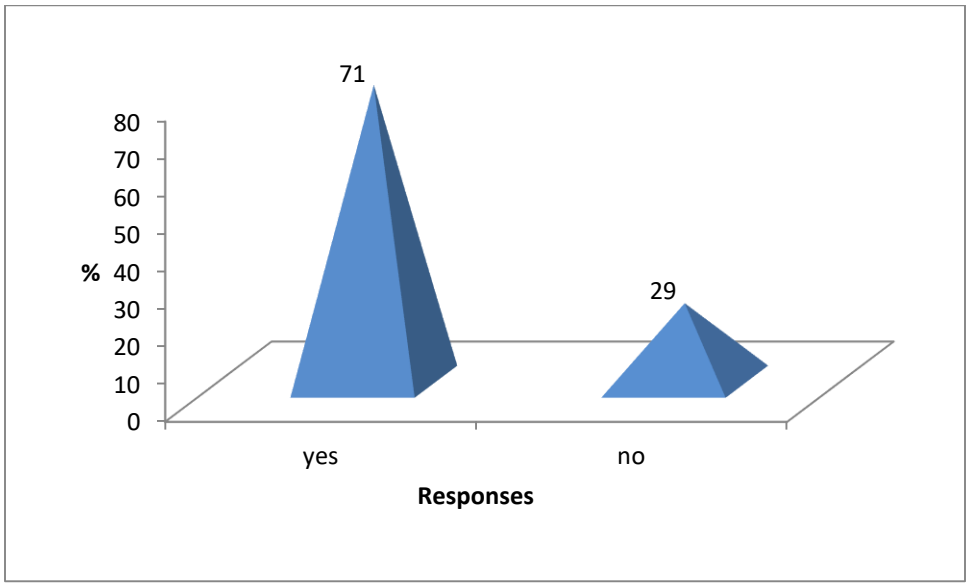

Figure 12: Intergenerational relationships expose girls to HIV.

4.5.8 Fear of stigma

The respondents were asked if fear of stigma is responsible for youth not accessing sexual health services. All 100% respondents indicated that fear of stigma can be responsible for youth not accessing sexual health services.

4.5.9 Peer pressure

Respondents were asked if they believed that peer pressure plays a role in youth exposing themselves to HIV and TB transmissions. All the respondents 100% agreed that peer pressure exposes girls to HIV and TB.

4.5.10 Health education

Respondents were asked if they believed that health education on sexual practices can help reduce the number of HIV infections. All the respondents 100% agreed that Health education can help.

4.6 Cross-tabulation of HIV and TB-related information against demographics (Gender and Age).

Across-tabulation was conducted, to determine the association between knowledge, attitudes and practices of the youth towards HIV/TB transmission and demographic variables (gender and age).

4.6.1. Knowledge of youth about HIV/TB transmission.

The results show a significant relationship between knowledge on transmission and age P=0.001. However there was no significant relationship between learners who knew about the HIV transmission statistics in their community and gender variables P=0.416, learners who were informed about HIV/ TB and age variables P=0.244 and learners who knew that HIV positive people can develop active TB and gender variables P=0.067. Table 4.2 below indicates the results of the association between youth knowledge about HIV/TB transmission and demographic variables (gender and age).

Table 4.2 Association between Knowledge of statistics, transmission and demographics (Gender and Age)

	Yes	No	Total	P-Value (P≤0.05)
Are you aware of the HIV transmission statistics in your community				
Gender Male	18	140	158	
Female	27	225	252	P=0.416
Total	45 (10.9%)	365 (89.0%)	410	
Age 18	10	171	181	
19	30	116	146	
20	5	78	83	P=0.001
Total	45	365	410	
Are you well informed about HIV and TB?				
Gender Male	147	11	158	
Female	246	6	252	
Total	393 (95.8%)	17 (4.1%)	410	P=0.021
Age 18	173	8	181	
19	137	9	146	
20	83	0	83	P=0.244
Total	393	17	410	
HIV positive people can develop active TB				
Gender Male	82	72	158	
Female	118	134	252	
Total	204 (49.8%)	206 (50.2%)	410	P=0.067
Age 18	101	80	181	
19	57	89	146	
20	46	37	83	
Total	204	206	410	P=0.001

4.6.2 Attitudes of youth towards HIV/TB transmission and demographics (Gender and Age).

The results show that there is no significant relationship between attitudes towards HIV/TB transmissions and demographics. A summary of the results is provided in the table below.

Table 4.3 Association of Attitudes and demographics (Gender and Age).

Would you share your home with HIV positive person?							
	SA	**A**	**N**	**D**	**SD**	**Total**	**P-Value (P≤0.05)**
Gender Male **Female**	45 64	80 137	30 48	3 3	0 0	158 252	
Total	109 (26.7%)	217 (52.9%)	78 (19.0%)	6 (1.4%)	0	410	P=0.407
Age 18 **19** **20**	108 66 43	41 40 28	27 39 12	5 1 0	0 0 0	181 146 83	
Total	217 (52.9%)	109 (26.7%)	78 (19.0%)	6 (1.4%)	0	410	P=0.361
ARVs help its patients?							
Gender Male **Female**	80 126	78 123	0 3	0 0	0 0	158 252	
Total	206 (50.3%)	201 (49.0%)	3 (0.7%)	0	0	410	P=0.368
Age 18 **19** **20**	104 73 29	75 72 54	2 1 0	0 0 0	0 0 0	181 146 83	
Total	206 (50.3%)	201 (49.0%)	3 (0.7%)	0	0	410	P=0.074

4.6.3 Youth practices regarding HIV/TB transmission and demographics (Gender and Age).

The results show no significant relationship between practices regarding HIV/TB and demographics. However, there is a strong significant relationship between preference of condom use and age variables (P=0.001). The table below shows the summary of the results.

Table 4.4. Association of Practices and Gender (n=410)

Preference in condom use				
	Yes	No	Total	P-Value (P≤0.05)
Gender Male **Female**	146 230	12 22	158 252	P=0.341
Total	376 (91.7%)	34 (8.3%)	410	
Age 18 **19** **20**	176 124 76	5 22 7	181 146 83	P=0.001
Total	376	34	410	
Intergenerational relationships expose girl to contracting HIV				
Gender Male **Female**	120 172	38 80	158 252	P=0.044
Total	292 (71.2%)	118 (28.8%)	410	
Age 18 **19** **20**	129 108 55	52 38 28	181 146 83	P=0.587
Total	292	118	410	

4.7 Conclusion

Learners' knowledge, attitudes and practices regarding HIV and TB transmissions were associated with gender and age. Females aged 18 years were the most informed about HIV and TB transmissions. Furthermore females aged 18 had more knowledge to males of the same age concerning attitudes of the youth towards HIV/TB transmissions, Females aged 18 years also proved to be the most informed as compared to males and females of aged 19 and 20, concerning practices of the youth towards HIV/TB transmission.

Chapter 5

Discussion, Recommendations and Conclusion

5.1 Introduction

This chapter discusses the study findings, compares the findings with other studies; provides the conclusion, limitations of the study and recommendations. The aim of the study was to assess the perceptions of youth regarding unsafe lifestyles regarding transmission of HIV and TB. HIV and TB are some of the leading causes of death globally and a public health concern.

5.2 Assessment of knowledge

The study findings indicated that only 11% of learners knew about the HIV statistics in their community. This is a poor result as it indicates that the learners do not get updated information regarding the disease, recent statistics and related infection trends. This will affect them because they will continue to engage in unsafe lifestyles contributing to the raising HIV statistics. However, it would also be good if the remaining 89 percentage of learners who indicated not knowing the HIV statistics be informed as well to prevent more infections. This can either be done through learner to learner information sharing sessions or awareness campaigns. The youth being aware of raising statistics of HIV infections among the youth, might help them be more cautious of modes of transmission and mostly practice safe sex.

This study also showed that 98% of learners knew about modes of HIV transmissions and that having multiple sexual partners can expose one to HIV infections. In a study conducted on learners, 88% of learners in Kenya indicated that having sex with different people increases the chances of one getting HIV (Njogu, 2011). Tarkang (2010) also reported that 68% of the learners in Cameroon believed that having multiple sexual partners increases the risks of contracting HIV. The results obtained from learners in Kenya were positive however the study conducted in Cameroon had lower results compared to the results obtained from this study.

The current study indicates that 93% of learners had attended campaigns on HIV where HIV related information was shared. A higher number of learners who were knowledgeable about HIV was also observed in Mysuru village, where 73% of learners reported that they have got HIV-related information from textbooks, teachers and television (Vijayageetha, Narayanamurthy, Vidya & Renuka, 2016).

In another study conducted on secondary school learners in rural areas in Hormozgan Southern Iran, the study reported that 59% of learners obtained HIV related knowledge from the television (Bani, Khorgoei, Mahboobi, Shahrzad, Amirzadeh Shams, Mandegari, Yazdanparast & Masqati, 2012). It is essential that the youth get HIV information that would help them grow into young adults who are well informed and know how to protect themselves from infections. With technology fast improving and the youth having access to gadgets and the internet, such information can also be uploaded on the internet for easy access.

The present study shows that 50% of the learners did not know that an HIV person can develop TB too. However, in a study conducted on Mysore City secondary school learners, results revealed that 77% of the learners had TB related information and about 65% of them knew that an HIV positive person can also acquire TB (Ranuka & Murali, 2013). About 67% of secondary school learners in rural setting of Southern Iran, believed that HIV infected people are also susceptible to infection with TB (Bani et al., 2012). The two studies presented higher results of learners 65% and 67% compared to the 50% obtained in this study who knew that an HIV positive person can acquire TB as well. However all the studies mentioned have presented average results as opposed to the results of learners who had HIV and TB related information as separate diseases. It is a concern of outstanding number of learners who did not know the possibilities of co-infection. Their unsafe lifestyles will put them at risk of contracting latent or inactive TB which they can have without experiencing any TB symptoms. However once they contract HIV, their immune system will weaken causing the latent TB to develop into active TB. Similarly those who contract HIV first, and lack knowledge of co-infection, are also susceptible to exposing themselves to TB bacterium. HIV and TB co-infection is essential.

The findings also showed that 79% of the learners believed that the youth in the community were aware of the sexual health services offered in their community. A study conducted by UNICEF (2016) about the comprehensive knowledge of HIV among the young people (15-24) indicated that countries like Namibia 100%, Malawi 59%, Kenya 81% and Rwanda 81% have a higher percentage of youth who are well informed about HIV and knew where to access HIV services, while other counties, like Burundi 3% Angola 40%, Ethiopia 39% presented a lower percentage. The studies indicated good results regarding knowledge of sexual health services in their communities because then, learners know where to go for sexual health information, HIV testing and information and related treatment to either HIV or STIs. As such even without regular campaigns in schools, learners can be able to visit their local health facilities for their services and mostly information.

5.3 Description of youth's attitudes

The current study findings show that the 52% of learners agreed that they would share a home with a HIV positive person, 26% strongly agreed and only 19% were neutral. A study undertaken by the Higher Education AIDS Programme, which was an initiative of the Department of Higher Education and Training, Indicated that 24% of the students would not share a house with an HIV positive person. In another study conducted on secondary school learners in Mysuru village, results indicated that 50% of their learners had negative attitudes toward people living with HIV, either being a house keeper or sharing their homes with them (Vijayageetha et al., 2016). It is still important that people and the youth being at focus be educated more about HIV risk factors, caring for an HIV positive person and cautions of sharing personal space with an infected person. The remaining percentage of learners who responded negatively might be having misconceptions of the disease or fear and such misconceptions need to be addressed when doing HIV campaigns.

Concerning the effectiveness of antiretroviral medication, the current study shows that almost all the learners 99% believed that ARVs help. A proportion of 79% of people from the Aids programme conducted by the Higher Education indicated that they trusted that the medication was working; hence the longer life spans of people living with it. However, more than 10% people disagreed that ARVs were working (SANAC, 2016).

A study conducted in 2016 in South Africa's rural setting indicated that African youth's mortality has doubled, with girls most at risk. About 52% of sexually active 14-25 year old young women reported to have never used condoms with their recent partners. About a 3rd of new HIV infections in South Africa were among youth aged 15 to 24 year old. These young women are up to 8 times more likely to be infected with HIV than males (Right to care, 2016). The current study also indicated that about 84% of learners believed that females are more vulnerable to contracting HIV than males. The high results obtained by the study might be connected to the gender based violence where power imbalances in relationships are barriers to condom use. Women often lack the ability to negotiate for condom use in relationships. This result can also be influenced by intergenerational relationships that young women engage in which are often transactional and put them at risk of contracting HIV.

Another comparison study conducted in African countries among 15 to 24 year olds on HIV prevalence rates shows the top five countries, with females mostly affected by HIV than males. Countries like Swaziland (15, 6%), Lesotho (14, 2%), South Africa (13, 6%), Botswana (11, 8%)

and Zambia (8, 9%) have the highest HIV prevalence rates among females than other countries (UNICEF, 2016). A comparison survey conducted by the Human Sciences Research Council (HSRC) on households in South Africa, to assess the prevalence and trends of key HIV related indicators showed that HIV-prevalence among 20-14 year olds in South Africa are three times higher among female (15.6%) than males (4.8%) (Human Sciences Research Council, 2018).

5.4 Exploring youth's Practices

The study also found that all the learners 100% agreed that injecting drugs expose a person to HIV. Another study conducted on learners in Kenya revealed that 85% of its respondents agreed that injecting drugs is related to contracting HIV (Njogu, 2011). Vijayageetha et al., (2016) indicated that a high proportion of secondary school learners in India agreed that sharing needles is one of the modes of transmission of HIV. Another similar study revealed that about 83% of learners were aware of safe injection practices and agreed that unsterilized needles pose a risk of contracting HIV (Yadav ana, Vadera, Dhaduk & Gandha, 2012). About 88% of females and 92% of male secondary school learners in India agreed that HIV can be transmitted through sharing needles (Gupta, Anjum, Bhardwaj, Srivastav & Zaidi, 2015). Furthermore about 50% of learners in a study in India agreed that sharing injections is one of the modes of transmitting HIV (Shinde et al., 2016). These are good results which can indicate that the youth is well informed about the dangers of sharing or using unsterilized needles.

Njogu (2011) indicated that 57% of male learners in Kenya used condoms in their last sexual experience, as opposed to 20% in females. This study shows that all learners indicated that they have not engaged in unsafe sex, in the last 12 months or in their last sexual encounters. The learners might have answered the question dishonestly fearing stigmatization or shame through their answers could not be traced to them. Another study indicated that 68% of 15-24 year old males with multiple sexual partners reported condom use at last sex compared to 47% of females same age (HSRC, 2018). Demographic and Health surveys conducted between 2010 and 2015 show that less than 60% of young women with multiple partners do not use condoms with their partners (UNAIDS, 2016). All respondents in the study agreed that substance abuse can contribute to unsafe sexual practices in youth. In a study conducted by Njogu (2011) in Kenya it was found that 67% of the males and 33% of the females had used alcohol during their last sex encounter without condoms. Substance abuse and engaging in sexual practices among the youth is one of the risk factors that expose the youth to sexually transmitted infections as alcohol alters their decision making abilities and thinking capabilities.

5.5 Limitations of the study

Some of the learners were disruptive and often laughed at the questions and some wanted to avoid answering the questions. The learners responding to the questions were asked to answer the questions honestly and not copy from their peers because none of the questionnaires would be to linked them. Thus the researcher believes that some learners still answered specific questions dishonestly in order to make themselves look good and to give positive self-descriptions. This is social desirability which Caputo (2017), refers to as the individual's tendency to respond in a more socially desirable manner that reflects positive, socially desirable attitudes and ethical behaviors in certain situations.

5.6 Recommendations

Recommendations of the current study are based on the study findings.

Recommendations for the schools.

- Comprehensive sexual health education that includes HIV/TB co-infection should be provided in secondary schools to emphasize the dangers of one's actions regarding HIV infection, the possibility of getting active TB when HIV positive and to teach the youth about sexual health. This can either be done through the Life Orientation classes or health talks at school.
- Besides HIV-related information, health care givers should hold awareness campaigns at schools that focus mainly on co-infection of HIV and TB. Their information can include recent statistics on mortality rates, to alert the learners about the dangers and seriousness of the two diseases.
- Schools can also host fun days with HIV/TB co-infection related topics as their themes.
- Sexual health education should be provided to learners and be updated and medically accurate, to help reduce the risk of contracting HIV, TB and other sexually transmitted infections.
- Youth Forums should be established, to assist the youth to speak openly with their peers and educate each other about sexual issues, HIV/TB co-infection, actions/dangers that can expose one to contract HIV and other sexually-transmitted infections.
- The teachers should also encourage debates on co-infection of HIV and TB. This will help the learners to engage and exchange information on both diseases.

- The schools should make it a culture to celebrate World TB day every year on March 24th and World AIDS day on December 1st and incorporate the other disease to make emphasis of how deadly the two diseases are.

Recommendations for the Health care service providers

- Health care providers should also establish and dedicate more health education days with the school, to educate learners about HIV and TB co-infection.
- Health care workers in the community TB center can also be invited or visit schools to give talks about services they offer at the center to TB patients and inform the learners about the center and where it is located in the community.
- As health care providers cannot always be available, they could also establish and work with peer health forums of each grade in schools, to help distribute HIV and TB co-infection related information to all learners.
- Health promotion workers are also needed in the awareness of HIV and TB co-infection.

Recommendations for future research

- More HIV and TB co-infection studies need to be conducted, to find out if the youth are gaining information related to HIV and TB co-infection and raise awareness.

5.7 Conclusion

Generally the study indicated that the youth in Meadowlands were knowledgeable about HIV and TB as individual diseases. However, knowledge gaps were found on HIV and TB as a combined infection. As indicated in the study findings, half of the students did not know that an HIV positive person can also develop active TB. Most of the learners 53% also did not know of the TB centers are available in their community. Health education on co-infection of HIV and TB and TB as a single disease are needed and necessary, to help combat the lack of knowledge, the culture of silence, ignorance and misconceptions amongst the youth.

Finally, the responsibility of imparting updated sexual and reproductive health information and HIV/TB co-infection information that would promote change to the youth of Meadowlands lies firmly in the hands of teachers, parents, care workers, nurses, social workers and all primary health care workers.

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Appendix A: Questionnaire

Topic: Perceptions of youth regarding the consequences of unsafe lifestyles regarding the transmission of HIV and TB in Meadowlands Township, Gauteng Province.

Instructions : Answer all questions

: Read and understand questions before you answer.

Key **:** Mark with an (x) where you have been provided with a space for your answer.

SECTION A: IDENTIFICATION AND CONFIRMATION OF DETAILS

1. Gender: Male ☐

Female ☐

2. Age **: …….**

3. Location **: …….**

Section B: Assessment of youth's knowledge

4. Are you aware of the recent HIV and TB statistics in your community?

Yes ☐

No ☐

5. Have you attended any HIV or TB campaign or talk in your community or school?

Yes ☐

No ☐

6. Do you think you are well informed and have adequate knowledge about HIV and TB (risks, modes of transmission, prevention and remedy)?

Yes ☐

No ☐

7. Do you know of the HIV and TB services offered in your community health facilities?

Yes ☐

No ☐

8. Have you heard of antiretroviral therapy? (What it is, what it does and how it works?)

Yes ☐

No ☐

9. Can a person get infected with HIV from having multiple sexual partners without using a condom?

Yes ☐

No ☐

10. Do you know that HIV-infected people can develop active TB, as well?

Yes ☐

No ☐

11. Can you get infected with TB from unprotected sex?

Yes ☐

No ☐

12. Are there centres in your community that deal specifically with TB infections and patients?

Yes ☐

No ☐

13. Do you think the youth in your community know and access sexual health services offered in their community?

☐

Yes

No ☐

Section B: Description of youth's Attitudes

14. People infected with HIV and TB can live longer without medical assistance.

Strongly Agree	Agree	Neutral	Disagree	Strongly disagree

15. You would share your home with an HIV positive person.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

16. ARVs do help HIV infected people

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

17. Females are more vulnerable to contracting HIV than males.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

18. Would you go for voluntary HIV testing?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

19. Should schools be provided with free government condoms?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

20. TB can be easily transmitted compared to HIV.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

21. TB treatment works effectively on its patients.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

22. The youth in your community are well informed about HIV and TB.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

23. HIV positive people must be allowed to socialise with HIV-negative people.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Section C: Exploring youth's Practices

24. Can a person get HIV from sharing razors or needles that were not disinfected?

Yes ☐

No ☐

25.

No ☐

26. Have you engaged in unsafe sex in the last 12 months?

Yes ☐

No ☐

27. Can using condoms with multiple sexual partners keep you safe from contracting HIV?

Yes ☐

No ☐

28. Do you like to use condoms when engaging in sex?

Yes ☐

No ☐

29. Can substance abuse contribute to unsafe sexual practices in youth?

Yes ☐

No ☐

30. Can engaging in intergenerational relationships expose young girls to HIV?

Yes ☐

No ☐

31. Can fear and stigma be held responsible for youth not accessing sexual health services?

Yes ☐

No ☐

32. Can Peer pressure play a role in youth exposing themselves to HIV and TB transmissions?

Yes ☐

No ☐

33. Do you think health education on sexual practices can help reduce the number of HIV infections?

Yes ☐

No ☐

Appendix B

Information letter

Title of the Research Study : Perceptions of youth regarding consequences of unsafe Lifestyles regarding transmissions of HIV and TB in Meadowlands, Gauteng Province.

Principal Investigator/s/ researcher : Shika Ciccioline Ntswaki. (BSW (Hons)

Co-Investigator/s/supervisor/s : Dr J.T Mabunda

: DR M. Mohlala

Brief Introduction and Purpose of the Study: Human Immunodeficiency Virus and Tuberculosis are the most investigated and analysed topics worldwide. Although HIV and TB are two different infections, when a person is infected with both, each disease accelerates the progress of the other, resulting in more health complications and death. In 2015, about 400 000 people who had both HIV and TB were estimated to have died, in addition to 1.4 million people who died from TB alone and 800 000 people died from HIV alone.

The purpose of this study is to assess the knowledge of the youth in Meadowlands on HIV and TB co-infection transmission, to describe the practices adopted by the youth in Meadowlands contributing towards HIV and TB co- infection and to explore the attitudes of youth in Meadowlands towards HIV and TB co-infection transmissions.

Outline of the Procedures: Respondents to be included in the study are male and female matric learners. Those who wish to be part of the study will be assembled in their school hall where they will be given information letters and consent forms to sign before commencing data collection. Data will be collected over three days for an hour in three different schools around Meadowlands. Respondents will be given questionnaires individually which is divided into four sections to complete. The questionnaire has close ended questions which will not be translated to them. Once the questionnaires are completed, they will be returned to the researcher for analysis.

Risks or Discomforts to the Participants: There are no foreseeable risks or injuries for the respondents.

Benefits : The participants will get the opportunity to be part of a study that will later alert them of behavioural risks or unsafe lifestyles that they engage, that might expose them to HIV and TB infections. The researcher will be able to explore and report on lifestyles and attitudes that expose the youth in Meadowlands to HIV and TB infections.

Reason/s why the Participant May Be Withdrawn from the Study: Respondents who do not comply with any of the rules of the study after they have been explained to them will be withdrawn from the study with no consequences.

Remuneration : The respondents will not receive any remuneration for being in the study.

Costs of the Study : The respondents will not be expected to cover any costs arising from the study.

Confidentiality : Respondents will not be identifiable or individually linked to the report. Their personal information or health records will not be required and should remain confidential to them. The respondents will not be required to fill in their names or identity numbers on the questionnaires. Their identities will not be disclosed to anyone and no information they provide will be easily linked to them. The respondents will be ensured that their information will not be disclosed anywhere else and for any other purposes other than for the study.

Research-related Injury : Should there be related research enquiry or adverse reaction, there will be compensation.

Persons to Contact in the Event of Any Problems or Queries:

Please contact the researcher on 0765920974, my supervisor 015 962 8000 or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

Appendix C

Consent Form

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Shika C.N, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number:

- I have also received, read and understood the above written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

…… …… …… ……

I Shika C.N here with confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher Date Signature

…… …… ……

Full Name of Witness (If applicable) Date Signature

…… …… ……

Full Name of Legal Guardian (If applicable) Date Signature

…… …… ……

Appendix D

Ethical Clearance Certificate

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms SC Ntswaki

Student No:
11610149

PROJECT TITLE: **Perceptions of youth regarding consequences of unsafe lifestyles regarding transmission of HIV and TB in Meadowlands, Gauteng Province.**

PROJECT NO: **SHS/18/PH/21/0607**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr JT Mabunda	University of Venda	Supervisor
Ms M Mohlala	University of Venda	Co - Supervisor
Ms SC Ntswaki	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: July 2018
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2018 -07- 31
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 **FAX** (015) 962 9080
"A quality driven financially sustainable, rural based Comprehensive University"

Appendix E

Requisition letter to Department of Education

541b Kopopa Street

Meadowlands Zone 7

Soweto

1852

Head of Department

111 Commissioner Street

Johannesburg

2001

ATT: Head of Department

Dear Sir/Madam

Letter of request for permission to conduct a research at high schools in Meadowlands, Soweto

The above matter has reference.

I am currently a registered student studying towards a Master's Degree in Public Health at the University of Venda. As part of my degree, I am conducting research under the supervision of Dr. J.T Mabunda and Dr. M Mohlala. I would like to conduct the study with matric learners from three high schools located in Meadowlands. The topic of my research is: **Perceptions of youth regarding the consequences of unsafe lifestyles regarding the transmission of HIV and TB in Meadowlands Township, Gauteng Province**. The main purpose of the study is to assess the youth's knowledge concerning the two diseases, their attitudes towards them and lifestyles that expose them to contracting HIV and TB. The following are the objectives of my study;

To assess the youth's level of knowledge on HIV and TB transmission.

To describe the practices adopted by the youth contributing towards HIV and TB infections.

To explore the attitudes of the youth towards HIV and TB transmission.

Kindly note that the study will not have any financial implications for the Department, and ethical clearance has been issued by the University of Venda Ethics Committee to the researcher to conduct the study. The ethical clearance is attached.

I hope my request will be approved.

……

Ms. Shika C.N

Student no: 11610149

0765920974

Appendix F

Approval letter

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	11 September 2018
Validity of Research Approval:	05 February 2018 – 28 September 2018 2018/299
Name of Researcher:	Shika CN
Address of Researcher:	451b Kopopa street
	Meadowlands Zone 7
	Soweto, 1852
Telephone Number:	076 592 0974
Email address:	Cicciolines@gmail.com
Research Topic:	Perception of youth regarding consequences of unsafe lifestyles regarding the Transmission of HIV and TB in Meadowlands, Gauteng Province.
Type of qualification	Master of Public Health
Number and type of schools:	Three Secondary Schools
District/s/HO	Johannesburg West.

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

11/09/2018

1

Making education a societal priority

Office of the Director: Education Research and Knowledge Management
7th Floor, 17 Simmonds Street, Johannesburg, 2001
Tel: (011) 355 0488
Email: Faith.Tshabalala@gauteng.gov.za
Website: www.education.gpg.gov.za

Appendix G

Proof reading letter

SCHOOL OF HUMAN AND SOCIAL SCIENCES

12 December 2018

School of Health Sciences
University of Venda
Thohoyandou
0950

Sir/madam

This serves to certify that I have proof-read Ms C.N. Shika's mini-dissertation titled, "Perceptions of Youth Regarding the Consequences of Unsafe Lifestyles Regarding Transmission of HIV and TB in Meadowlands, Gauteng Province ".

The proof-reading entailed editing some parts from it; for example, to avoid wordiness, redundancy; sub-dividing sentences, and so on, to make the document more understandable. However, I have not tampered with the content of the document, except where this constituted repetition or made the document confusing.

The mini-dissertation is presently ready for examination.

Sincerely

V.T. Bvuma
083 423 9227

University of Venda

UNIVERSITY OF VENDA
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8172 FAX (015) 962 8416
E-mail: Vincent.Bvuma@univen.ac.za
"A quality driven, financial sustainable, rural-based comprehensive University"

Appendix H

UHDC Approval letter

UNIVERSITY OF VENDA

OFFICE OF THE DEPUTY VICE-CHANCELLOR: ACADEMIC

TO : MR/MS C.N SHIKA

SCHOOL OF HEALTH SCIENCES

FROM: SENIOR PROFESSOR L.B KHOZA

DEPUTY VICE-CHANCELLOR: ACADEMIC

DATE : 22 MARCH 2018

DECISIONS TAKEN BY UHDC OF 22ND MARCH 2018

Application for approval of Master's research proposal in Health Sciences: **C.N Shika (11610149)**

Topic: "Perceptions of youth regarding consequences of unsafe lifestyles regarding transmission of HIV and TB in Meadowlands, Gauteng Province."

Supervisor	UNIVEN	Dr. J.T Mabunda
Co-supervisor	UNIVEN	Ms. M. Mohlala

UHDC approved Masters Proposal

Senior Professor L.B. Khoza
ACTING DEPUTY VICE-CHANCELLOR: ACADEMIC