KNOWLEDGE, ATTITUDE, AND PRACTICES OF STUDENTS REGARDING ACCESS TO ANTIRETROVIRAL THERAPY IN A UNIVERSITY OF TECHNOLOGY IN KWAZULU-NATAL

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Declaration

This is to certify that the work is entirely my own and not of any other person unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

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Dedication

I dedicate this dissertation to my family eNkandla and to everyone who supported me throughout this journey my supervisor Prof. Ngxongo, Dr Zikalala, Dr Mhlongo, DUT campus clinic staff, and all DUT undergraduate students who participated in this study. Last but not least, I give all the glory to God for always giving me a second chance in this life.

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Abstract

Background: The growing need for antiretroviral drugs across the country is a critical issue for universities and their wider communities. Yet, little is known about student knowledge, attitude, and practices regarding access to antiretroviral therapy in university environments and the steps that universities take to better support students' well-being. Therefore, this study aimed to investigate the knowledge, attitudes, and practices of students regarding access to antiretroviral therapy at the University of Technology (UoT) in KwaZulu-Natal.

Method: A qualitative exploratory descriptive design was employed guided by the theory of reasoned action by Martin Fishbein and Icek Ajzen (1975) as a framework for the study. Ethics approval (IREC 284/22) and gatekeeper permission were granted by the UoT concerned. Participants who met the inclusion criteria were purposively selected based on their availability until the data saturation was reached. Data was collected between March and May 2023 using online and face-to-face semi-structured interviews, with 20 undergraduate students from one campus located in the uMsunduzi local municipality. Rigor for the study was ensured through the observant of the four principles of trustworthiness whch are of trustworthiness which are credibility, dependability, confirmability, and transferability. Data were thematic ally analysed guided by the six steps of qualitative data analysis as described by-Braun and Clarke 2006)

Results: The study found that practices performed or missed by the UoT or campus clinic and/or a student affected student access to antiretroviral therapy (ART). The five main themes that emerged from data analysis included: Current practices regarding accessing ART, Knowledge regarding access to ART in the UoT, Access points for ART, Attitude and perception, and Factors that influence access to ART. While all participants agreed that they had been exposed to HIV/AIDs education including ART, the extent of exposure varied from student to student. The discussion around the ART access points revealed that students were aware of those points, though there were challenges encountered by other students when utilising the access points.

Conclusion: The overall result confirmed that students from the UoT under study have positive attitudes regarding HIV/AIDS in general and access to ART. Moreover, participants recommended access to ART on all HEI campus clinics, including the campus where this study took place because the campus clinic facilities are conveniently located on campus, safe, provide greater confidentiality and privacy, and limited disruption to academic activities

Key words: Access to ART, Antiretroviral therapy, Higher Education Institutions, Students, and People living with HIV.

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Glossary of Terms

AIDS: Acquired immunodeficiency syndrome. A cluster of medical conditions, often referred to as opportunistic infections acquired due to the presence of HIV in one's body system.

ART: Antiretroviral therapy. The range of medications prescribed to minimise the effects of HIV infection by keeping the level of the virus in the body at as low a level as possible. In the current studty PrEP, PEP are included as part of ART.

Health services: All infrastructures and settings involved in the provision of general and specialised health care to patients or support services, such as public and private hospitals, and clinics.

Healthcare provider: is an individual health professional whose activities involve direct contact with a patient, licensed to provide health care diagnosis and treatment services including medication, surgery, and medical devices.

HIV: Human immunodeficiency virus. A virus that compromises the body's immune system and eventually leads to AIDS.

PEP for HIV: Post-exposure prophylaxis. A drug used to prevent HIV after potentially being exposed to the virus.

PrEP for HIV: Pre-exposure prophylaxis. A drug used to prevent contracting of HIV.

Seroconversion: A process when antibodies develop to a particular antigen. For example: When people develop antibodies to HIV, the "seroconversion" goes from antibody-negative to antibody-positive. It may take from as little as one week to several months or more after being infected with HIV for antibodies to the virus to develop. After antibodies to HIV are present in the blood, a person should test positive on antibody tests.

Student: According to the Oxford Dictionary (n.d.) a student is a person who is studying at a university or other place of higher education. /INST ; VMMC p16

List of Acronyms and Abbreviations

Acronym	Full term
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
NRTI/NNRTI CDC	Centre for Disease Control and Prevention
FET	Further Education and Training college
DHET	Department of Higher Education and Training
DoH	Department of Health
DUT	Durban University of Technology
INSTIs	Integrase Strand Transfer inhibitors
HEAIDS	Higher Education and Training HIV/AIDS programme
HEI	Higher Education Institutions
HIV	Human Immunodeficiency Virus
KZN	KwaZulu-Natal
NNRTI	Non- Nucleoside Reverse Transcriptase Inhibitors
NRTI	Nucleoside/Nucleotide Reverse Transcriptase Inhibitors
PEP	Post-Exposure Prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PLH	People Living with HIV
PrEP	Pre-Exposure Prophylaxis
TVET	Technical and Vocational Education and Training
UNAIDS	United Nations Programme on HIV and AIDS
UoT	University of Technolog
USAID	United States Agency for International Development
UTT	Universal Test and Treat
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization

Chapter Outline

Chapter No	Title	Contents
Chapter 1	Overview of the study	Presents the introduction and background, aim, objectives, research questions, problem statement, and significance of the study.
Chapter 2	Literature review	Presents a literature review covering: strategies used to gather literature, HIV burden among youth in South Africa, HIV/AIDS in higher education institutions, and the study's theoretical framework.
Chapter 3	Research Methodology	Presents the methodology which includes research design, paradigm, recruitment process, sampling process, data collection process, data analysis, data management, data storage, ethical consideration, and research rigour.
Chapter 4	Presentation of findings	Presents the findings of the study, highlighting themes and the sub-themes that emerged from the interviews,
Chapter 5	Discussion of findings	Presents a discussion of the study findings in relation to peer and non-peer-reviewed literature.
Chapter 6	Summary of findings, conclusions, limitations, and recommendations	Presents a summary of findings on data analysis and interpretation including conclusions, limitations, and recommendations

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The human immunodeficiency virus (HIV) has been a worldwide epidemic since the 1980s. The Joint United Nations Programme on HIV and AIDS (UNAIDS) proposed a global goal: end the AIDS epidemic as a public health threat by 2030. However, 38.4 million people were living with HIV and only 28.7 of these people were accessing antiretroviral therapy (ART) by the end of 2021 (UNAIDS 2022: 126). In South Africa, the reported number of HIV infections was estimated to be 8.5 million by the end of 2022 (Statistics South Africa 2022: 6). There is a long way to go before HIV/AIDS is under control by 2030.

According to Statistics South Africa (2022: 3), the prevalence rate of HIV is 13.9% among the South African population, with the highest proportion of the population living with HIV being adults aged 15–49 years. The country also has the largest public-sector antiretroviral therapy (ART) programme in the world, with over 5.4 million people living with HIV (PLH) on this programme by the end of 2022 (Statistics South Africa 2022: 24). Nonetheless, South Africa has the largest HIV pandemic in the world, with more than 3 million of PLH still in need of ART. The UNAIDS (2020: 4) attests that more than 30% of known HIV-infected individuals globally aged between 15-49 years are not accessing ART.

Sutini, Cahyati, and Rahayu (2020: 187) state that opening up access to ART is a key global effort to end the HIV/AIDS epidemic as a public health threat. In 2018 the world embarked on a Fast-Track strategy to end the AIDS epidemic by 2030 (UNAIDS 2020: 4). The Fast-Track strategy was announced in 2014, aiming to end AIDS by 2030 by achieving 95% diagnosis among all people infected with HIV, 95% on ART among those diagnosed, and 95% viral suppression among those treated (UNAIDS 2020: 4). According to Pillay and Johnson (2021) reaching the 2030 UNAIDS goals will be challenging considering the high HIV prevalence in countries like South Africa, where approximately half of the PLH are not yet accessing ART.

In 2010, South Africa gradually scaled up HIV prevention and treatment initiatives. These initiatives included voluntary medical male circumcision (VMMC), access to HIV testing services with links to care, prevention of mother-to-child transmission of HIV, HIV pre-exposure and post-exposure prophylaxis, ART, and ART-as-prevention strategy to lower HIV transmission potential, improve HIV-related morbidity and mortality, and increase life expectancy (National Department of Health 2019 [DoH]: 13). Furthermore, to simplify treatment, boost adherence, and achieve and maintain viral suppression strategies such as ART regimens, mobile clinics, nurse-initiated administration of ART, and the use of a fixed-dose medication combination have been initiated (De Oliveira et al. 2017; and Kharsany et al. 2019).

In September 2016, South Africa began implementing the universal-test-and-treat (UTT) policy in hopes of attaining the UNAIDS target goal (Statistics South Africa 2022). According to the World Health Organization (WHO) (2019), UTT means that all children, adolescents, and adults living with HIV qualify for ART regardless of immune suppression or clinical stage. Studies have shown that early and widespread ART with sustained adherence can reduce the likelihood of HIV transmission and improve clinical outcomes of a PLH (Karim 2019; Cohen, Gamble, and McCauley 2020; WHO 2020a; Centres for Disease Control and Prevention [CDC] 2020). Karim (2019: 11) further states that achieving the estimated real-world reductions in new HIV infections by bringing 'universal' access to ART has been even more complex than was anticipated.

Public universities in South Africa have also joined the fight against the HIV/AIDS pandemic, with some public universities in the country providing ART to students within their campus health clinics (Macupe 2019: 4). This initiative is seen as a game changer, especially for young people. According to the National Department of Health (DoH) (2019: 13), there is a low number of people, especially young people, who can access ART and stay on treatment, including university students. The Department of Higher Education and Training (DHET) (2019: 23) attests that the majority of undergraduate university students in South Africa are aged between 17-24 years.

However, all these initiatives around the world have made little impact on the prevalence of HIV, the cycle of HIV transmission in young people, and access to ART

(UNAIDS 2019: 14). The objective of this study was to explore the knowledge, attitude, and practices of students regarding access to ART in a UoT in KwaZulu-Natal (KZN).

1.1.1 ART IN THE MANAGEMENT OF HIV AND AIDS

The WHO (2020a: 1) defines ART as a combination of drugs used to suppress HIV replication in an infected individual. The Centres for Disease Control and Prevention (CDC) (2020: 1) states that ART is a treatment with drugs that inhibit the ability of the HIV or other types of retroviruses to multiply in the body. Fletcher (2018: 24) adds that ART refers to any HIV treatment that uses a combination of two or more drugs.

The initiation into ART is a key step in achieving viral suppression, which is critical to preventing transmission of the virus and improving the immune system of an individual living with HIV (United States, Department of Health and Human Services 2018). According to CDC (2020: 1), ART can reduce viral load to such an extent that it is undetectable. This means that an infected individual has a low risk of transmitting the virus to another person, even during unprotected penetration sexual intercourse.

In 1987, the U.S. Food and Drug Administration approved the first-ever antiretroviral drugs to be used as ART (Archary 2020: 13). Today, over 30 antiretroviral drugs for the treatment of HIV have been approved by U. S. Food and Drug Administration, and these drugs are categorised into five major classes: fusion inhibitors, nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs), non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs), Integrase Strand Transfer inhibitors (INSTIs) and protease inhibitors (Khan, Gupta, and Singh 2020: 108). To facilitate the rollout of ART, WHO implemented UTT as a strategy for HIV elimination in place of the previous “differed treatment policy”, known as CD4-based and WHO clinical staging approaches (UNAIDS 2018: 11).

In addition, there is strong evidence regarding ART as a form of prevention for an HIV-negative individual to become infected with HIV, whereby ART is given either as preexposure prophylaxis (PrEP) or as post-exposure prophylaxis (PEP) (CDC 2020; Temesgen *et al.* 2020). The CDC (2018), attest to that PrEP and PEP are both preventive measures used to reduce the risk of HIV transmission.

PEP is defined as a short course of two or more ART drugs combined (tenofovir, and emtricitabine, plus a third drug, either raltegravir or dolutegravir) taken within 72 hours after a diagnosed HIV-negative individual has had possible exposure to HIV (CDC 2020). Studies have shown that PEP is highly effective in preventing HIV if it is used correctly as prescribed (Karletsos *et al*. 2020: 421). According to WHO (2021), if these drugs are within 72 hours and taken correctly for at least 28 days after exposure, this can prevent an individual from being infected by HIV/AIDS from that incident. The WHO (2020b: 6) also emphasises the importance of HIV testing at day 28 of adherence to PEP to rule out HIV infection. According to DoH (2020: 15) if an individual is confirmed HIV-positive after 28 days of PEP he/she can be initiated into ART based on his/her consent.

Unlike PEP, which is taken after a potential exposure to HIV, the first dose of PrEP is taken before a potential HIV exposure. Furthermore, PrEP combines two drugs in one pill and one of these drugs must be a nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs) commonly Tenofovir, while the second drug must be a non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI) commonly emtricitabine. PrEP is available at any retail pharmacy in the country (CDC 2018: para, 2 line 4). It is recommended that PrEP be made easily accessible in HEI as part of comprehensive sexual health services (Higher Health 2017: para. 5 line 3).

After the early years of denial, South Africa has made great progress in rolling out ART to PLH (Onoya *et al*. 2021: 114). According to Merson, and Inrig (2018), the global consciousness about the dramatic uprising of AIDS-related mortality in Africa and the need for accessible and affordable ART was raised at the XVI International AIDS Conference in the year 2000. In that same year, 2000, ART was officially initiated in South Africa, but only in selected healthcare sectors (Macupe 2019: 4). In 2004, the ART programme was expanded to many public health centres in South Africa and this programme has grown steadily (DoH 2019: 11). This has been a journey from the days when HIV-positive patients took five pills a day up until today when they only need to take one pill a day (Portilla-Tamarit, Reus, Fuster Ruiz-de-Apodac, and Portilla 2021: 742). Today, South Africa has the biggest life-saving ART programme in the world, with more than four million people on ART (UNAIDS 2020: 18).

In 2014 South Africa also became the first country in sub-Saharan Africa to fully approve the pre-exposure prophylaxis (PrEP) programme (Mogoatlhe 2019). Thereafter, the programme was expanded in 2017 to college and university students at onsite or campus health clinics (Pillay and Johnson 2021: 515). Nevertheless, South Africa remains the epicentre of the HIV/AIDS pandemic, with 70% of known HIV-positive individuals being on ART in 2018/19 (DoH 2019: 3). Pillay and Johnson (2021: 509) attest that South Africa did not meet the 2020 UNAIDS 90-90-90 targets that were set in 2014 Joint UNAIDS. In 2014 the UNAIDS proposed the new goal of achieving the expanded 95-95-95 targets by 2030, which South Africa is now working towards achieving.

1.2 PROBLEM STATEMENT

According to Sutini, Cahyati, and Rahayu (2020: 87), access to ART is one of the key global strategies to end HIV/AIDS as a public health threat and/or epidemic by the year 2030. Thus, some public universities in South Africa have taken steps to roll-out ART to students and staff living with HIV via on-campus clinics (Macupe 2019: 4); and to conduct more research that can assist in curbing the epidemic of HIV/AIDS in South Africa (Kruger *et al.* 2020: 158).

The high incidence of HIV-infected students in universities is supported by Gemeda, Gandile, and Bikamo (2017 cited in Nkosi 2019) who attest that university students are vulnerable to HIV infection because of their age, ambition, and desire to experience new events. Furthermore, Nkosi (2019: 21) states that universities are sexualised spaces that contribute to factors leading to the pressure of sexual activities and the resultant high incidence of sexually transmitted infections including HIV/AIDS. As stated by Sutini, Cahyati, and Rahayu (2020: 187), access to ART is a key global effort to end the HIV/AIDS epidemic as a public health threat. Thus, it is important to have access to ART in all universities either through the provision of ART services on campus or having a formalised referral system for students requiring initiation on ART.

Some studies have been undertaken among sub-populations at higher risk of having or contracting HIV who reside within HIV hyper-endemic regions, revealing some concerns regarding attitudes and perceptions of university students towards HIV and AIDs. A study conducted at a South African university found that students have

misconceptions and insufficient understanding of HIV and its treatment and, as a result, they continue to engage in risky sexual behaviours (Murwira, Khoza, Mabunda, Maputle, Mpeta, and Nunu 2021). Another study by (Li, Chu, Zhu, Li, Ge, He, Ni, Musa, Li, and Wei 2020) which was a cross-sectional survey of college students in Nanjing, China, found that students are highly exposed to risky sexual behaviours and have little understanding of HIV/AIDS, so they easily transmit the virus to partners.

However, none of these studies explored students' knowledge, attitudes, and practices regarding ART. There is research evidence that ART reduces morbidity and mortality associated with HIV and viral transmission when taken consistently (Altice, Evuarherhe, Shina, Carter, and Beaubrun 2019; and Li, Purcell, Sansom, Hayes, and Hall 2019). Therefore, accessibility of ART via on-campus clinics can lower the risk of students contracting and/or transmitting the virus while increasing their health (Macupe 2019: 4). Thus, in the current study the researcher used a population-based sample of a UoT in KZN, to explore knowledge, attitude, and practices regarding access to ART.

The researcher who at the time of the study was a clinical practitioner in a campus health clinic in one of the UoTs in KZN and has witnessed that although campus clinics in this UoT do provided HIV counselling and testing, and support to known HIV-positive students, they did not provide ART services. They neither provided services (initiation and reissue) nor hada formalised referral system for students requiring initiation on ART, or formalised guidelines for tracking students who have been referred to other clinics for ART initiation. The researcher witnessed an increasing number of HIV-positive students not initiated into ART. For these student to access ART, they would need to have knowledge regarding where else and how to access ART from alternative places. Thus, the stance for undertating the study to explore knowledge, attitudes, and practices of students regarding access to antiretroviral therapy in this particular UoT

1.3 STUDY AIM

The study aimed to investigate the knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a UoT in KZN.

1.4 STUDY OBJECTIVES

The objectives of the study were to:

- Determine the current practices regarding access to ART within a UoT in KZN.
- Explore and describe students' knowledge regarding access to ART within a UoT in KZN.
- Determine students' attitudes regarding access to ART within a UoT in KZN.
- Describe the factors that influence access to ART in a UoT in KZN.

1.5 SIGNIFICANCE OF THE STUDY

The significance of a study is the potential of a study to discover new information about a phenomenon and contribute to scientific knowledge in a meaningful way (Creswell *et al.* 2020: 54). This study explored students' knowledge, attitudes, and practices regarding access to ART within a UoT, KZN. Therefore, these findings may help to increase knowledge in health science by providing evidence-based information. The findings can also be used by policy-makers as a reference when they compile evidence for policy recommendations to empower healthcare providers to ensure cost-effective care. In addition, implementation of these findings may ensure that the community (students and staff) within the UoT have easier access to ART.

1.6 RESEARCH METHODOLOGY

This qualitative study was conducted at a UoT in Msunduzi municipality, KZN. Exploratory descriptive design was used, guided by the theory of reasoned action by Fishbein and Icek Ajzen (1975) as a framework for the study. Data was collected through one-on-one semi-structured interviews via Microsoft Teams and/or face-to-face. Collected data was transcribed and thematically analysed based on the contextual approach of qualitative data analysis following the six steps for qualitative data analysis proposed by Braun and Clarke (2006: 87)

1.7 CHAPTER SUMMARY

This chapter presented a detailed overview of the chapter by providing an introduction and background, problem statement, aims, objectives, and significance of the study.

Chapter 2 reviews the literature about the phenomenon under study and identifies gaps. The theoretical framework guiding the study is also presented.

CHAPTER 2: LITERATURE REVIEW

2.1 CHAPTER INTRODUCTION

This chapter reviews the existing international and local literature related to the topic under study. The review identifies the gaps in the existing literature regarding access to first-line ART in public health care sectors and higher education institutions (HEI) both globally and locally. Lastly, it outlines the theoretical framework that has guided the study.

2.2 STRATEGIES USED TO GATHER LITERATURE

As a first step in the literature review, the researcher conducted two literature searches, a broad search in the Google Scholar database using medical subject headings, and a narrow search using keywords related to the current research topic in both Google Scholar and the DUT library database. Search results were limited by date (from 2018) range and English language. The researcher limited the literature search to studies that were published in peer-reviewed journals from the aforementioned date; and opinion pieces/or newsletters.

The researcher developed a list of concepts (key words) to use as search terms to screen articles' eligibility for inclusion in the review. The concept list included statements and terms that relate to the accessibility of ART within the UoT, for example: antiretroviral therapy, access to ART, and universities that provide students with ART. The researcher initially read the title and abstract of each search item to determine the relevance to the study and if relevant he then read the full item. Firstly, the researcher searched for articles that address the HIV burden in South Africa, the prevalence of HIV in institutions of higher learning/universities; and students' knowledge, attitudes, and perceptions regarding ART. Following these, the researcher reviewed studies that were about expanding access to ART, HIV prevention programmes, and barriers to ART accessibility.

2.3 SUMMARY OF FINDINGS ON LITERATURE REVIEW

There was a paucity of literature on the prevalence of HIV in HEIs compared to an abundance of literature on the HIV burden and management thereof worldwide including South Africa. Nevertheless, there was enough literature to support the evidence of high prevalence in HEIs. A summary of findings in this regard is presented in section 2.4 describing the global, national, and provincial context regarding the HIV burden among youth.

Moreover, little was found in the literature regarding the knowledge, attitude, and perception of students regarding ART. The retrieved literature portrays the limited knowledge and negative perceptions of students regarding ART. Nevertheless, a positive attitude of students towards ART was discovered in the literature. The summary of this literature is presented in section 2.5 as it alludes to barriers to the accessibility of ART. Section 2.6 presents a summary of the literature on how access to ART has been expanding, and section 2.7 presents the theoretical framework that guided this study.

2.4 THE HIV BURDEN AMONG YOUTH

There is no universal agreement on the term “youth age group” definition. However, Statistics South Africa defines “youth” for statistical purposes as anyone between the ages of 15 and 34 years (Statistics South Africa 2020), which this study follows.

In 2020, South Africa recorded that more than 85% of students enrolled in public HEIs were between the ages of 17 and 34 years (DHET 2021: 56). The U.S. Department of Education also reported that 75% of undergraduate students in their universities age between 17 and 24 years old (Reyes 2023). Therefore, considering that the youth population is at greatest risk for HIV infection, and HEIs are dominated by the youth population, an HEI is a suitable place to investigate the issue of access to ART amongst the youth population living with HIV.

2.4.1 The global context in HIV burden among youth

Globally, 38.4 million people were living with HIV at the end of 2021, although the burden of the epidemic varies considerably between countries and regions (United Nations. n.d). UNAIDS (2022: 126) states that Eastern Europe and Central Asia, Latin

America, the Middle East, and North Africa have all seen increases in annual HIV infections over the past years. The Middle East and North Africa were the regions with the lowest HIV burden, lowest HIV treatment, and lowest proportion of PLH who are virally suppressed in the world in 2021.

Eastern Europe and Central Asia reported a 48% increase in new HIV infections between 2010 and 2021. During that period the youth population aged between 15 and 24 was 12% of the overall percentage (UNAIDS 2021: 78). Furthermore, between 2019 and 2022 the new HIV infections in Asia and the Pacific among youth increased by 27% (UNAIDS 2022: 125). Sadly, in these regions around 49% of all PLH are not on treatment (UNAIDS 2022: 125). According to the CDC (2018), stigma and discrimination have been named as the main obstacles to the expansion of HIV prevention and treatment services in these two regions.

In the United States of America, the rate of HIV transmission is of particular concern among minority youth, while the overall incidence of HIV infection has been stable or decreasing in most populations (United States, Department of Health and Human Services 2018). In 2017, 21% of new HIV infection diagnoses were among individuals between the ages of 13 and 24 years old (Allan-Blitz, Mena, and Mayer 2021). These authors further state that this population was less likely to be aware of their HIV infection status, with around 40% of those infected with HIV aware of the infection compared to the national estimate of over 85% of older individuals.

Although the United States of America has made important gains in expanding access to HIV treatment, and efforts to ensure timely diagnosis, but the enrolment in care remain insufficient, treatment adherence continues to be a challenge, and ART stock-outs have worsened the treatment expected outcomes (UNAIDS 2022). In 2021, over 31% of PLH in America were still not receiving ART, and the coverage of the preferred dolutegravir-based regimens for first-line ART was inconsistent, ranging from 0% in Colombia to 100% in Venezuela (UNAIDS 2022: 126). Being asymptomatic, substance use, fear or stigma, insufficient youth-friendly services, and lack of social support, have been named as factors associated with reduced ART uptake among youth linked to HIV care in America (Allan-Blitz, Mena, and Mayer 2021).

2.4.2 HIV burden among the youth in Africa

The burden of HIV among the youth in Africa is a significant public health challenge. In 2018 there were over 25.7 million PLH in Africa, with 20.3 million of them in the East and Southern African sub-region, while West and Central African sub-region only account for 5.4 million (Belay *et al.* 2022: 4). Sub-Saharan Africa accounts for almost two-thirds of new HIV infections global, with an average of 2 500 young people (aged 15-24 years) becoming infected with HIV every day (UNAIDS 2022: 126). The UNAIDS has estimated a higher proportion of new HIV infections amongst youth in eastern and southern Africa by 2030.

In 2020, there were an estimated 1.8 million adolescents aged 10-19 living with HIV in sub-Saharan Africa, accounting for approximately 67% of all adolescents living with HIV worldwide (UNAIDS 2022: 125). A study conducted in South Africa found that HIV prevalence among youth aged 15-24 years was 5.6%, which is higher than any other age group in the country (Shisana *et al.* 2014). A study in Uganda reported a similarly high prevalence of HIV among youth aged 15-24 years, with a prevalence of 4.4% in males and 8.3% in females (Uganda Bureau of Statistics 2012).

According to Belay *et al.* (2022: 4), the high burden of HIV among African youth can be attributed to various factors, including poverty, gender inequality, limited access to healthcare and HIV prevention services, and cultural beliefs and practices. These challenges must be addressed through comprehensive, evidence-based interventions that prioritise the needs and perspectives of young people. Nonetheless, at least 64% of the total estimated number of PLH in the southern-region have access to ART (UNAIDS 2022: 126).

2.4.3 HIV burden among the youth of South Africa

South Africa accounts for 21% of the global HIV burden with approximately 14% of new HIV infections per year (UNAIDS 2019: 11). The WHO estimates 8.2 million PLH nationwide, which is more than any other country in the world (WHO 2022). At least 19% of HIV prevalence is among the youth, being 13.1% of the general population (UNAIDS 2021: 53).

In 2013, youth of South Africa accounted for 867,283 HIV infections, with only 14% accessing ART; 83% of those on ART were retained in care, and 81% were virally suppressed (Zanoni *et al.* 2016: 59). The scale-up of ART, youth-focused prevention interventions, and VMMC have changed the incidence of HIV in the country and the life expectancy has increased from 56 years in 2010 to 63 years in 2018 (Statistics South Africa 2022).

The prevalence of HIV among the general population in South Africa differs between provinces, with KZN being the worst affected (Karim 2019: 7). This was also evident in the Statistic South Africa report which revealed that in 2019, the HIV prevalence rate differs between provinces with KZN being the worst affected where it was 27% in KZN followed by Free State (26%), Eastern Cape (25%), Mpumalanga (23%), North West (23%), Gauteng (18%), Limpopo (17%), Northern Cape (14%), and Western Cape (13%) (Statistic South Africa 2020). Nevertheless, Statistic South Africa (2022) reported that the province of KZN has the largest number of accredited ART sites and has contributed about 40% of the total number of people on ART in the country in 2021. This beautiful province is comprised of 11 districts namely Ugu, eThekwini, iLembe, King Cetshwayo, Zululand, uMkhanyakude, uMgungundlovu, uThukela, Harry Gwala, uMzinyathi, and Amajuba. According to the South Africa Local Government Association (n.d), uMgungundlovu is the worst HIV-affected district in the province with a prevalence rate of 20%.

A cross-sectional study that was conducted in three clinical research centres of KZN among women aged between 18 and 35 years found that Edendale has a high prevalence rate of HIV (46%), followed by Ladysmith (42%), and Pinetown (41%) (Nel *et al.* 2012: 146). Therefore, the current study has taken place at the Imbalenhle area which is a part of Edendale, within uMsunduzi municipality in the uMgungundlovu district.

2.5 HIV/AIDS IN HIGHER EDUCATION INSTITUTIONS

HIV is a significant health concern in universities, as students are at risk of acquiring the virus through sexual activity and drug use. According to the Centers for Disease Control and Prevention (2020), young adults aged 15-24 account for approximately

21% of all new HIV diagnoses in the United States, and college students are among this age group.

The Chinese Centers for Disease Control and Prevention (CCDC), reported the recent increase in HIV infection among college/university students globally (Li, Jiang, and Zhang 2019). Nonetheless, between 2011 and 2015, the increase of University students infected with HIV was 35% per annum while 15% of those students were being diagnosed at a late stage with AIDS symptoms (CCDC, Ministry of Health and Welfare 2016). Li, Chu, Zhu, Li, Ge, He, Ni, Musa, Li, and Wei (2020: 136), attest that the number of newly diagnosed college students in China increased by 30% to 50% per annum in the previous years.

Diress, Addisu, and Endalifer (2020), state that the majority of students in colleges/universities do not know their HIV status even though they are classified as risky and/or vulnerable population to HIV infections. The author further states that university campuses have become a space for sexual initiation and risky sexual behaviours for many students which have exposed them to STIs and HIV. Nonetheless, at least 79% of the global population living with HIV knew their status (UNAIDS 2021: 53).

In a study by Pierre, Umutoni, Nzeyimana, and Dzinamarira (2019), an assessment of risky sexual behaviours among university students in Kigali, Rwanda found that only 15% of sexually active students use condoms consistently. Centre for Disease Control and Prevention (2018a), defined risky sexual behaviour as habits that can lead to sexually transmitted diseases including HIV and unintended pregnancies. Moreover, Mulu, Abera, and Yimer (2014) also found high-risk sexual behavior among college and university students in Ethiopia. Thus, Sub-Sahara Africa is the leading region in HIV prevalence rate globally (WHO 2020a).

In South Africa, the majority of HIV transmissions are through sexual intercourse i.e. heterosexual transmission, commercial sex, and men having sex with men (South African National Aids Council 2017; UNAIDS 2017). The socio-behavioral and structural drivers of the HIV epidemic especially among youth/students include early sexual debut, age-disparate relationships, having multiple sexual partners, unprotected sex, sexual violence, and alcohol and substance misuse (De Oliveira *et*

al. 2017; Evans *et al.* 2017; Nyirenda, Wand, and Ramjee 2018). According to Murwira *et al.* (2021: 6), the above drivers are exacerbated by the fact that university students underestimate the risk or severity of HIV/AIDS, they are too immature to handle sexual pressures, and they have misconceptions about ART.

Murwira *et al.* (2021: 7) state that more than 7% of the general population in South Africa aged 15 to 24 years were diagnosed with HIV in 2018; the majority of undergraduate students at universities in South Africa are in this age group (Higher Education and Training HIV/AIDS 2020). According to DHET (2021: 5), there are 26 public universities including UoTs in South Africa situated across nine provinces. The impact of HIV/AIDS and associated risky behaviour among the student population poses a threat to both students and university staff alike (Macupe 2019: para. 5 line 4).

The absence of a vaccine or cure for HIV makes knowledge about ART crucial in the battle against HIV/AIDS. Reuter, McGinnis, and Reuter (2018) state that "in light of the threat posed by HIV/AIDS, it is imperative to improve youth understanding of HIV prevention and treatment methods available". Furthermore, the Former Deputy Minister of Higher Education and Training in South Africa, Mr Manana, said: "The higher education and training sector is also in a unique position to lead a movement against HIV and create champions who can carry the message into their communities" (Higher Health 2017: para. 1 liine 8).

The latest data on HIV prevalence among students at HEIs in South Africa was provided by Higher Education and Training HIV/AIDS [HEAIDS] in 2010. The HEAIDS study involved a sample of 17 062 students from 21 of the 23 universities. The study did not cover FET colleges and other places of vocational training. It found the mean prevalence of HIV among all students was 3.4%, with two-thirds of the study sample being sexually active (Higher Health 2017: para. 9 line 11). An American study found that college students have limited knowledge about HIV prevention and transmission, which can lead to an increased risk of infection (Swenson *et al.* 2016). This highlights the need for comprehensive sexual health education and access to HIV testing and treatment services on university campuses.

2.5.1 General overview of students' knowledge, attitude, and practice in HEIs in the context of HIV/AIDs

The knowledge-attitude-practice model implies that an increase in knowledge influences attitude and consequently practices (Schwartz 1975). Thus, Ng, Ismail, and Tukiman (2021) state that if a person is knowledgeable about a particular disease he/she is more likely to adhere to treatment and/or prevention strategies, and less likely to have misconceptions. On another hand, Hornby, Deuter, Bradbery, and Turnbull (2015) define attitude as an individual's feelings toward the subject, as well as any preconceived ideas that a person has toward the subject. Therefore, the researcher anticipated that knowledge is an essential element for students to express their feelings and live their lives to the fullest.

2.5.1.1 Knowledge of students regarding access to ART

Being aware of the disease is the first stage in the behaviour change process, according to the knowledge-attitude-practice theory (Murwira *et al.* 2021: 14). The existing evidence is that students do have knowledge about HIV (Lorosa, Pereira, Hussne, and Silva-Boghossian 2019; Kok, Guvenc, and Kaplan 2018), but the researcher found a paucity of studies on the knowledge of students regarding the accessibility of ART. Several studies have consistently found relatively high HIV knowledge scores among the student population (Nkuna, and Nyazema 2016; Andrew, Bhuiyan, Mawson, Buxbaum, Sung, and Shahbazi 2018; Haffejee *et al.* 2018). However, a study conducted by Kantor *et al.* (2018) found that many students in South Africa have limited knowledge regarding the accessibility of ART for HIV treatment. The authors also found that students have a misconception regarding the cost and availability of ART, with some students believing that ART is only available to certain groups of people or that it is prohibitively expensive.

A study conducted at the University of Limpopo in South Africa reported inadequate HIV/AIDS prevention and mitigation programmes for students and staff due to limited commitment to support these programmes from the university. As a result, most students who were not targeted by these programmes portrayed knowledge gaps regarding HIV/AIDS (Nkuna and Nyazema 2017: 79). Andrew *et al*. (2018) state that increased knowledge about HIV/AIDS may not necessarily lead to positive behaviour

change, yet knowledge about a disease may be an initial step towards behavioural risk change.

Along with preparing university students for future life ahead of them, education is an excellent tool for disseminating information regarding HIV/AIDS, HIV prevention, and treatment. Youth are a vital asset in every society, and they must be informed about HIV/AIDS in order to protect themselves and others from being infected with the disease. In the absence of treatment that can cure HIV, knowledge about ART and prevention measures (abstinence, condoms, VMMC, PrEP, and PEP) among students is key. This knowledge can improve students' understanding of HIV and reduce misconceptions about ART.

According to the DHET (2019), more than a million students were enrolled in South African universities in the 2016 academic year. As the number of students entering university in South Africa is becoming more diverse a significant chance to evaluate students' health-seeking behavior, methods, and understanding, as well as the opportunity to get involved in health promotion initiatives (Nkuna, and Nyazema 2016: 81). The current study contributes to the small but expanding corpus of research that examines the knowledge, attitude, and practice of students regarding the accessibility of ART in HEIs. This study also provides the management bodies in the HEIs with baseline information to refer to when structuring HIV/AIDS services within their respective institutions.

2.5.1.2 Attitude of students towards ART

Hornby, Deuter, Bradbery, and Turnbull (2015) define attitude as "a feeling or opinion about something or someone". Here we look at the attitude of students towards ART by reviewing the existing literature. The researcher could find no literature on student attitudes regarding ART, but did find related studies focussing on students' attitudes towards HIV/AIDs and PLH.

Kok *et al.* (2019) revealed that nursing students portray a negative attitude towards PLH in Turkey. The authors further stated that approximately 64% of the participants (nursing students) believed that children with HIV should not be allowed to attend public schools. According to Alawad *et al.* (2019: 28) in Islamic countries such as Pakistan, there have been reports of strongly unfavourable views about HIV/AIDS and

negative attitudes toward PLH. Also, in Malaysian medical students were found to have a negative attitude toward PLH in terms of disclosure, confidentiality, and providing medical care (Choy, Rene, and Khan 2013). Lastly, a survey among Russian medical students found negative sentiments toward PLH (Dunbar *et al.* 2020: 235).

On the other hand, a study conducted in South Africa among private higher education students in Johannesburg has revealed a positive attitude towards PLH and the use of condoms as protection (Basera, Khamisa and Mokgobi 2020). A study in Fiji conducted by Alawad *et al.* (2019: 36) among medical students showed a high level of positive attitudes toward PLH. Andrew *et al.* (2020) found that 87.8% of African American undergraduate students in Jackson, Mississippi had positive attitudes toward individuals living with HIV/AIDS. In addition, global studies have documented a positive attitude towards ART among the general population (Oluwasina *et al.* 2019; Raberahona *et al.* 2019).

2.5.1.3 Perceptions of students towards ART at HEIs

Given the high rates of HIV infection among young people and the necessity to achieve the 95-95-95 targets, the South Africa Department of Education launched Higher Education HIV/AIDS programmes (HEAIDS) through the DHET to mitigate and prevent new HIV/STI and TB infections among students (DHET 2019: 7). University students are aware of HIV and HIV prevention methods within their campuses, but they hardly practice such methods i.e. abstinence, and using condoms just to name a few (Nkosi 2019: 111). According to Li, Jiang, and Zhang (2019), approximately 60% to 80% of college students in China are engaging in premarital sex and having multiple sex partners.

HIV testing or knowledge of one's own HIV status is the first step towards access to ART and prevention programmes (CDC 2018). Nkosi (2019: 109) found that not every student who tested for HIV did so for health reasons but some tested because it was a requirement for a bursary (sponsors), course of study, and/or sport code. According to Murwira *et al.* (2021: 12), Students at universities participate in high-risk sexual behaviours such unprotected sex, early sexual debut, multiple sexual partners, older sexual partners, and substance usage prior to sex which makes them more vulnerable to HIV infection. The majority of students perceive the use of condoms as a more

realistic HIV prevention method and only a few students practice abstinence (Nkosi 2019: 109).

Klaas, Thupayagale-Tshweneagae, and Makua (2018), claim that social structures that promote cultural and economic freedom which allow men sexual latitude, are to blame for the spread of HIV infection worldwide. For example, in several African societies, having two or more sexual partners (wife) is considered ethical, moral, or the norm for men. But if a woman wishes to or happens to marry two or more men, she is rejected or said to be afflicted by bad spirits, unethical, immoral, and disrespectful (Nkosi 2019: 115).

Maughan-Brown, Harrison, Galárraga, Kuo, Smith, Bekker, and Lurie (2019) and UNAIDS (2020) point out that youth, especially young women, are highly infected by HIV/AIDS in South Africa, particularly in the province of KZN. This is because the forenamed age group is highly likely to be sexually active, become pregnant, and become HIV positive, at an early age. According to Nkosi (2019), female students are more prepared to know their HIV status but are more worried about getting pregnant than contracting HIV.

The perception of students regarding ART can vary depending on various factors such as their knowledge of HIV, experience with the medication, and personal beliefs. A study conducted in Nigeria found that students had a generally positive perception of ART. The author further stated that students believed that ART was effective in treating HIV and helped individuals infected with HIV to live a longer health life (Olalekan, Akintayo and Emmanuel 2017: 122).

However, a study conducted in South Africa found that some students had negative perceptions of ART. The study found that some students believed that ART was only effective for people who had money and that those without money could not access the medication (Wouters *et al.* 2012). Thus, it appears that students' perception of ART can be influenced by a range of factors, including their socioeconomic status, level of knowledge about HIV, and personal beliefs.

2.5.2 How HEIs have responded to the HIV/AIDs epidemic

2.5.2.1 Global trends

Universities around the world have responded to the HIV/AIDS epidemic in various ways. Many have established programmes to provide education, prevention, and support for those affected by the disease. This section will list just a few.

In the USA the University of California has advocated for HIV/AIDS policies and funding at the state and national level. In 2020, the University of California Office of the President issued a statement in support of the federal Ending the HIV Epidemic initiative, stating “we are committed to working collaboratively with our federal and state partners to make this initiative a success” (University of California 2020: para.11 line 3).

The University of California San Francisco (UCSF) established the AIDS Health Project to provide education, counselling, and support services to PLH which has expanded to offer prevention and testing services as well. Columbia University took steps to address HIV/AIDS by establishing the Columbia University HIV/AIDS Initiative (CUHAI) in New York City. This initiative focuses on research, education, and advocacy efforts to combat the epidemic, with a particular focus on the impact of HIV/AIDS on women and children. Thus, universities in America have played an important role in responding to the HIV/AIDS epidemic through a range of efforts (University of California 2020).

Universities in the United Kingdom have also established education and awareness-raising initiatives aimed at students and staff. For example, the University of Oxford has an active Sexual Health and HIV Awareness Campaign that provides information and resources to students, while the University of Manchester has a Student HIV/AIDS Awareness and Support Society that works to raise awareness and reduce the stigma around HIV/AIDS (Pantelic 2017).

In addition to education and awareness-raising, universities in the UK have also played an important role in research on HIV/AIDS. For example, the University of Southampton hosts the Wessex HIV Service, which provides treatment and support for PLH, as well as conducts research into the virus (University of Southampton 2023).

Similarly, the University of Edinburgh hosts the Edinburgh Clinical Research Facility which conducts clinical trials on new HIV/AIDS treatments. Researchers at the University of Oxford were involved in the development of the Dolutegravir drug, which is now used as a first-line treatment for HIV in many countries (Pantelic 2017).

According to Ghosh *et al.* (2017), many Indian universities have established HIV/AIDS research centres to conduct research on various aspects of the epidemic, which includes prevention, treatment, and care. One such centre is the National Institute of Epidemiology in Chennai which has conducted studies on the prevalence of HIV/AIDS among high-risk populations in India (Ghosh *et al.* 2017). The National Service Scheme is a youth-led programme in Indian universities that raise awareness about HIV/AIDS and promotes prevention measures.

The Tata Institute of Social Sciences in Mumbai that has established a community-based HIV/AIDS prevention and care programme that provides testing and counselling services to PLH in Mumbai slums (Munshi, Gangakhedkar and Ghate 2012: 138).

In China, a university-led response to the epidemic is seen in the work of the Tsinghua University Health Center in Beijing. This centre offers comprehensive HIV testing and counselling services to students, staff, and the general public, with a focus on promoting awareness and reducing stigma surrounding the disease (Wu *et al.* 2014). Similarly, the Chinese University of Hong Kong has taken a multidisciplinary approach to addressing HIV/AIDS, with researchers from various fields collaborating on HIV prevention, treatment, and social interventions. For example, a study conducted by this university found that a peer-led intervention programme in rural China was effective in improving HIV testing and reducing risky behaviours among men having sex with men (Qiao *et al.* 2021).

Other universities in China have also conducted research on various aspects of the epidemic, including HIV transmission, treatment, and stigma. For example, researchers at the Sun Yat-sen University in Guangzhou have studied the prevalence of HIV and related risk factors among migrants in China, with the aim of developing targeted interventions to reduce HIV transmission (Liao *et al.* 2021).

2.5.2.2 Trends in African HEIs

Universities in Africa have responded to the HIV/AIDS epidemic in various ways, including developing prevention programmes, providing education and awareness campaigns, conducting research, and offering support services to affected individuals. For example, in Nigeria, the University of Lagos established the “Centre for AIDS Research and Education in Africa” (CARE-A) in 2004. The centre, conducted a research on HIV/AIDS, and provides education and training to students and healthcare professionals. CARE-A also collaborates with other institutions to develop and implement HIV/AIDS prevention programmes (Okoroiwu, Umoh, Asanga, Edet, Atim-Ebim, Tangban, Mbim, Odoemena, Uno, Asuquo, and Effiom-Ekaha 2022)

In Kenya, the University of Nairobi established the “Institute of Tropical and Infectious Diseases” in 1990. The institute conducts research on various infectious diseases, including HIV/AIDS, and provides education and training to healthcare professionals. The institute also partners with government and non-governmental organisations to implement prevention programmes and provide support services. Moreover, Kenyatta University, and the University of Namibia are among the universities in Africa that have developed HIV/AIDS policies (Katjavivi, and Otaala 2003).

In early 2000, African HEIs intensified their efforts to create awareness about the impact of the HIV/AIDS pandemic in their institutions. Furthermore, Katjavivi, and Otaala (2003) stats that universities have taken a lead role in developing there own institutional HIV/AIDS policies, integrating HIV/AIDS into curricula, establishing resource centres to support teaching and learning, forming partnerships to provide HCT, and carrying out social science research to engage communities and stakeholders. For example, the University of Namibia and Kenyatta University:

University of Namibia (UoN): The UoN Policy on HIV/AIDS supports the Namibian National Strategic Plan on HIV/AIDS and the Namibian HIV/AIDS Charter of Rights. Furthermore, The UoN policy is shaped by normative considerations and the human rights provisions embodied in the Constitution of the Republic of Namibia.

The UoN Policy has four principal constitutive components:

- The rights and responsibilities of staff and students.
- The integration of HIV/AIDS in teaching, research, and community service.

- Preventive care and support services.
- Policy implementation, monitoring, and review.

In fulfilment of these principles, the UoN established a radio station that uses music, jingles, drama, and talk shows as a means of mainstreaming HIV/AIDS issues among youth. It was the most popular radio station with 78% of youth aged between 16-24 years old and 98% of the students on university campuses listening to it. Furthermore, UoN has collaborated with the University of Tampere in Finland, to run a training workshop for regional governors, senior administrative officers and mayors, and town clerks from all over Namibia. This workshop entitled "The Role of Leaders in the Prevention of HIV/AIDS" was designed to sensitise leaders to various issues on HIV/AIDS and to assist in the care of the infected and affected individuals (Du Pisani, and Otaala 2003).

Kenyatta University: In 2001, the University Kenyatta in Kenya introduced a wide variety of HIV/AIDS-related courses at the certificate, diploma, and post-graduate levels, as well as a compulsory core unit for all students. This initiative aimed to produce graduates that go out to communities and provide information and skills that enable and empower community members to make choices that change their behaviour as individuals (Mungai 2002). Like UoN, Kenyatta University is also involved in training programmes for community leaders. The aim of these programmes is to ensure that community leaders are sufficiently informed about HIV/AIDS so that they can play their part in minimizing the spread of the pandemic (Barasa 2014: 13).

Another aspect of Kenyatta's involvement with the community was the development of an outreach project called OKUO. This programme involved students and staff in various community projects such as cleaning the environment, advising on mother-to child transmission, helping to plan home and family care, providing counselling on HIV/AIDS, and assisting with the care of orphans (Saint 2004: 3).

2.5.2.3 Trends in South African HEIs

The former Deputy Minister of Higher Education and Training in South Africa, Mr Manana once said: "The future prosperity of our country depends on the students in our higher education institutions. They are our future leaders. It is critical that we equip them with the knowledge and skills to remain HIV-negative and healthy" (Higher Health

2017: para. 4 line 3). To this end, the DHET supported by Higher Education South Africa, and the representative body of South Africa's public HEIs formed the Higher Education and Training HIV/AIDS Programme (HEAIDS) (Higher Health 2020).

HEAIDS is a national facility to develop and support the HIV mitigation programmes at South Africa's public HEIs and FET colleges. This programme aims to supports institutions in responding to the pandemic through their core functions of teaching and learning, research and innovation, and community engagement. Institutions are motivated and supported to address the HIV/AIDS pandemic on a human rights basis on the following fronts:

- Developing HIV prevention programmes for students and staff.
- Capacitating facilities for the treatment, care, and support of students and staff living with HIV.
- Providing comprehensive workplace HIV/AIDS programmes that cater to the needs of staff.
- Educating and equipping students through formal teaching and learning programmes to contribute to the national HIV/AIDS response in their future career fields.
- Conducting research that will strengthen society's ability to resist and ultimately overcome the pandemic.
- Providing HIV/AIDS services to related communities through outreach projects and practical training programmes.

According to Higher Health (2020), HEAIDS has significantly enabled the response of the higher education sector to HIV/AIDS and makes an invaluable contribution to the national response to the HIV /AIDS pandemic through a number of programmes including but not limited to the following:

❖ *First Things First*

First Things First is a programme led by HEAIDS in partnership with the Non-Governmental organization (NGO) with support from the United States Agency for International Development (USAID), President's Emergency Plan for AIDS Relief, Innovative Medicines South Africa, DHET, DoH, and South African National Aids Council. This programme brings HIV testing, counselling, and education directly to

students on campuses, and provides screening for STIs and TB in order to mitigate the spread of these diseases. According to Higher Health (2020: 6) in 2016 alone the First Things First campaign provided HIV testing and counselling to more than 160 000 students in 429 campuses of HEIs in South Africa. To know one's HIV status is the basis for caring for oneself, one's loved ones, and the broader community of HIV/AIDS.

Given that women aged 15 to 24 are nearly twice as likely to become infected with HIV, compared to any other age and gender group (CDC 2018), researchers postulate concerns about high rates of stigma related to HIV testing perceive by university students in their home settings compared to university settings (Haffejee *et al*. 2018; and Dunbar *et al*. 2020). Changing norms around testing is vital to reduce the spread of the pandemic, thus HIV testing is the first step in preventing HIV acquired/transmission, and HIV progression to AIDS which can result to death (CDC 2018). A study of TVET colleges in 2014 found that more than a quarter of students surveyed only used condoms if requested to do so by their sexual partners. More than a third of students felt that they could not ask their partners to get tested for STIs without being accused of infidelity (DHET 2019). This calls for more work to be put into educating and inspiring students to visit health facilities and obtain knowledge about available preventive methods and/or treatment. The WHO (2018a) states that health promotion is crucial in nations with a high rate of HIV infection, such as South Africa, to inform the populace about prevention measures and treatment.

The First Things First campaign is an effort to bridge the gap by collaborating students (peer educators), NGOs, and government and private stakeholders to drive health services to the HEI community (Reynolds 2016: 90). The First Things First campaign also offers screening, treatment, and support for a wide range of general health issues including hypertension, diabetes, cardiovascular health, and cancer. During campaigns family planning, dual contraception, and reproductive and maternal health services are also provided to students as needed.

- *Peer education*

Effective health promotion incorporates both health communication and social marketing. This method is critical in educating and informing individuals about health-

related issues that could cause harm to their lives (Heydarzadeh, Alilu, Habibzadeh, and RasouIi 2020: 41). If the information is understood and used correctly it can be adapted as the individual's life improves, preventing and reducing the spread of disease. Due to the absence of a vaccine or cure for HIV/AIDS, education is a proven strategy for combating HIV/AIDS (Murwira *et al.* 2021: 47). The knowledge-attitude-behaviour theory attests that being aware of the disease is the first stage in the behaviour change process (Rink and Wong-Grünwald 2017: 369). Furthermore, UNAIDS emphasises that having the correct knowledge about HIV has reduced the rate of new infections in most countries (UNAIDS 2020: 78).

The existence of a correlation between the level of awareness and the probability of access to ART is noted by scientists. According to Mohapi and Pitsoane (2017) and Reuter, McGinnis and Reuter (2018) it is imperative to improve understanding and awareness around the threat posed by HIV/AIDS among individuals. Peer education has been recognised as a complementary approach to health promotion intervention for over 50 years (Topping 2022: 3). This approach is vital during programmes such as First Thing First which target students. Peers can communicate openly and freely with one another in their native tongue without connotations of social control or authoritarianism, and they have the authority of fellow members who may have gone through similar experiences.

Higher Health (2020) refers peer education as a health promotion and intervention method used to unleash the potential of individuals to transform their lives and the lives of those in their communities. This approach empowers individuals in order for them to make informed decisions regarding the challenges they encounter. It is also about selecting and equipping individuals to influence their peers positively or by serving as role models for socially acceptable practices such as good behaviour, and/or medication adherence. Literature on peer education in HIV/AIDS programmes for youth shows that peer involvement increases access to and acceptance of HIV/AIDS prevention methods (Mahat and Scoloveno 2018; Medley *et al.* 2009; and Chen *et al.* 2020).

Nonetheless, the researcher found no literature reviewing the effect of peer education on access to ART. Thus, related studies were taken into consideration. Chen *et al.* (2020) reviewed the effectiveness of peer education interventions for HIV prevention

in developing countries and found that peer education was significantly associated with increased HIV knowledge, reduced equipment sharing among injection drug users, and increased condom use. However, it has a non-significant effect on STIs. The efficacy of peer education among factory workers in low and middle-income countries has also shown an increase in the proportion of workers willing to take their partners for HIV counselling and testing.

Another study on peer education for HIV prevention among high-risk groups (He *et al*. 2020) shows that peer education can improve rates of HIV testing and condom use while reducing equipment sharing and unprotected sexual intercourse. Peer education program was also linked to a 36% drop in HIV infection rates in high-risk populations. Importantly, peer education showed a consistent effect on behaviour change over 24 months. This study showed that peer education had a long-term impact on behaviour change among high-risk HIV groups.

Berg, Page and Ogard-Repal (2021) conducted a study on the effectiveness of peer support for people living with HIV with participants from nine different countries. The main outcome of this study shows better retention in care, ART adherence, and viral suppression. The state of evidence for the main outcomes (ART initiation, CD4 cell count, quality of life, and mental health) was promising but too uncertain for firm conclusions. Overall, peer support was superior to routine clinic follow-up in improving outcomes for PLH over the long term.

While the accessibility of ART within a community relies heavily on community awareness and medicine (ART) availability, this goal is likely to be more successful if the advice from experts is combined with the knowledge and practices of that community (Sarna and Kellerman 2010: 40). Experience with the way the Ebola and COVID-19 epidemics were responded to in African countries shows that in an environment of trust, community partners can help to improve the understanding of disease control protocols and suggest moderate changes that better reflect the community's sensitivities without compromising safety (Marais *et al.* 2015; Michie *et al.* 2020). Such an approach not only prevents stigmatisation and fear-driven responses among affected individuals, families, and communities that can hamper preventive efforts, but also acts as a powerful lever to enhance adherence and mobilise community engagement.

❖ *PrEP and PEP programme*

The U.S. Food and Drug Administration approved the first PrEP medication for HIV prevention in 2012 (CDC 2021a). The WHO and CDC have both endorsed the drug. In 2016, Norway was the first country in the world to offer PrEP for free, followed soon by South Africa and this inspired other countries to undertake similar implementation (CDC 2021a). In 2017, South Africa expanded it PrEP programme from prioritising sex workers to include at-risk populations i.e. adolescent girls and young women (aged 10-24 years), and men who have sex with men. After this, the provision of PrEP began in selected campus clinics such as Nelson Mandela University, Rhodes University, University of Limpopo, University of the Free State, University of Venda, University of Zululand, and Vaal University of Technology (Higher Health 2020).

PrEP has expanded considerably, but studies still show a low level of PrEP awareness among the youth (Shamu *et al.* 2021; Haffejee *et al.* 2023). A study survey in KZN found a low understanding of PrEP among youth, with university students portraying full understanding. In that study only 15% of participants were aware of the availability of PrEP at their local clinic (Haffejee *et al.* 2023).

❖ *ART as a prevention method*

The ART can reduce the amount of HIV in the body (viral load) to a very low level or an undetectable viral load if taken as prescribed (WHO 2022). Reaching and keeping an undetectable viral load is the best thing PLH can do to stay healthy. According to CDC (2022: para. 3 line 6), when a person has an undetectable viral load that person can no longer transmit HIV to others through unprotected intercourse, syringe sharing, and to an unborn baby during pregnancy or birth, and breastfeeding. There is strong evidence for the use of ART as an HIV prevention method. Therefore, the WHO has recommended ART to be initiated for all PLH to prevent HIV transmission and new HIV infections (UNAIDS 2020: 17).

In South Africa, only a few universities have implemented this prevention method. In 2019, the Cape Peninsula University of Technology was the most recent university to publicly announce that its student health clinic will provide ART to its students (Macupe 2019). This university joined the University of Limpopo, Nelson Mandela University, Vaal University of Technology, Rhodes University, North West University, and the

University of Zululand which were already offering ART to their students through their campus healthcare centres (Mogoatlhe 2018: para. 3).

It is very unfortunately that the researcher has not come across recent studies showing how many universities now provide ARTs to their students out of the 26 public universities in South Africa. Higher Health (2020: 7) carries the information that some universities such as Wits, DUT, MUT, UKZN, UJ, and UCT do not provide ART and that they refer their students to the nearest sites that provide ART if they have tested positive and/or need to continue with ART.

There is no data reporting the estimated number of students eligible for ART and/or initiated on ART. Therefore, the researcher has looked at the number of the general population in South Africa eligible for ART compared to those initiated on ART. Figure 2.1 indicates the estimated number of PLH not on ART (ART-eligible) and the number of PLH initiated on ART between 2006 and 2015 respectively (Goga *et al.* 2021).

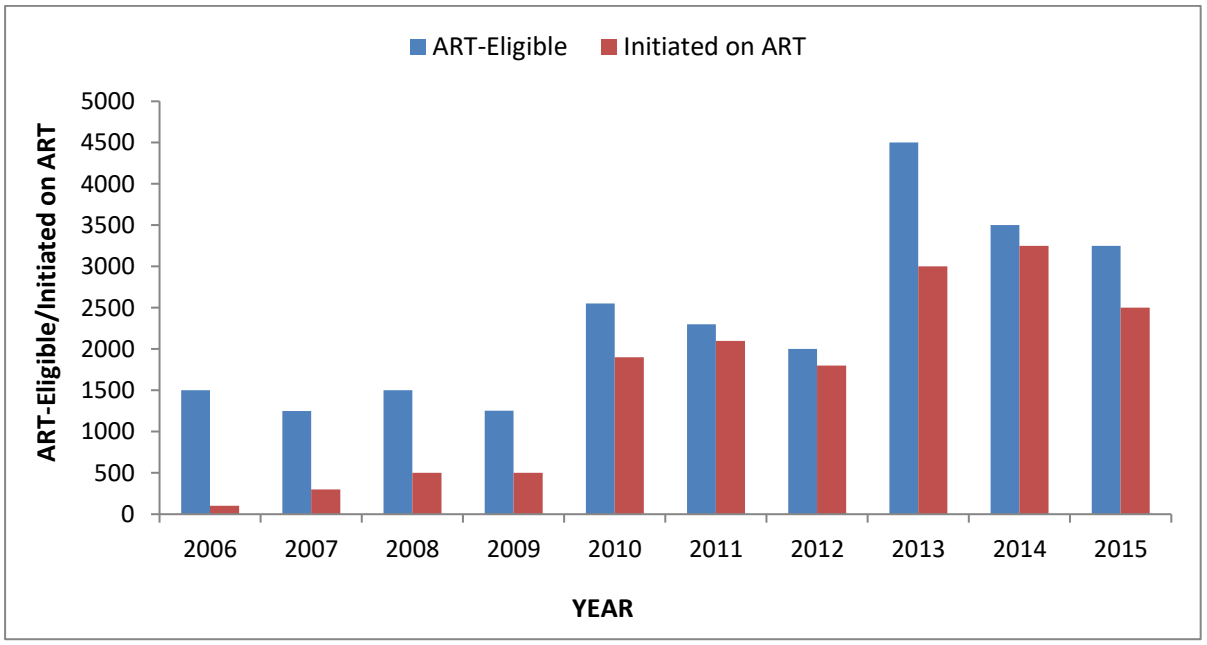

Figure 2.1: ART-eligible/Initiated on ART
Source: Goga *et al.* (2021)

The government and several organisations have come together to promote individual health by ensuring easy access to ART to eliminate the HIV pandemic (DoH 2018). Earlier ART initiation with simpler, effective, and less toxic regimens has contributed to high-level viral suppression and reduced mortality rate among the general population (UNAIDS 2021: 52). A suppressed/undetectable viral load reduces the risks

for HIV transmission, and decreases the mortality rate associated with AIDS, and improves the quality of life (CDC 2018). In recent years, many campaigners around the world have made ART production and distribution a top priority because of the need for ART availability and accessibility (especially for youth and women) in order to eliminate the transmission of HIV (Goga *et al.* 2021: 57).

2.5.2.4 Other HIV preventive measure accessible to students

- *Free condoms*

Condom programming is a core pillar for HIV prevention, according to UNAIDS (2022). For many, condoms remain the sole effective HIV prevention strategy that they are familiar with and convenient (Mazibuko, Saruchera and Okonji 2023: 421). The condom is now the most effective HIV prevention tool available, reducing HIV transmission by 98% during vaginal sex and 70%to 90% during anal sex when used consistently and correctly (UNAIDS 2022: 128).

According to UNAIDS (2022), increased condom uses since 1990 has prevented an estimated 117 million new HIV infections, with nearly half (47%) of this number being in sub-Saharan Africa and more than one-third (37%) in Asia and the Pacific. Therefore, between 2016 and 2021 the UNAIDS set an ambitious global target to increase the availability of condoms to 20 billion per year, especially in low- and middle-income countries, and to achieve 90% condom use during sexual activities (UNAIDS 2020).

Condoms are an essential tool in promoting safer sex practices among sexually active individuals, including university students. A study conducted by the American College Health Association in 2019 found that at least 57.5% of sexually active college students reported using a condom during their most recent sexual encounter (Messman, and Leslie 2019).

To increase access to condoms and promote safer sex practices, many universities have implemented programmes to provide free or low-cost condoms to students. For example, the University of California, Berkeley offers free condoms at their health centre and other campus locations (University of California n.d.), while the University

of Minnesota also provides free condoms in residence hall bathrooms (Minnesota Department of Health 2022).

Some universities have taken additional steps to promote condom use by incorporating condom education and distribution into their sexual health programmes. The University of Florida's Student Health Care Center offers workshops on condom use and safe sex practices and also distributes free condoms to students (Auth and Muther 1990: 45). Similarly, the University of Michigan's University Health Service provides free condoms and information on proper condom use in their campus pharmacy (University of Michigan n.d.).

Universities' efforts to increase access to condoms and promote safer sex practices can have a positive impact on the sexual health of their student populations. However, according to the UNAIDS (2020) global report, the use of condoms during higher-risk sex among young people aged 15 to 24 has decreased in five countries in West and Central Africa (Benin, Ghana, Guinea, Mali, and Nigeria) and three countries in East and Southern Africa (Ethiopia, Uganda, and Zambia). This drop has led to a decline in condom demand as reported by USAID in relation to the procurement process.

Duflo *et al.* (2019) stated that the distribution of condoms is unlikely to dramatically lower the prevalence of HIV among youth on its own. As per WHO recommendations, condoms should be distributed as part of a package of comprehensive prevention services that also include PrEP, VMMC, and structural measures to lessen vulnerability to HIV infection (USAID 2022).

- *Voluntary medical male circumcision (VMMC)*

Data from three large-scale trials conducted in the early 2000s in Kenya, South Africa, and Uganda revealed that VMMC administered by skilled medical personnel was both safe and successful in reducing HIV transmission. Recommendations to include VMMC in the HIV prevention toolkit were then made in 2007 by UNAIDS and the WHO for nations and regions where HIV is frequently transmitted heterosexually and where circumcision is uncommon. Strong evidence from 17 randomised controlled trials completed between 1986 and 2017 demonstrates a 60% decreased risk of HIV among circumcised men which supports UNAID and WHO recommendations. Figure 2.2

presents an estimation of the VMMC carried out by WHO in 15 priority African nations between 2008 and 2018.

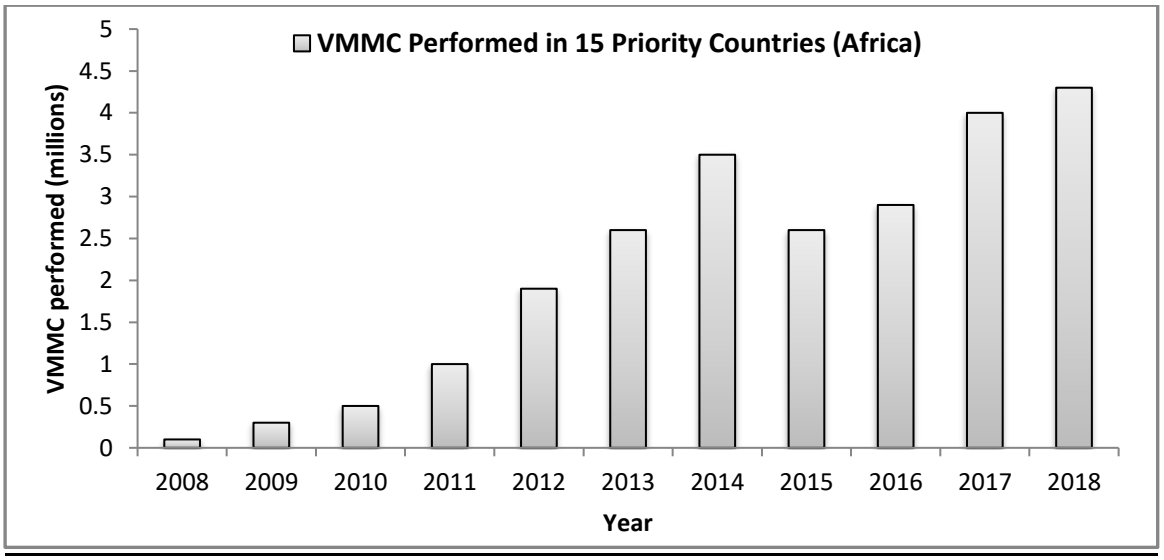

Figure 2.2: VMMC performed in 15 priority countries
Source: World Health Organization (2020b)

To date, over 27 million males, mainly youth, have been circumcised in Africa. Eastern and Southern Africa regards VMMC as a key prevention intervention as this approach gives the male population a chance to be examined medically as they do not often seek health care services (WHO 2020b: 6). According to Grund *et al.* (2017: 37), VMMC also increases protection for women against cervical cancer, cervical dysplasia, HPV, chlamydia and syphilis. In the ongoing effort to end the AIDS epidemic, evidence shows that VMMC is an important intervention alongside other effective behavioural and biomedical HIV prevention interventions such as PrEP and/or PEP.

2.5.3 Constraints of access to ART among students in HEIs

ART has transformed HIV from a fatal illness to a chronic, manageable condition. However, there are still challenges to its effective implementation, especially among students in universities. One major constraint is the high traveling cost to healthcare facilities for ART (Hlongwa *et al.* 2022: 4). In low- and middle-income countries, many students cannot afford to pay for ART, and this limits their access to treatment. According to a study by Mbuagbaw *et al.* (2018: 11), “financial constraints are the most

frequently cited barrier to ART initiation and adherence among university students living with HIV."

Another constraint is the stigma and discrimination associated with HIV (Olalekan, Akintayo, and Emmanuel 2017: 127). Many students fear disclosing their HIV status to their peers, lecturers, and family members. This fear can lead to poor adherence to ART and reduced engagement in care. As one study by Muiruri *et al.* (2020: 216) notes, "HIV-related stigma was found to be a significant barrier to adherence to ART among university students living with HIV". In addition, limited access to healthcare services and poor healthcare infrastructure can also hinder students' ability to access and adhere to ART (Reynolds 2016: 44). Some universities do not have on-campus healthcare facilities, while others may have inadequate staffing or limited hours of operation. This can make it difficult for students to receive the necessary medical care and monitoring for their HIV treatment.

Addressing these constraints requires a multi-pronged approach that includes improving access to affordable ART, reducing HIV-related stigma, and strengthening healthcare infrastructure in universities.

2.6 WHAT HAS BEEN DONE TO EXPAND ACCESS TO ART

ART has been crucial in managing HIV/AIDS, including for young people. To expand access to ART for youth, various initiatives have been undertaken. For instance, in the United States, the Ryan White HIV/AIDS Programme provides funding for medical care and support services to low-income individuals and families living with HIV. This programme includes a specific focus on serving youth through its programmes, by providing grants to support outpatient HIV care and support services for youth up to 24 years of age (CDC 2022: para. 1 line 5).

According to WHO (2018a), in the United Kingdom young people (aged 13-24) are a key population for HIV prevention and treatment efforts. However, there are challenges faced by young PLH in accessing and adhering to treatment. To address these challenges, several initiatives have been launched to expand ART access and support for youth living with HIV. For example, the charity organization Terrence Higgins Trust provides youth-friendly HIV services, i.e. testing, ART, and support. The Trust also offers youth-led support groups and advocacy campaigns to raise

awareness about HIV and reduce stigma. In addition, the United Kingdom National Health Service has launched a national programme called the HIV Adolescent Trial Network which aims to improve HIV care and treatment for young people. This programme includes a network of clinics that provide specialised care and support for young PLH, as well as research into new treatments and interventions (Messman, and Leslie 2019).

In sub-Saharan Africa, where the majority of young PLH reside, there has been a push for task-shifting, which involves training non-specialist healthcare workers to provide ART services. This approach has helped to increase the number of healthcare workers able to prescribe ART and to reduce the burden on specialist physicians (WHO 2018b). For example, the Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) programme was launched in 2014 with the aim of reducing new HIV infections among adolescent girls and young women in 10 sub-Saharan African countries. The programme provides a package of services, including HIV prevention education, access to voluntary medical male circumcision, HIV testing and counselling, and referral to ART for those who test positive for HIV (Denison *et al.* 2020). In addition, there have been efforts to improve adherence to ART among youth, such as providing peer support programmes, mobile phone-based interventions, and incorporating adolescent-friendly services into healthcare facilities.

In 2013, Kenya established the Adolescent HIV Treatment and Care Programme. This programme provides comprehensive HIV care and treatment services to youth, including ART, adherence support, and psychosocial support. The programme is also fighting against stigma and discrimination towards HIV-positive youth while improving their overall health and well-being (Mutunga *et al.* 2018).

One study conducted in South Africa found that integrating youth-friendly services into healthcare facilities increased ART initiation and retention among young PLH (Cluver, Pantelic, Toska, Orkin, Casale, Bungane, and Sherr 2018). The Adolescent and Youth Friendly Services (AYFS) programme was launched in 2011 by the DoH. The programme aims to provide comprehensive health services, including HIV prevention and treatment to young people aged 10 to 24 years old, with a focus on improving access and reducing stigma.

A study conducted by Cluver, Toska, Orkin, Meinck, Hodes, Yakubovich, and Sherr (2016), found that young people who accessed AYFS were more likely to be on ART than those who did not use the programme. Therefore, this programme has been associated with improvements in retention in care, viral suppression, and improved general health outcomes for young PLH in South Africa (Zuma *et al.* 2022).

2.7 THEORETICAL FRAMEWORK

Anfera, and Mertz (2015: 30) define a theoretical framework as a set of interconnected ideas, definitions, and assertions that provides for a methodical examination of occurrences by establishing the links between variables to explain and predict events. Brink, Walt and Rensburg (2017: 126) add that a theoretical framework is found in the propositional statements coming from an existing theory.

2.7.1 Theoretical framework used to guide the study

The theory of reasoned action was used as a framework to guide the study. The two psychologists Martin Fishbein and Icek Ajzen developed the theory of reasoned action in 1975 as an improvement to the information integration theory after attempting to determine the differences between attitude and behaviour. The theory of reasoned action is a cognitive theory that helps psychologists in forecasting and elucidating health outcomes as well as understanding human behaviour in certain settings. It acknowledges that there are factors that can limit the influence of attitude on behaviour and has four main terms: belief, attitude, subjective norms, and intention (Fishbein and Ajzen 1975). Each of these terms are interrelated and ultimately contribute to behaviour thus they are often treated by behavioural scientists as factors in an equation intended to predict human behaviour. Fishbein and Ajzen (1975) expand on the four terms as follows:

- **Belief** is the probability that an object has some attribute and is used to mean that someone has a belief that some action or behaviour will lead to a consequence.
- **Attitudes** are human positive or negative evaluations of a particular behaviour, i.e., whether or not someone thinks the behaviour is a good or bad idea, or if it will lead to outcomes that they personally value.

- **Subjective norms** are related to the important people in someone's life and whether they think those people would want them to perform the behaviour. Subjective norms are a function of a society and are a motivation for someone to comply with the important people in their life. *Normative beliefs* refer to whether or not someone believes that others want them to carry out an action. Motivation refers to how much someone wants to do what the significant other wants him or her to do.
- **Behavioural intention** refers to the readiness to perform behaviour and describes how likely someone thinks they are to perform a specific behaviour.

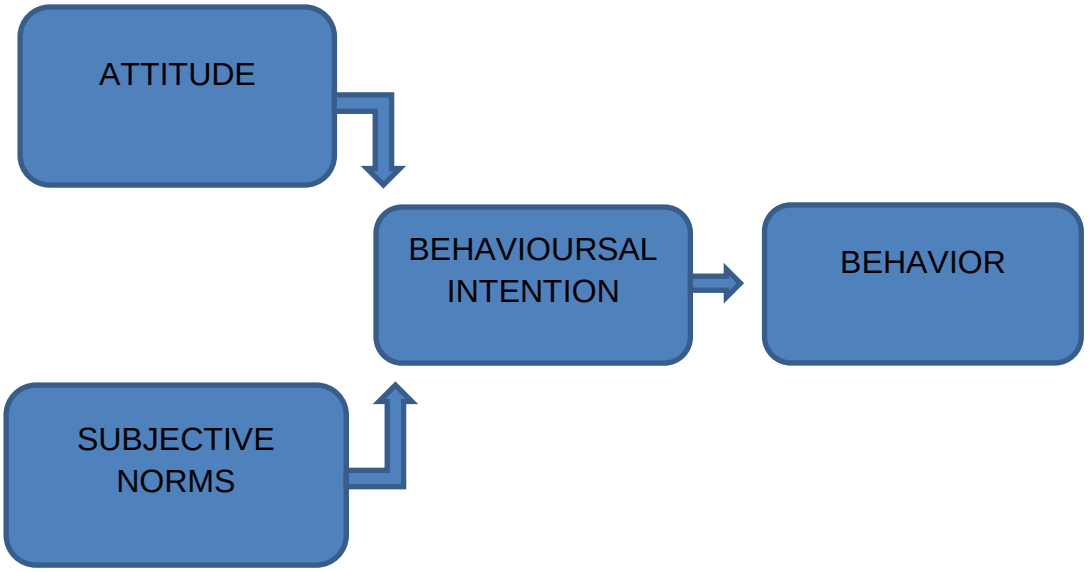

Figure 2.3: Theory of reasoned action
Source: Fishbein and Ajzen (1975)

Figure 2.3 illustrates the terms in the original work by Fishbein and Ajzen (1975) and the relationship between the main components of their model. The authors further stated that attitudes, norms, and perceived control lead to intentions, which is the readiness to do behaviour. Therefore, the researcher regards the knowledge, attitudes, and behaviours (practice) of students within the UoT as key factors regarding the accessibility of ART in the UoT.

2.7.2 How the framework guided the study

This framework guided the research process from data collection to data interpretation. During data collection, analysis, and interpretation, the researcher developed themes to explore the knowledge, attitudes, and practices of students regarding access to ART. According to Fishbein and Ajzen (1975) there are four factors that can limit the influence of attitude on behaviour.b. These include beliefs, attitudes subjective norms and intentions (Figure 2.3). Thus, guided by these , the current study had four objectives which were to :

- Determine the current practices regarding access to ART within a UoT in KZN.
- Explore and describe students' knowledge regarding access to ART within a UoT in KZN.
- Determine students' attitudes regarding access to ART within a UoT in KZN.
- Describe the factors that influence access to ART in a UoT in KZN.

Fishbein and Ajzen (1975) also indicated that external variables such as demography, attitude, personality, and other individual differences could influence behaviour. The researcher anticipated that one of the external factors could be the knowledge of students regarding access to ART. Thus, the study explored this external variable. Figure 2.4 presents the theory of reasoned action adapted from Fishbein and Ajzen (1975) as applied in this study.

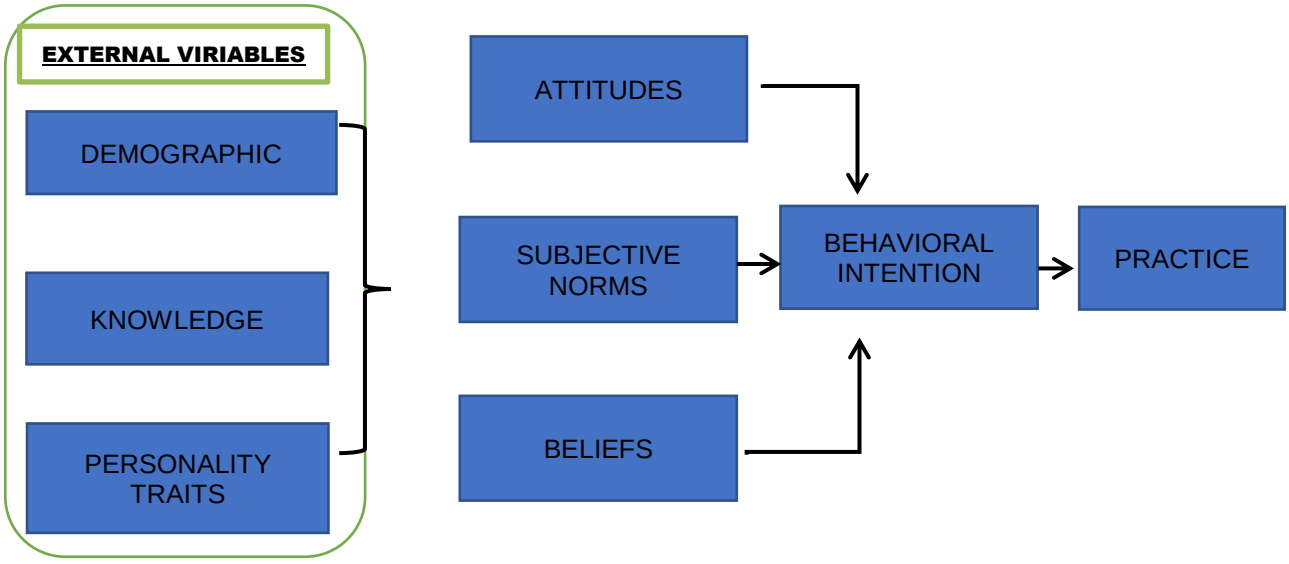

Figure 2.4: Theory of reasoned action Adapted from Fishbein and Ajzen (1975)

2.8 CHAPTER SUMMARY

This chapter presented the literature available that supports the phenomenon under study by outlining the search strategies used: the HIV burden rate among youth in South Africa, an overview of HIV in universities, and implementations of programmes to curb HIV. Moreover, a discussion on a framework and the theory guided the study in addressing the problem. Chapter 3 presents the methodology i.e. research approach, sampling methods, research process, and rigour.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 3 presents the methodological approach and methods utilised to conduct the study. It also examines previous studies in the field of health promotion in order to develop conclusions and make comparisons. In addition, the chapter provides an overview of methodological techniques employed by distinct researchers in the field of health promotion within the university setting.

3.2 RESEARCH METHODOLOGY

Polit and Beck (2021: 797) define methodology as a developed tool or refined way of obtaining, organising, and/or analysing data. According to Gray, Grove and Sutherland (2017: 407), research methodology is a conceptual phase of the research process that includes the development, testing, and assessment of research instruments and procedures to ensure a systematic approach and obtaining knowledge about reality. There are three types of research methodologies that can be used to conduct a study: qualitative, quantitative, and mixed methods (Polit and Beck 2021: 48).

Qualitative methodology is defined by Grove and Gray (2019: 16) as being a broad variety of research designs and methods used to explore phenomena of social action about which the researcher has no prior knowledge. Quantitative research is a type of research that emphasises the quantification of data collection and analysis. It is shaped by empiricist and positivist ideologies and is based on a deductive methodology that emphasises theory testing (Polit and Beck 2021: 43). The authors further state that mixed method studies include the use of more than one method of data collection.

3.2.1 Research methodology adopted for the study

The qualitative research method was considered to be appropriate for this study, which investigated the knowledge, attitudes, and practices of students regarding access to ART within a UoT. The qualitative method helped the researcher to gain a better understanding of the phenomenon under investigation (access to ART) so as to come

up with recommendations to facilitate improved access to ART. Creswell *et al.* (2020: 81) state that qualitative researchers are motivated by the desire to know more about a phenomenon, a social process, or a culture from the perspectives of the people who are experiencing the phenomenon, involved in the social process, or living in the culture. According to Polit and Beck (2021: 47), qualitative studies emphasise the comprehensive, dynamic, and unique components of the human experience; and seek to fully capture diverse experiences in the context of those who are having them. The UoT under study was diverse in terms of ethnic demographics, including Africans, Coloured, Whites, and Indians.

3.2.2 Research Design

Creswell *et al.* (2020: 195) define research design as a plan or strategy that specifies the participants to be chosen, the data-gathering method to be employed, and the data analysis to be performed, starting with the underlying philosophical assumption. Gray, Grove, and Sutherland (2017: 401) assert that research design is the framework of research methodologies and techniques adopted by a researcher to discover the essence of the topic of study by suspending prejudices, preconceptions, and beliefs. Polit and Beck (2021: 51) argue that qualitative researchers use data that does not provide statistical values or quantify relationships, and use words rather than numbers to define a phenomenon which makes it descriptive, exploratory, and inductive in nature. The researcher chose to follow an exploratory-descriptive and contextual design to explore the knowledge, attitudes, and practices of students.

Exploratory research is defined by Grove and Gray (2019: 374) as research conducted to gain new insights, discover new ideas, and increase knowledge of the phenomenon. This study explores the experiences of student regarding access to ART in a UoT in one of the districts of the KZN province in South Africa.

Descriptive research entails direct examination, analysis, and explanation of the phenomenon while avoiding unjustified assumptions and aiming for the most intuitive presentation possible (Brink, van der Walt and van Rensburg 2018: 112). Descriptive studies are used to document the phenomenon of interest in the real situation (Polit and Beck 2021: 15). The experiences of students regarding access to ART in a UoT

are described and recommendations for the improvement of the health services within campus clinics are proposed.

Grove, Burns and Gray (2017: 124) attest that an exploratory-descriptive design focuses on gathering data from the perceptions and interpretations provided by persons who have encountered the experience. In addition, Grove and Gray (2019: 373) state that an exploratory-descriptive design is valuable in the provision of information and insight needed to develop effective interventions that might alleviate the problem. The objective of using an exploratory-descriptive design in this study was to gain the primary information from students' experiences regarding access to ART, either from personal experience or seeing someone within the community/family, at a health facility, during the work-integrated learning (WIL), and/or other students within the UoT. Furthermore, the choice of the study design was also motivated by the researcher's desire to address the alarming trend of the number of students newly diagnosed with HIV in the UoT.

Contextual research entails seeing people performing an activity in their natural setting (such as their home, workplace, or school). According to Duda, Warburton and Black (2020: 1), contextual research produces conclusions that are true to the time, place, and values of the study. Therefore, this study was contextual in both time and place as it was conducted in a UoT where the participants were currently staying or studying, so this was their natural setting.

3.3 RESEARCH PARADIGM

Polit and Beck (2021) describe a paradigm as a frame of reference for considering natural events that include a set of guiding philosophical presumptions. The authors further state that paradigms for human inquiries are frequently described in terms of how they address fundamental philosophical questions. Three dominant approaches relevant to science are positivism, critical theory, and interpretivism. Interpretivism is an approach within the social science that emphasises the importance of insiders' opinions to understanding social reality (Brink, Walt and Rensburg 2018: 283), so it was suitable to serve as the study's guiding principle.

3.4 STUDY SETTING

Creswell *et al*. (2020: 39) define research setting as a specific location or locations where data is collected. The province of KZN has two UoTs, the Durban UoT (DUT) and Mangosuthu UoT (MUT)). One of these two UoTs in KZN was used to conduct the study. The selected UoT has campuses in the eThekwini and Msunduzi municipality, commonly referred to as the Durban and Midlands campuses respectively. Each campus has multiple sites; five sites in Durban, and two sites in Midlands. The two sites in the Midlands are Riverside and Indumiso. The research setting was restricted to the Indumiso site. The selected UoT has a capacity of +33 000 undergraduate and postgraduate students (Durban University of Technology n.d). The selected UoT was targeted because it did not provide access to ART and also had no formalised referral system to ART centres. Thus, the university students were believed to have a capacity to provide general but vital information about ART or access to ART regardless of their HIV status.

The site of interest was Indumiso which is situated in Imbali Township, approximately 15 km from Pietermaritzburg, the capital of KZN. The selected campus was selected for convenience to the researcher, and was easily accessible to participants, thus reducing travelling costs. The researcher is a healthcare provider within the UoT but based in the Durban sites, therefore was not known at the Midlands campuses and would bring no undue influence to bear. The selected site has three faculties, namely, Nursing, Education, and Civil Engineering. At the time of the study, these three faculties were mainly dominated by the African population with very few students from other racial groups. The campus predominantly offers undergraduate degrees and diploma programmes.

3.5 POPULATION

According to Grove and Gray (2019: 211), population is a group of people, objects, or things that share some common traits and are of interest to the researcher. The population for the planned study was students registered for undergraduate programmes that are housed in the Indumiso site of the Riverside /Midlands campus. This population group was targeted because the majority of the undergraduate students reside in the campus residences and are the ones who often use the campus

clinics. The researcher assumed that the university students could provide general but vital information about ART regardless of their HIV status.

3.5.1 Study population

According to Grove and Gray (2019: 211), population is a group of people, objects, or things that share some common traits and are of interest to the researcher. Polit and Beck (2021: 450) make the following distinction between target and accessible populations: target population refers to an entire set of elements or individuals that the researcher intends to make a generalisation about, while accessible population is referring to the portion of the target population that meet the study's inclusion criteria, and that the researcher is able to access.

The target population for this study was students registered for undergraduate programmes who were attending classes at Indumiso site of the Midlands campus for at least six months or more. These students were targeted to participate because the researcher assumed that at this time they would already be settled and have explored the campus and nearby places i.e. healthcare settings.

3.6 SAMPLING PROCESS

Creswell *et al.* (2020: 214) define sampling as a process of selecting a population, object, or item from within a statistical group in order to estimate a characteristic of the full group. Polit and Beck (2021: 497) attest that sampling is the process of picking examples to represent an entire population. This study was driven by qualitative research methods. According to Grove and Gray (2019: 311), there are two fundamental samples in qualitative studies namely, probability and non-probability. This study used purposive sampling, a form of non-probability sampling.

According to Grove and Gray (2019: 311), non-probability sampling is a technique for picking individuals from a community based on personal judgement. This technique is convenient because it enables the researcher to choose the individuals from the population who have relevant information and are able to articulate and explain the nuances. There are four major techniques of non-probability sampling: convenience, quota, purposive or theoretical, and snowball (Burns and Grove 2013: 310).

Purposive sampling involves choosing individuals who are informed about the subject at hand due to their involvement in and familiarity with the circumstances, who can help the researcher understand the problem and the research question (Pilot and Beck 2021: 499; Creswell 2020:185). Students who had been in the UoT for a minimum of six months were regarded as the best source of rich and valuable information regarding access to ART in this UoT.

The process begun with volunteer informants among students attended the recruitment sessions at Indumiso site, then the researcher selected those who met the criteria and more likely to benefit the study. To ensure the quality of result the researcher used purposive sampling throughout the study.

3.6.1 Sample size

A sample is a portion of the population chosen to reflect the entire population (Polit and Beck 2021: 501). The sample of the study was DUT undergraduate students who met the inclusion criteria, and completed and returned the informed consent form. The principle of data saturation was applied consideraing that there is no set sample size for qualitative research (Polit and Beck 2021: 251). Data saturation is defined by Grove and Gray (2019: 671) as the point at which additional sampling gives no new information but is merely a duplication of previously collected data. In this study, data saturation was reached at participant number 17th. The Three additional interviews were conducted to verify and ensure no new information arise. Which confirmed data saturation. Thus, 20 interviews were conducted.

3.6.2 Sampling criteria

The sampling criteria are the characteristics essential to the membership of the target population. These criteria are the characteristics that narrow the population of interest (Burns and Grove 2019: 366).

For this study, the inclusion criteria were:

- Undergraduate students attending at Indumiso site, because they were easily accessible since they’re on-campus full time.
- Students who have been studying at DUT for a minimum of 6 months because they are better orientated about the institution.

- Students aged 18 years old or above as they were able to give their own consent to participate in the study.

Exclusion criteria:

- Postgraduate students and undergraduate students who did not meet the inclusion creiteria were excluded.

3.7 ETHICAL CONSIDERATIONS

Grove and Grey (2019) define ethics in research as the theory or discipline that deals with principles of moral values and moral conduct that regulate how research involving interaction between researcher and other persons, and how data relating to them, is managed and conducted. This study was conducted in accordance with the DUT procedure and standards. The study began after receiving institutional Ethical Clearance (IREC 284/22".) and gatekeepers permission (Appendices A and C)

Researcher and participant personal information was in accordance with the institutional ethical principles and the South African POPI Act No.4 of 2013 i.e. Participants were made anonymous by assigning a code to them. The goal of this Act is to protect data subjects from security breaches, theft, and discrimination (South Africa, The presidency 2013: 17). The researcher ensured that the study data was deserving kept at the utmost ethical consideration. According to Creswell *et al.* (2020: 147) anonymity, beneficence, respect for people (autonomy), and justice are the core ethical values in research, all of which were applied in this research study. As this research involved human participants, the following ethical principles were adhered to:

Anonymity – This principle means that research should do no harm (Creswell *et al.* 2020: 196). The researcher ensured that the identity of participants was, and will not be, made known to any person/parties or organisation that may or may not be involved in the research process. The researcher also ensured that information provided by participants was kept safe on a hard drive on their personal computer protected by a password. The hard drive with downloaded copies of transcripts has been placed in the researcher's personal lockable steel closet at home and will be destroyed five years after successful examination of the dissertation.

Beneficence is an act to do no harm (Creswell *et al*. 2020: 121). The researcher ensured that all participants were protected at all times and that no harm was inflicted to them while and for participating in the study. Fortunately the studydid not pose any risks to the participants. The findings from the study could directly or indirectly benefit the study participants depending on their HIV status and the need to access ART

Confidentiality – According to Burns and Grove (2019: 201), confidentiality is the researcher's management of private information shared by the participants, which must not be shared with others without the authorisation of the participants. The researcher has ensured no unauthorised access to the data, with access being restricted to the researcher and the supervisor.

Autonomy – This principle refers to an individual making their own informed decision about whether to participate in research or not (Creswell *et al.* 2020: 196). The participants in this study did so voluntarily, and neither the researcher nor the supervisors forced them to participate. When the participant considered it was in the best interest of the subjects, he/she was allowed to withdraw at any point. Participants were also allowed not to answer some questions during the interview process with no repercussions.

Justice – Defined as the ethical obligation to distribute the benefits and burdens of research fairly (Pilot, and Beck 2021: 573). For example, the target population had an equal chance to participate in this study based the fact that individual met the inclusion criteria. Lastly, the researcher has not exploited the vulnerable, nor excluded those who stand to benefit from study participation.

3.8 APPROVAL AND PERMISSION

Prior to the commencement of the recruitment and data collection process, the researcher received full ethical clearance from the IREC (IREC 284/22) and gatekeeper permission from the relevant gatekeeper office at UoT(Appendices A and C).

3.9 DATA COLLECTION PROCESS

The data collection stage is critical to a study's success because it aims to answer the research question (Polit and Beck 2021: 511).

3.9.1 The instrument

The researcher used in-depth individual semi-structured interview as the tool for data collection because it provided the participants with an opportunity to fully describe their experiences. This form of data collection allowed participants to describe their own experiences in their own words rather than being forced to follow the researchers' pre-determined lines of thought. Roberts (2020) and Cypress (2019) state that interviews are the most effective method for exploring and acquiring experiential narrative material that may be used to generate a better and more comprehensive understanding of the phenomenon under investigation. The interview method is considered a valid tool for studying the experiences and perspectives of students, as this method has been utilised in many previous qualitative research studies, for example those conducted by Gani, Imtiaz, Rathakrishnan, and Krishnasamy (2020: 140) and Gupta and Pathania (2021: 846).

3.9.2 Recruitment process

Recruitment is the procedure for locating, selecting, and scheduling qualified participants in research projects or studies (Garavana et al. 2018). The researcher gained participants by means of emails and in-person verbal recruitment through meetings with students. The researcher sent a formal email (Appendix B) to HODs in various departments requesting permission to meet and explain the study to students. This method enabled the researcher to reach all potential participants, especially those who were having questions regarding the study. On this basis, the researcher was granted access to meet in-person with students (potential participants) at the end of the lecture before lunch time to provide information about the project without causing a disruption to teaching and learning. The main aim of such meetings was to sensitise and reach those students who were not aware of the project. All prospective participants including those who indicated no interest to participate were given information letters to read at their leisure. Those who indicated no interest to participate in the study were requested to contact the researcher should they changed their minds.

3.9.3 Preparation for the interview

Prior to interviews, the researcher physically met with the prospective participants who have shown their willingness to participate in the study on a one on one basis either on the same day as the information given session or on a different day. The purpose of contacting these individuals was to establish rapport, clear up any questions, confirm that participants met the inclusion criteria, confirm and obtain consent for participation and audio recording the interviews, agree on interview date, determine choice between face-to-face and virtual interview session and collect demographic data.

Berg, Appelbaum, Lidz, and Parker (2020: 31) defines a consent form as a written document with all information regarding the important, possible risks, and benefits of the project which needs to be signed by a consentee to give his/her official consent to participate in that particular project. Potential participants were informed that signing the consent form meant he/she agreed to participate in this project and also agreed for interviews to be audio recorded throughout. Participants were informed of their rights and responsibilities during the project, and that they had the right to withdraw from the study at any time.

Individuals who chose to be interviewed via Ms-Teams, the researcher agreed with them a date and time. Consent form was sent via email or WhatsApp for the participant to sign and return it any day either through email or WhatsApp but before the interview commenced. Lastly, participants were advised to designate a safe location (campus or residence/home) with good network connectivity and reduced noise during an interview.

3.9.4 Interview process

All interviews were semi-structured. Participants were asked predetermined open-ended questions (Appendix F), followed by probing questions where necessary. The interview guide (Appendix F) was developed to provide an idea of what questions to ask, but the phrasing and order of the questions were not set to ensure that the interview session flowed in a smooth and natural way while remaining semi-structured. Each interview was audio recorded to keep information as it is and field notes were also taken to capture non-verbal cues .To facilitate and encourage participants to talk,

the researcher used communication skills such as reflection, nodding of head, questioning, clarification, and maintaining eye contact. Each interview session was scheduled to take 30-45 minutes, to avoid interviewee discomfort and tiredness. In addition, the participants were informed that the interview will be recorded before it starts.

3.10 DATA ANALYSIS

Data analysis is a rigorous aspect of the research process that occurs concurrently with data collecting in a qualitative study (Polit and Beck 2021: 530). The authors go on to say that the goal of this approach is to find out whether there are any obvious themes or patterns in the data. The analysis data commenced with demographic data analysis. The findings from analysis of demographic data were quantified using simple statistics such as total sums and percentages The descriptive methods helped to describe the current characteristics of the participants, such as age, gender, race/ethnicity, and level of study which also played a critical role when triangulating the findings. Demographic data analysis was followed by thematic analysis of data gathered during the interviews. The Initial step included verbatim transcription of all audio recorded information. Nwali (2021: 16) attest to that verbatim transcription is the art of converting spoken words into text exactly the way were spoken. Subsequently, the researcher employed interpretive thematic analysis in this study to understand data and create themes in relation to the research objectives to write the dissertation so that the reader can understand the findings. Thematic analysis is a qualitative research analysis tool which involves identifying and reporting patterns (themes) within a data corpus (Scharp and Sanders 2018: 118). Braun and Clarke (2006: 87) propose six steps for qualitative data analysis, as follows:

Step 1: ***Become familiar with the data*** – Transcribe the data, read and re-read the data, jotting down key ideas. The researcher familiarised them-self with the entire body of data or data corpus by listening to audio records, and reading and re-reading the transcripts. This was done to get a sense of the whole data, and some ideas were written down as they emerged.

Step 2: ***Generate initial codes*** – The researcher picked one transcript at a time to read and re-read, coding only interesting features of the data in a systematic fashion

across the entire data set, collating data which is relevant to each code. In this way the data was organised in a meaningful and systematic way by coding and reducing it into small chunks of meaning.

Step 3: ***Search for themes*** – The researcher examined the codes, formulated a list of topics, and clustered together similar topics. Thereafter, columns were created to represent main themes, unique themes, and leftovers (i.e. those that fitted into main theme/categories and those that did not fit into either of the categories). According to Gray, Grove and Sutherland (2017: 402), themes are patterns in the data, and/or ideas that are repeated by more than one participant.

Step 4: ***Review themes*** – The researcher checked the themes in relation to the coded extracts and the entire data set, checking if new themes emerged.

Step 5: ***Defining and name themes*** – The researcher identified the 'essence' of what each theme was about. The researcher analysed and grouped together those subthemes that were related to each other and named them in order to reduce the list of themes.

Step 6: ***Locate exemplars*** – The final stage of the analysis was the selection of extracts (verbatim statements) to illustrate the themes. The themes were then discussed in relation to the research objectives and the literature to produce a scholarly report i.e. this dissertation.

3.11 DATA MANAGEMENT AND STORAGE

All information gathered will be stored in such a way that the personal information of the participants is protected throughout. Codes were used to identify participants in field notes and/or audio recordings. Each participant's file or record was assigned a code, downloaded/saved, and kept in a password-protected hard drive and/or computer. In addition, the researcher will submit the thesis in the form of a hard copy and keep the electronic copy in their personal lockable steel closet at home for five years before destroying it. Thus, the electronic copies will be permanently deleted from the hard-drive and the hard copies will be burned.

3.12 RESEARCH RIGOUR

Research rigour is defined as the strength of the research design and the appropriateness of the method to answer the proposed research questions (Polit and Beck 2021; Gray, Grove and Sutherland 2017). Rigour is maintained in qualitative research through trustworthiness in the data collection and analysis process (Creswell *et al.* 2020: 214). Trustworthiness establishes the validity and reliability of the data collected and the analysis process.

3.12.1 Trustworthiness

There are four criteria for developing the trustworthiness of a qualitative study namely, credibility, dependability, confirmability, and transferability:

- **Credibility:** This is the assurance of trust in the accuracy of the facts and their interpretation (Polit and Beck 2021: 559). To maintain the study's credibility the researcher shared the research method and findings with the supervisors who provided insight into variables that the researcher was worried about. In addition, the data was verbatim transcribed in order to retain the participants' real feelings.
- **Dependability**: Dependability is described by the Hornby, Deuter, Bradbery, and Turnbull (2015: 143) as the quality of being able to be counted on or relied upon. To ensure dependability, an audit trail such as voice recordings are being kept by storing the raw data from each interview in a secure location for future reference, for example, the researcher's lockable steel cupboard.
- **Confirmability**: Creswell *et al.* (2020: 262) define conformability as the idea of sustaining data accuracy throughout the stages of the study process without being influenced by the researcher's opinions and prejudices. This was preserved by verbatim transcription of the voice-recorded interviews, with each participant being given a chance to examine his/her transcript. Participants were also allowed to see the final compilation prior to submission at the end of the study, and any identified misconstrued data was corrected.
- **Transferability**: This is the degree to which qualitative data may be generalised (Polit and Beck 2021: 560). To aid transferability, the researcher has provided a clear description of the participant selection, data collection, and data analysis method.

- **Authenticity**: It is an act of being loyal to your own self, participants deals in spite of external temptation to do differentlys (Polit and Beck 2021: 570). The author further states that authenticity emerges in a report when it captures the feeling tone of participants' lives as they are lived. To ensure authenticity, the researcher gave each participant his/her transcription to review to check the transcription. If necessary, the transcript was amended to reflect exactly what the participant meant to say.

3.13 CHAPTER SUMMARY

This chapter has presented a detailed overview of the methodology by providing an outline of the theoretical perspective, research design, sampling techniques, data collection, and data analysis. It also explained why the researcher has used the chosen UoT as a setting and students as participants and has also given the reasons behind the sampling criteria. Chapter 4 presents the study outcomes.

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 INTRODUCTION

Chapter 4 presents the findings arising from the data analysis. The aim of the study was to explore and describe the knowledge, attitude, and practices of students regarding access to ART in a UoT in KZN. The objectives were to determine the current practices regarding accessibility of ART within the UoT, explore and describe students' knowledge regarding the accessibility of ART within a UoT, determine students' attitudes regarding the accessibility of ART, and describe the factors that influence access to ART in a UoT. A qualitative approach was employed to collect data from undergraduate students using one-on-one semi-structured interviews. The study objectives acted as the foundation of the interview guide together with the theory of reasoned action by Fishbein and Ajzen (1975) which was used as the framework that guided the study. The researcher ensured that at least one student from each programme was interviewed before data saturation was reached. However, this was not possible for one programme from which no student agreed to take part in the study (see section 4.5).

4.2 OVERVIEW OF DATA ANALYSIS

Interpretive thematic analysis was used to analyse all the data gathered in the current study except demographic data. According to Scharp and Sanders (2018: 118), interpretive thematic analysis is a common method adopted in qualitative studies to identify, analyse and report patterns from the collected data. As explained by the authors, interpretive thematic analysis allows the researcher to design, organise, and explain data in much richer detail in order to be able to interpret aspects of the research topic thus data was collected via verbal recordings.

All the recordings were transcribed and merged with the corresponding field notes which included mainly non-verbal cues displayed by participants during interviews. The transcribed data was read several times to gain meaning and understanding. Data with similar or comparable information was then assigned codes. Then, the six phases of thematic analysis as described by Scharp and Sanders (2018: 118) were followed.

All data relating to the demographic characteristics of the study participants were analysed quantitatively using simple statistics including sums totals and percentages, to gain a better understanding of this data and for a clear presentation of findings. Polit and Beck (2021) attest to this process being used in qualitative studies and referred to as quantifying/quantitating qualitative data. This allows the researcher to do a deeper analysis of the phenomenon under study (Teddlie and Tashakkori 2009). The findings from this analysis are presented in tables and/or graphs (see section 4.4 sample realization).

4.3 CODING OF THE STUDY SITES AND PARTICIPANTS

All study sites and participants were assigned codes to ensure anonymity and confidentiality throughout the study. The UoT is not called by name in all data collection documents and throughout reporting but is referred to as a UoT. Similarly, the name of the campus is not declared but allocated the code ‘I’. Although the names of the programmes/departments in the selected campus in which the students were registered are declared in selected sections of the dissertation, codes N, E, and C were used to identify these. All study participants were assigned codes from #001 to #020 based on their sequence in the interview schedule. Thus, each participant code reflects the campus code (I), the programme code (N/E/C), and participant numbers (#001 to #020) to protect their personal information and to easily identify their contribution to the study. For example, the first participant from nursing (IN: #001), the second from civil engineering (IC: #002), and the third from education (IE: #003) up to the last participant. Table 4.1 shows the allocations of codes as there were used in the study:

Table 4.1: Allocation of codes

DATA ELEMENT	ASSIGNED CODE/s
UoT	UoT
Campus	I
Programmes/Departments	N, E and C,
Participants	#001- #020
Example of Complete code	IC: #003

4.4 SAMPLE REALISATION

The focal point of this study was a UoT in KZN and students registered in any of the undergraduate programmes. One UoT from KZN with a total of seven campuses was selected. One campus was included in the study. This campus was selected because it housed students from four different departments that offered undergraduate programmes. The Departments included Nursing, Civil Engineering, Education, and Information Technology out of which three departments were included. The one department that was not included was not purposefully excluded but no students from this department agreed to take part in the study.

On receipt of ethical clearance (IREC 284/22) (Appendix A) from the institution, and permission from relevant gatekeeper offices which included the Institutional Gatekeeper office, and HODs (Appendix B and Appendix C), the researcher personally visited classrooms to make an open invitation to those individuals who met the inclusion criteria to participate in the study. More than 30 students indicated their willingness to participate in the study and were screened for eligibility. Twenty-five of them met the inclusion criteria of being undergraduate students at the selected UoT, at least for a minimum of 6 months, and aged between 18 and 35 years old. Interviews were conducted with 20 participants over a period of eight weeks based on individual availability. Six interviews were conducted face-to-face in a private study room at the campus library, while the other 14 interviews were via MS Teams for the convenience of participants. The data saturation point was reached after the 17th interview where the researcher noticed that participants were giving the same information. Nevertheless, the researcher went on and conducted three more interviews for

confirmation of the data saturation. Thus, 20 interviews were conducted for the etire study. Table 4.2 presents the sample realisation for the current study.

Table 4.2: Sample realisation

Study Site	Program	Number of interviews								
UOT		Till data saturation			To confirm data saturation			Total conducted		
		Face to face	Online	Total	Face to face	Online	Total	Face to face	Online	Total
	N	2	10	12	1	0	1	**3**	**10**	**13**
	E	1	3	4	1	0	1	**2**	**3**	**5**
	C	1	0	1	0	1	1	**1**	**1**	**2**
TOTAL	**3**	**4**	**13**	**17**	**2**	**1**	**3**	**6**	**14**	**20**

4.5 PARTICIPANTS' DEMOGRAPHICAL DETAILS

The demographic data show that the majority (19 participants) of participants were aged between 18 and 25 years, and only one was aged between 26 and 35 years. The female gender was in the majority with 15 participants and there were five male participants. Eighteen of 20 participants were African and the other two participants were Indians. At least four participants had been in the UoT for more than 36 months, 13 for 13-24 months, and three for 25-36 months. Three of the 20 participants were living at home, one in private accommodation, and 16 in different university residences. The university residences were not identified by names to protect the participants' traceability.

In terms of HIV status, 16 of the participants were aware of their HIV status while four had never tested for HIV. Nine of the 16 participants aware of their HIV status were tested at the campus clinic while seven tested elsewhere. The HIV statuses of these participants are not included in this study as a measure of protecting their identities and dignity. Table 4.3 presents findings on analysis of participants; and demographic details.

Table 4.3: Participants demographic data

GENERAL ASPECT	NUMBER OF PARTICIPANTS				
AGE	18-25	26-35	36-45	46+	Total
	19	01	Nil	Nil	20
GENDER		MALES	FEMALES		Total
		05	15		20
ETHIC GROUP	AFRICAN	WHITE	INDIAN	OTHER	Total
	18	Nil	02	Nil	20
PERIOD IN MONTHS AT UoT	6-12	13-24	25-36	36+	Total
		13	03	04	20
ACCOMMODATION	RES	PA	HOME		Total
	16	01	03		20
HIV STATUS		KNOWN	UNKNOWN		Total
		16	04		20
WHERE TESTED FOR HIV	CAMPUS	ELSE WHERE	N/A		Total
	09	07	04		20

Key: PA= Private accommodation; Res= Student residence; N/A =Not applicable

4.5.1 Distribution of participants between programmes in the selected campus

Figure 4.1 shows that the majority of the participants in the study were from the Department of Nursing (n = 13: 65%), followed by the Department of Education (n = 5: 25%), and the Department of Civil Engineering (n = 2: 10%).

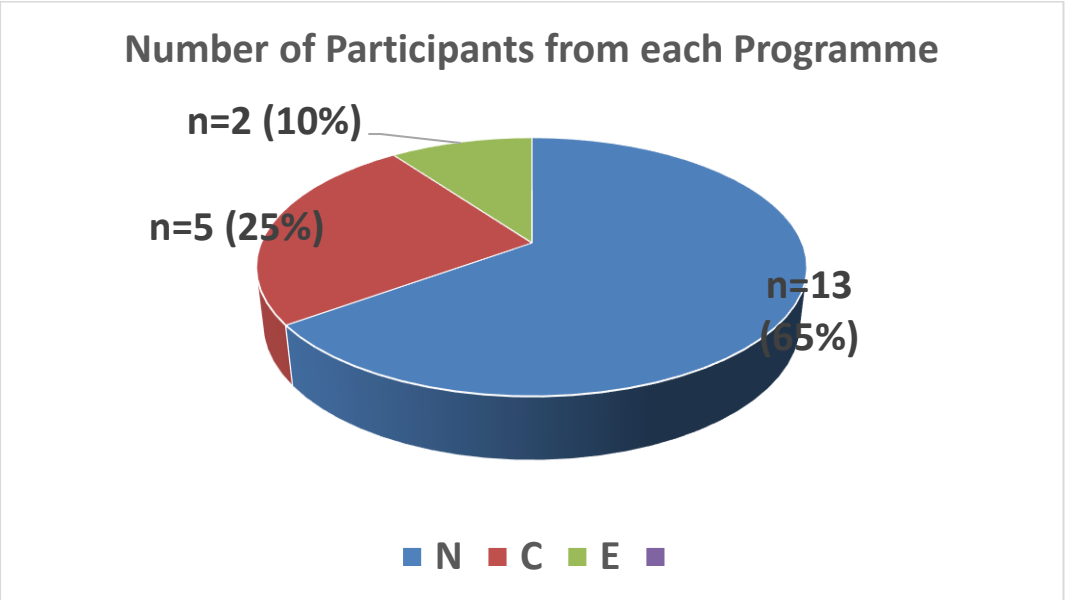

Figure 4.1: Presentation of participants from different programmes

4.6 THEMES DRAWN FROM THE FINDINGS

The study uncovered five themes, namely: Current practices regarding accessing ART; Knowledge regarding access to ART in the UoT; Access points for ART; Attitude and willingness to access ART in a UoT; and Factors that influence access to ART. Several sub-themes emerged in line with each of these themes. The majority of themes and sub-themes were interrelated thus some are discussed together. Table 4.4 presents the themes and sub-themes that emerged from data analysis.

Table 4.4: Presentation of themes, sub-themes, and categories

MAJOR THEMES	SUBTHEMES
1. Current Practices regarding accessing ART	1.1 UoT practices 1.2 Campus clinic practices 1.3 Student practices
2. Knowledge regarding access to ART in the UoT.	2.1 Source of Student Knowledge. 2.2 Adequacy of knowledge 2.3 Misconception regarding access to ART 2.4 Involvement of UoT in knowledge sharing information regarding access to ART
3. Access points for ART.	3.1 Awareness of the UoT and alternative points 3.2 Feasibility of using these points 3.3 Challenges encountered. 3.4 Student Preference Regarding Access Points for ART
4. Attitude and perception	4.1 Attitude and perception regarding the ART programme 4.2 Attitude and perception regarding access point 4.3 Personal choices/preferences. 4.4 Past experiences. 4.5 Involuntary disclosure of HIV status
5. Factors that influence access to ART	5.1 Existing Factors Influencing Access to ART 5.2 Factors that could facilitate improved access

4.6.1 THEME 1: CURRENT PRACTICES REGARDING ACCESSING ART

The findings from data analysis reflected that current practices influenced student access to ART. The three sub-themes that emerged related to the current practices included UoT practices, campus clinic practices, and student practices. Some of the practices facilitated access while others hindered access to ART.

4.6.1.1 Sub-theme 1.1: UoT practices

It was evident from the participants that selected practices performed or not by the UoT affected student access to ART. The participants verbalised that information about the campus clinic and where students can access various healthcare services was included during the orientation of new students. Thus, all students were aware of the availability of a campus clinic. Nonetheless, the participants complained that the structure of the programmes and lecture schedules did not allow them time to visit the campus clinic. This was evident in the following excerpts from participants:

> … since UoT does not provide ART I think that also does affect students, because I once worked (during my clinical practices) in a public clinic, which opens 24 hours a day. Noticeably, the ARV side within the clinic was only operating from Monday to Friday, 08h00 to 16h00. Commonly during the forename times, students are having classes, which mean they have to miss classes/lecturers in order to get their treatment. Therefore, the current system does not cater to university students thus this age group is the most infected by HIV. (IN: #012)

> I've been visiting the campus clinic numerous times, but when I ask to test they do not have a nurse doing HIV testing. Sadly, this is one of the most important aspects of life for every individual and it was mentioned available at the clinic during the orientation. Unfortunately, this semester I've never been there because I am overwhelmed by school work and my lecturers clashes with the clinic operating hours (IC: #018).

4.6.1.2 Sub-theme 1.2: Campus clinic practices

The participants indicated that selected practices performed or missed by the UoT campus clinic affected student access to ART. The participants were concerned that they were not aware of the package of services available at the campus clinic and they only get to know about whether the service is available or not when they visit the campus clinic. According to them, this creates a lot of inconvenience for the students and wastes time when students miss lectures to go to the clinic only to be told that the service that they are looking for is not offered.

A number of participants commended some staff members in the campus clinic for providing information and directing them to where they can access healthcare services

that are not available in the campus clinic including ART. The following are a few examples of the statements by the participants in this regard.

> I was approached by two ladies within the campus, and I think they were coming from TB/HIV care, promoting PrEP. They explained to me what PrEP is, who can take, and how to take PrEP. They went further and told me that if I test positive for HIV they will refer me to the nearby public clinic to start ART because both themselves and the campus clinic do not provide ART. (IN: #003)

> Every time I go there (campus clinic) to test for HIV they always tell me that they don't have a person doing HIV testing, so I always end up tested by the TB/HIV care van, commonly parked outside the campus clinic building (IC: #010)

4.6.1.3 Sub-theme 1.3: Student practices

The participants shared that some of the practices by the students themselves influenced access to ART. Most of these practices are influenced by students' attitudes, perceptions, and knowledge regarding access to ART and thus will be discussed further in these sections. The practices of the students were also related to individual experiences and health-seeking behaviours. The participants verbalised that often students are not keen to go to the clinics unless they are very sick.

The participants also verbalised that most students are usually very secretive and where information is not readily available to them they will not enquire and they will also shy away from going to public spaces such as the campus clinic due to fear of disclosure. This was evident in the following statements from some of the participants:

> … Going to campus clinic I might run into or encounter someone I know or a peer, then he/she would want to know what am I doing here (clinic). (IN: #004)

> Yes, knowing one's HIV status is a good thing and some people do start ART immediately after finding out that they are indeed HIV-positive but not everyone. They are people who know that they are HIV positive but choose not to take ART due to lack of information i.e. relocation and he/she does not know where to get ART; fear of being stigmatised by peers, families, and/or healthcare providers at the clinic, and, lastly denial. (IN: #016)

4.6.2 THEME 2: KNOWLEDGE REGARDING ACCESS TO ART IN THE UOT

The second theme that emerged was knowledge regarding access to ART. The sub-themes related to knowledge included the source of student knowledge, misconception regarding access to ART, and involvement of the UoT in knowledge sharing regarding access to ART. All participants agreed that they had been exposed to HIV/AIDs education including ART. However, the extent of exposure varied from student to student. Some participants had formal HIV/AIDs education included in their training programmes, while others gained knowledge through non-formal programmes or searching for the information on their own, out of curiosity and interest. The following sub-themes further expand this theme.

4.6.2.1 Sub-theme 2.1: Source of student knowledge

A number of participants shared information about sources of information regarding where and how they can access ART. Their level of education, past experiences, and exposure was regarded as having influenced their knowledge about ART and access to ART. The common sources of knowledge listed by the participants included the UoT, peers, media, the internet, and community education programmes to name just a few. However, participants also verbalised that some of these sources were reliable and others were not. This was evident in the following statements by some participants:

> I used to receive an email inviting all students to attend webinars or programmes hosted by campus clinics or health sector where they teach students about HIV and order diseases. Number two the campus clinics do provide students with HIV testing and counselling on site even though I've never tested at a campus clinic but I know that the campus clinic does provide HIV testing and there is a place called the HIV centre which also supports students in different health aspect i.e. accepting one's HIV status, adherence, health behaviours and/or the holistic wellbeing of a student. Lastly, as peer-educators, we host dialogues with students where we discuss health-related issues, provide support and relevant information to empower others. (IC: #010)

> I am a nursing student, is something we are taught about it as part of our academic package. Nevertheless, HIV is still a hot topic on media platforms, so some of the information I got from there but not all information can be reliable especially the one from social media. Therefore, it always important for me to verify such information

> either by checking from my books, and consult with a lecturer or the supervisor at the clinic I am placed at the time. (IN: #013)

4.6.2.2 Sub-theme 2.2: Adequacy of knowledge

The extent of knowledge regarding access to ART was noted to be different from participant to participant. A number of participants declared that they had sufficient knowledge regarding where and how to access art. However, others declared that although they had some knowledge about access to ART, they felt the knowledge that they had was not enough. There were a few who stated that they had no clue at all particularly regarding access to ART within the UoT. A few participants indicated that they had never been told or read about access to art by neither the institution nor official websites or pamphlets. The following are quotes from participant illustrate these points:

> No, I don't think the UoT does provide ART in their campus clinic because I know students who collect ART from public clinics around the campus, and a friend of mine she's still collecting ART at home. (IN: #003)

> No, I really don't know anything about clinic providing ART. The only thing I know is that the campus clinic does provide students with condoms, PrEP, and HIV counselling and testing. (IN: #006)

> I have no idea because I've never been to the campus clinic. But I'm thinking the campus clinic does not provide students with ART because last year I had a roommate who was on ART and whenever she ran out of stock she had to travel back home for medication (IC: #010)

4.6.2.3 Sub-theme 2.3: Misconceptions regarding access to ART

The researcher noted several misconceptions in the information provided by the participants regarding access to ART and HIV/AIDS management in general. The one misconception that was dominant in the majority of the participants was that the UoT under study do provide ART services. A few students mentioned that because there was a campus clinic all clinic services should be available. Some based it on the fact that because HIV testing was done in the campus clinic therefore ART would be available at the UoT as part of HIV management. Others stated that all other higher

education institutions with campus clinics were providing the services so the same applied in this UoT. The following are some of the quotations from the participants:

> … I think the campus clinic does provide ART to students since it does prove HIV testing and counselling (IN: #001)

> I know an HIV positive student can access ART at Harry Gwala clinic, Edendale hospital, Imbalenhle clinic, and DUT campus clinic. (IE: #005)

> I think they do access it from the campus clinic although some still prefer the public clinic. Yes, I'm not too sure about the campus clinic but the public clinic I'm very positive because I've already seen some of the students coming for their treatment even though they were shy when they were assisted by us nursing students (IN: #013)

4.6.2.4 Sub-theme 2.4: Involvement of UoT in knowledge sharing regarding access to ART

The participants had differing views regarding the role of the UoT and its actual involvement in sharing knowledge with students regarding access to ART. Some participants stated that it was the UoT's role and responsibility to inform students about access to ART while others stated otherwise. Similarly, some participants stated the UoT was involved in knowledge sharing while others disputed this. The majority of the participants attested that information about access to ART was included as part of the orientation programme in the UoT. A few participants stated that they were not sure about the involvement of UoT in knowledge sharing but they themselves had never received any information from the UoT regarding access to ART.

> I think, the most important thing is to ensure that the campus clinics do provide ART. Secondly, they should advertise services offered by the clinic through institutional socials such as Facebook, and pin board, to mention the least. Thirdly, they should invite a speaker from the clinic to reach as many students as possible during events i.e. orientation, sports days, and any other forms of event that take place on-campus. Lastly, they should have ads, pamphlets, and any form of advertisement to ensure that students are aware of services offered within the Out. (IN: #011)

> You know, I'm not a sickie person. Yes, I do know there is a clinic opposite the old library and I usually see students going there but I've never went. I don't know what services they provide as a clinic and what not. (IE: #019)

4.6.3 THEME 3: ACCESS POINTS FOR ART

Another theme that emerged was related to access points for ART. The discussion around the access points was regarding awareness of the UoT and alternative access points. The discussion was also centred on the feasibility of using these points, the challenges encountered, and students' preferences regarding access points for ART. Thus, the four sub-themes were the awareness of the UoT and alternative points, the feasibility of using these points, the challenges encountered, and students' preference regarding access points for ART.

4.6.3.1 Sub-theme 3.1: Awareness of the UoT and alternative points

The participants shared information regarding awareness of access points for ART. Almost all participants were aware of government-owned local access points for ART hospitals and clinics. However, they were referring to private institutions and private doctors as an alternative access point for ART because not all students were able to collect from these private facilities due to cost factors. In addition, almost all participants were aware of other alternative access points for ART such as pharmacies that are working in partnership with the Department of Health as ART distribution points. This was evident in the following statements from some of the participants:

> I know that an HIV positive person can go to clinic, or hospital, around the campus to access ART for free. (IN: #002)
>
> They go to the surrounding public clinic or hospital while others prefer to access their medication in pharmacy such as Clicks (IE: #007)
>
> I know that campus clinic transfers all HIV positive students to the nearby public clinic for ART because the campus clinic does not provide this medication. (IN: #014)
>
> What I know is that ART is completely accessible at the public clinics or hospitals around the campus, so it does not necessarily need to be in the form of any medical aid system and go to private hospital. Yes, those students that can afford they do access ART from pharmacies such as Clicks or disc-harm (IE: #016).
>
> I think most students collect their medication from Clicks or Dis-Chem pharmacies because that could be more convenience for a student. Long lines and stigma in public clinics can be too much for students and maybe end-up defaulting the medication. (IN: #017).

4.6.3.2 Sub-theme 3.2: Feasibility of using these points

The participants shared their views regarding the feasibility of using these ART access points. They mentioned that some points were easy to access while others were difficult to access. The participants stated that although the public/government-owned institutions were commonly cheap, usually free, and easily accessible, they were not comfortable to use those facilities because of long waiting times, quality of service and overcrowding. Also, the operating times for public institutions made it unfeasible for them to use these institutions without absenting themselves from lectures. The private institutions and private doctors were not feasible to use because these are too expensive and most students are from disadvantaged communities and do not have medical aid cover. Some of the participants stated that students are not comfortable being seen in public institutions queuing in ART clinics because of the stigma attached to HIV and AIDS. The following are some of the quotes from the participants:

> … I think campus clinic would be more convenience then public clinic in terms of waiting times, because to get into the closest public clinic from where I am currently staying I would have to take at least two taxis. That clinic is commonly overcrowded and is having a history of poor service delivery while private hospitals/doctors and pharmacies are too expensive and most of us on campus we are coming from disadvantaged families. (IN: #003)

> The university will have to provide a quick intervention to ensure that campus clinics do provide ART because numerous times students are being robbed outside the campus on their way to Imbalenhle clinic as such they end-up spending so much money on Ubers to and from the clinic. Going to government clinic can also affect their academic performance negatively as they have to miss lecturers in order to make up their appointments for ART. (IN: #006)

> … Government/public clinics are always full. In order to access ART, the student will have to wait in long queues almost the whole day, which means he/she would be missing lectures on the day of collecting treatment. Furthermore, the student can even meet with homies which can make him/her feel very uncomfortable. (IC: #010)

4.6.3.3 Sub-theme 3.3: Challenges encountered

The participants highlighted a number of challenges that were often encountered by students in accessing ART. The common challenges mentioned by the majority of the

participants included healthcare institution operating days and times coinciding with the university schedule, the attitude of healthcare workers, long waiting times in public institutions, busy university schedules, and cost implications if opting for private institutions to name just a few. The following are some of the quotations from the participants:

> Public clinics are always full. In order to access ART, the student will have to wait in long queues almost whole day, which means he/she would be missing lectures on the day of collecting treatment. Furthermore, in public clinics a student can even meet with homies which can make him/her very uncomfortable. (IC: #010)

> … campus clinic can be much more convenient for me in terms of time since I commonly have back-to-back lectures on weekdays so might not get time for going to a public clinic. Secondly, might save on travelling costs to and from public clinics. Lastly, staff in the public clinic have a negative attitude toward young people especially students because they believe every HIV-positive student contracted HIV while at the university whereby that not always the case and a stigma from the society. (IN: #017)

4.6.3.4 Sub-theme 3.4: Student preference regarding access points for ART

Participants indicated that a variety of options regarding where and how to access ART should be made available to students. This would take care of student preference regarding access points for ART and thus initiation and adherence to ART. The existing situation at the UoT did not allow that as the ART was not accessible in the campus clinic. This was evident in the following statements from some of the participants:

> I would prefer to collect it from a public clinic back home because I believe there will be less discrimination than on campus but I know others might have different thoughts. Therefore, it is a university duty to ensure that ART is available at campus clinic to give the option for students to choose where they would like to collect their medication (IE: #007)

> To be honest with you I would prefer to take it from the campus clinic. I think that could make my life easier especially when it comes to class attendance and saving money for transport going to the public clinic every month. And I don't even understand why campus clinic doesn't provide ART but do provide HIV testing and counselling. (IN: #009)

> I would definitely prefer the campus clinic because it would save me money to go to and from public clinics, secondly would give much time to focus on my studies rather than being worried about long queues and discrimination in public clinics. Lastly it would make it easier for me not missing my clinic appointments while I'm also able to attend lecturers. (IN: #015)

4.6.4 THEME 4: ATTITUDE AND PERCEPTION

Attitudes and perceptions of participants emerged as another theme. It was evidenced from the discussion with participants that attitudes and perceptions of students regarding HIV and AIDs infection, the ART programme, the access point to use, students' personal choices or preferences, and past experiences influenced the students' decision to access ART. These inform whether the student makes an effort to access ART and which access point the student uses to access ART. Thus, the four sub-themes related to attitudes and perceptions included: attitude and perception regarding HIV/AIDS infection and ART programme, attitudes and perceptions regarding access points, personal choices/preferences, and students' past experiences.

4.6.4.1 Sub-theme 4.1: Attitude and perception towards HIV /AID infection and ART programme

The participants who displayed positive attitudes and perceptions towards HIV/AIDS infection and ART programme appeared to be well-informed about access to ART and where to access ART compared to those who had negative attitudes and perceptions. The latter had less knowledge about where and how to access ART. The following are some of the quotes from the participants:

> I feel like I would consider going with ART, because it is the one that I have commonly heard of and as a student nurse in particular ART is the only thing I can trust. So, I don't think there will be a doubt in my mind about deciding to go with ART. (IN: #004)

> I would definitely consider the ART, because is the only available option that has been scientifically proven effectively on managing HIV/AIDS. And I have also eye witnesses a number of HIV positive people living their normal life without being bothered by illnesses while on ART (IN: #015)

> I preach what I practice, therefore I will never hesitate to access ART if I need to because as it is the only available method I am aware of. And the good thing is that if you take this medication correctly the viral load becomes suppressed and that reduces chances to transmit the virus to another person. (IN: #020)

4.6.4.2 Sub-theme 4.2: Attitude and perception regarding access point

The participants were not happy that the UoT neither provided ART services nor had a formalised referral route to public healthcare institutions for students. The participants attested that although there were no formalised referral routes, the campus clinic staff would refer the students to local access points. However, participants had some negative attitudes about this process stating that it would be more convenient for students to be fully managed in the campus clinics because of the inconvenience of needing to travel elsewhere to access ART. This was evident in the following statements from some of the participants:

> … I think having ART accessible or available in the UoT is a good idea and it is a safe way for students to regularly have access to it whenever they need it. With that alone, I believe that adherence to medication can be improved especially among our generation. (IN: #004)

> … going to a public clinic or hospital for ART might require a lot of time and money for transport, sometimes a student can even miss lecturers. At the campus clinic the student can be able to consult even during his/her lunchtime without paying anything or missing any class. (IE: #008)

4.6.4.3 Sub-theme 4.3: Personal choices/preferences

It was evident that while some participants indicated that if they were to require ART they would prefer to use the campus clinics, others stated that they would prefer to use sites outside the UoT. A number of participants indicated that more than one option should be made available and known to students to accommodate personal choices and preferences. The following are some of the quotations from the participants:

> I think it a good thing, because students would have an option of not going to public clinics for treatment maybe ending up missing classes or lectures. (IN: #002)

> I think it have bad effect, because the was a time whereby my roommate have to travel back home in order for her to get ART but if the campus clinic was providing ART she would have just go there and get her medication from the campus clinic (IC: #010)

4.6.4.4 Sub-theme 4.4: Past experiences

The participants were not required to declare their HIV status and whether they had personally accessed ART or not. Thus, none of the participants commented on personal experiences in accessing ART but most of them referred to their past experiences with accessing health care services in general and/or experiences of other persons close to them such as a friend or family member. A number of participants stated that, based on their past experience in public health institutions, they would prefer to access ART from the campus clinic. According to these participants, the logistics of accessing ART off-campus are too complex and are often the reason for the majority of the students not initiating ART or defaulting on ART. Similar to the statements related to personal choices/preferences, some participants stated that from their past experiences with access to health care services, access to ART could be facilitated through having more than one access point. These were evident in the following statements by some of the participants:

> I have an HIV-positive sibling and she is on ART. Initially, I was very scared of her but now we are good since I understand the transmission of HIV and the benefit of taking ART, but before I thought that sitting around her or sharing items like cups was going to infect me with HIV. (IN: #003)

> I would consider taking ART because I have seen a number of people on ART and still living their best life without being bothered by regular illnesses. (IE: #007)

> I would consider taking ART, because I have seen so many people during clinical placement coming for ART and most of them you cannot even tell that they are HIV positive because they taking ART. So that is why I would definitely take ART. (IN: #011)

> For what I have seen from my roommate, I would consider taking ART because the way she was. She was so beautiful you were not even going to able to see that she was on ART/ HIV positive. We only knew because she told us and wow she was brave, not even offended where we reminding her to take her medication. (IC: #010).

4.6.4.5 Sub-theme 4.5: Involuntary disclosure of HIV status

The majority of the participants who indicated that they were not comfortable to access ART in a UoT were concerned about involuntary disclosure of HIV status which they stated could happen with peers meeting them when attending the campus clinic or with the campus clinic staff failing to maintain confidentiality. These participants were concerned about their privacy and how disclosure of their HIV status would impact on their acceptance by peers. This was evident in the following statements from some of the participants:

> I would definitely access ART but in public clinic not on campus clinic, because that would be just an extra layer of some protection to peers and there is less likelihood of running into somebody that I know, while if going to campus clinic it is possible to encounter with a peer or someone that may want to know what I'm going to the clinic for. (IE: #005)

> I would definitely consider taking ART at the campus clinic, because the will be no time whereby I would have to miss lecturers just for collecting treatment in public clinic. Imagine writing an email every month reporting to the lecturer that I am not attending classes because I have an appointment at clinic, as such the lecturer might ended-up knowing my HIV status. Furthermore, the transport cost to and from clinic will be too much for me as a student depending on parents for financial support. (IE: #019)

4.6.5 THEME 5: FACTORS THAT INFLUENCES ACCESS TO ART

It was evident from the study findings that several factors influence accesses to ART some in a positive and others in a negative way. Two sub-themes emerged in line with factors influencing access to ART. These included existing factors influencing access to ART and factors that could facilitate improved access.

4.6.5.1 Sub-theme 5.1: Existing factors influencing access to ART

The study participants highlighted several existing factors that were influencing access to ART at the time of the study. The majority of these have been discussed as part of the other themes and sub-themes that emerged from the study, thus will not be repeated here. These included practices that prevailed in the UoT and campus clinic at the time of the study, knowledge of the students regarding access to ART, access points for ART, and attitude and perceptions of students. These factors included both

the factors that had positive and those with negative influence on student access to ART. This was evident in the following excerpts by some of the participants:

> … I know that campus clinic do provide testing and there is a place called HIV Centre which also support students in different health aspect i.e. accepting one's HIV status, adherence, health behaviours and/or the holistically wellbeing of a student. Lastly, as a peer-educator we host dialogues with students where we discuss health related issues, provide support and relevant information to empower others. (IC: #010)

> I think it because ART is free with reduced side effects. Secondly, there is a universal access policy which allows people on chronic to continue getting their medication even if they have relocated from one place to another as long they come with the referral latter from previous clinic. Which I think it a good move because it improves treatment adherence. (IN: #013)

4.6.5.2 Sub-theme 5.2: Factors that could facilitate improved access

The study participants highlighted several factors that in their opinion could facilitate improved access. The majority of these factors were similar to those that were highlighted to be currently influencing ART with some recommendations of improvement in areas where negative influences were noted in current practices. For example: The campus clinic was noted to be not providing ART services and also not having a formalised referral system to alternative ART sites. The participants recommended that the campus consider providing these services and having formalised referral routes. The following are some of the quotation from the participants:

> Campus clinics to provide ART will be a good move because as students we spend most of our time on campuses, from Monday to Friday. Hence, most universities have campus clinics which are equivalent to primary health care (PHC) sector or community clinics, indeed we are a community as a university. So, the UoT should provide services which are regarded as first priority to students i.e. ART, STI treatment and family planning methods. If one of these services is not available that means the lives of students are at risk within the institution. (IE: #016).

> I think they should ensure that all identified HIV positive students are linked to student counselling for support. Secondly, the campus clinic should have partnered with non-governmental organization (NGOs) that can come on campus to provide ART as they

did on PrEP or partner with one local clinic where all students can be referred to for treatment. Last not least, it is very important for campus clinic to provide ART to ensure that students have easily access to treatment. (IC: #018).

4.7 FUTHER ANALYSIS OF FINDINGS

Further analysis included comparison between selected charecteristics and the study findings where feasible to better understand the study findings. This cross analysis was mostly between demographic characteristics of the study participants and the themes that emerged from the findings.

4.7.1 Awareness about alternative sites to access ART and awareness of HIV status

The findings showed that four out of the 20 participants were not aware of their HIV status. The findings indicated that all participants were aware of the public sites where to access ART although a few were not aware of alternative sites. These findings indicate that even the participants that had never tested for HIV were aware of the sites where to access ART.

4.7.2 Attitudes and gender of the study participants

The findings indicated that all male participants had a positive attitude towards accessing ART in a UoT, while a few female participants showed a negative attitude towards access ART in a UoT. Nevertheless, this cross check finding could be due to the gender ratio among the participants. This differing attitude was evident in the following excerpts from male and female participants.

> I would consider ART because it the only available treatment and it have been proven to be effective in the past years in term of managing, even though it does not treat the HIV. If we can look back the evolution of ART, in early 2000 an HIV person was taking a number of pills at least three times a day but now a person can take only one pill once a day. And if he/she adhere and become viral suppressed, that person have reduced chances to transmit the virus to partner or unborn baby. (IN: #020)

> Wow, that could be the worse day but one thing for sure I will start treatment as soon as I find-out, because I believe doing so will help me to long and health life. (IE: #019)

Some female participants showed a negative attitude towards accessing ART:

> I would personal consider taking the traditional remedies, because it what I believe on and I think it can do even better than ART in terms of managing HIV. Again, with ART it got lot of side effect (IN: #011)

4.7.3 Willingness to access ART in a UoT and gender of the study participants

The findings indicated that all male participants were willing to access ART in a UoT, while some of the female participants were reluctant to access ART in a UoT. This cross check finding may be due to the gender ratio among the participants. Willingness to access ART was evident in the following excerpts from male participants:

> Definitely the campus clinic can be more convenience for me, because I have classes to attend from Monday to Friday, so it can be easier for me to just collect my medication maybe during the break time while I'm still on-campus. (IE: #016)

> I would say from campus clinic, because it can be much convenience for me in term of time since I am commonly having back-to-back lecturers on week days so might not get time for going to public clinic. Secondly, might be saving on travelling cost to and from public clinic. Lastly, staff in public clinic have negative attitude toward young people especially students because they believe every HIV positive student contracted HIV while at the university whereby that not always a case. (IN: #017)

Reluctance to access ART from the UoT was evident in the following excerpts from female participants:

> I would definitely go to the clinic not the one in campus, because that would be just an extra layer of some protection to peers and there is less likelihood of running into somebody that I going to encounter because it possible that if I go to the campus clinic that I will run into someone that may want to know what I'm going to the clinic for. If I'm HIV positive and I live at home I don't think I would go to the clinic campus, it would be probably another clinic. (IN: #004)

> I would say somewhere else, but not on campus clinic. I feel as if once students know that campus clinic do provide ART, every person going to the clinic will be judged and that could negatively affect those people who are really in need of ART. Whereas, it much convenience for an HIV positive person to access ART privately where there is no peers around because some students are still not able to accept people living with HIV. (IE: #005)

4.8 CONCLUSIONS DRAWN FROM DATA ANALYSIS FINDINGS

The researcher used the study's questions and the elements of the theoretical framework to better understand the findings of the data analysis. The research questions were:

- What are the current practices of students from a UoT in accessing ART services?
- What is the level of knowledge of students regarding the accessibility of ART within a UoT in KZN?
- What are students' attitudes regarding the accessibility of ART within a UoT in KZN?
- What strategies could enhance access to ART by students from UoTs in KZN?

The findings were grouped into two broad categories in line with the first and the last objectives which were:

A. Existing factors influencing access to ART.
B. Factors that could facilitate improved access to ART.

The analysis revealed that a triad of sources (provider, institution, and students) were responsible factors in both these categories. Thus, the factors were grouped as provider related, institutional related, and student related. These factors either influenced the current access or could facilitate improved access to ART. The factors in both categories were mostly related to practices, knowledge and attitudes.

Practices: The practices of all three in the triad (service provider, institution and students) either influenced the current practices regarding access or could facilitate improved access to ART. The themes related to the practices included safety within the UoT, activities within UoT facilitating access to ART, structure of programmes in the Out, and campus clinic operations.

Knowledge: The findings revealed that knowledge of students influenced the current access to ART and could also facilitate improved access to ART. The themes related to knowledge included source of knowledge, misconception regarding access to ART, awareness regarding where to access ART, and involvement of UoT in knowledge sharing.

Attitudes: The findings revealed that attitudes of students towards ART influenced the current access to ART and could also facilitate improved access to ART. The themes related to attitudes included personal choices/preferences, individual experiences and stigma associated with ART. Figure 4.2 presents a summary of conclusions drawn from the analysis and interpretation of study findings.

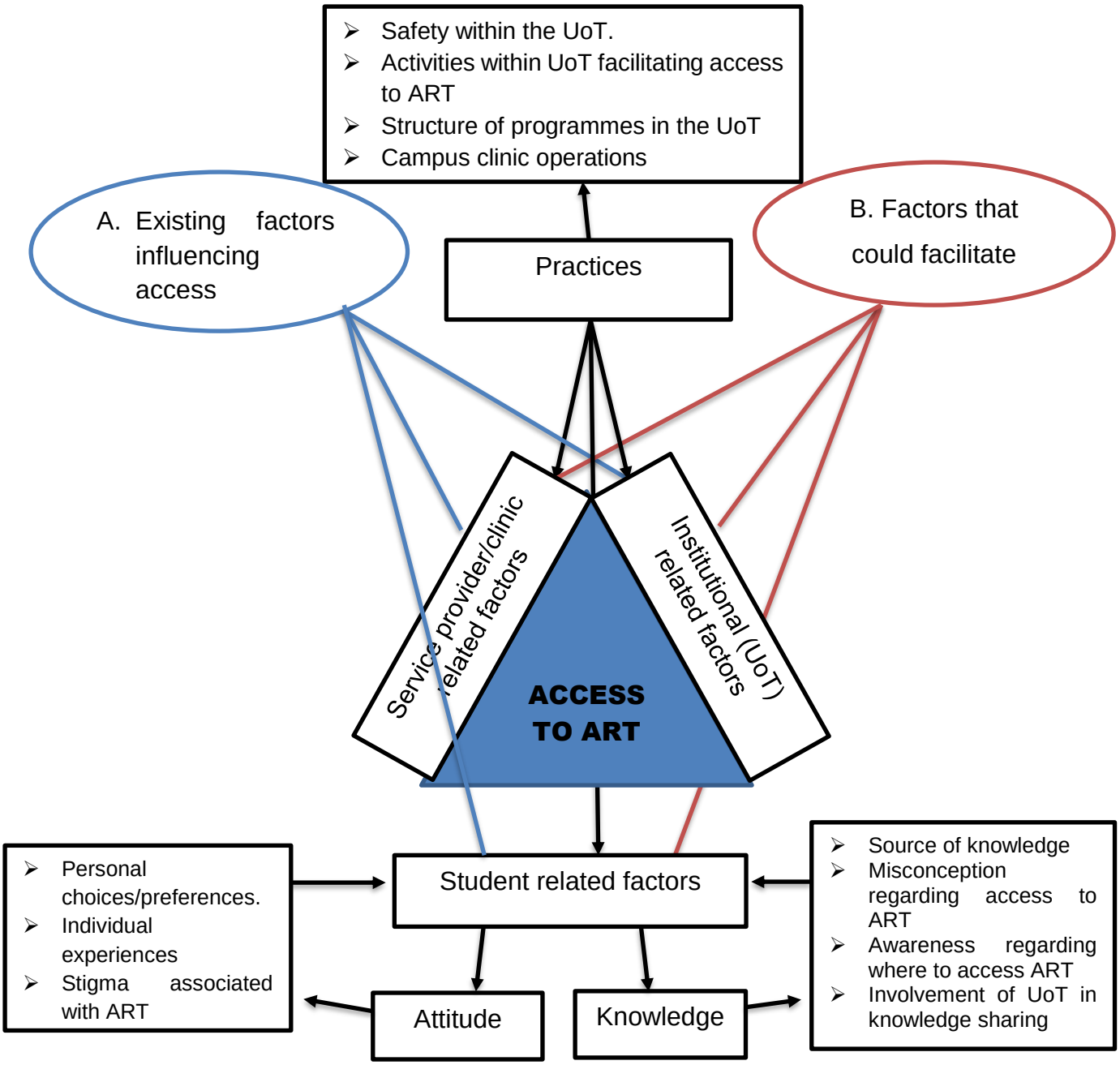

Figure 4.2: Schematic presentation of conclusions drawn from analysis and interpretation of study findings

4.9 CHAPTER SUMMARY

This chapter has presented the results of data analysis which include the participant's biographical details, and the themes of the study. A total of 20 participants in this study managed to respond to the research instrument and the study uncovered four themes. Themes that emerged from the data were analysed in line with objectives. The next chapter covers the discussions and limitations of the study.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This chapter is the continuation of six steps of thematic data analysis, with five steps already having been discussed in Chapters 3 and 4, namely: Becoming familiar with the data, generating initial codes, searching for themes, and reviewing themes. Here, the researcher discusses findings from data analysis; and compares and contrasts them with relevant literature. However, there was a limited source of related literature since there is a lack of studies regarding access of ART by students. Knowledge, attitude and practice of students around access to ART is a field that has not been studied before. This chapter also discusses the five major themes that emerged in Chapter 4.

5.2 DEMOGRAPHIC CHARACTERISTICS OF THE STUDY PARTICIPANTS

The predominant age group for the study participants was 18-25 years of age (95%). These findings correspond with the demographic trends in most HEIs, including UoTs. It is common that the HEI student population comprises mostly students above 18 years of age, with the predominant age groups in the undergraduate programmes being 18-25 years (DHET 2021).

The female gender was in the majority with 15 participants, with five males. In addition, 18 of the 20 participants were African and the other two participants were Indians. Again, these findings concur with the report by the Republic of South Africa: Higher Education and Training (2021) which showed that the highest proportion of students enrolled in public HEIs in 2019 were females (59.6%) and over three-quarters of students were Africans (77.3%).

Oppong and Oti-Boadi (2013) reported that female students, with a prevalence of 4.7%, were three times more likely to be HIV-positive than their male counterparts at 1.5%, despite the finding that it was more acceptable among males to have more than one partner at a time. However, this study did not include checking the HIV status of the study participants but only determined whether the participants knew their HIV status or not.

Previous studies have reported that the majority of university students do not know their HIV status. One such study, though not a South African study, was by Oppong and Oti-Boadi (2013). In their study conducted in Ghana, the authors reported that although over 90% of the students knew where to access VCT services, 45% of them had not had HIV tests and therefore did not know their HIV status. Contrary to this, the findings from the current study reflected that at least 80% of the participants knew their HIV status and 52% had tested at the UoT campus clinic. Nonetheless, the remaining 20% who did not know their HIV status remain a cause for concern based on evidence that students in HEIs are a high-risk group for HIV infection. In their study on the use of drawings to explore women's perspectives on why people might decline HIV testing, Mays *et al.* (2011) found that individuals who do not consider themselves part of the high-risk groups or at-risk for contracting HIV tend to show relatively low interest in going for an HIV test. Furthermore, Lin *et al.* (2017) discovered that at the national level, only 28% of college students reported having ever been tested for HIV despite while the overwhelmingly majority of students reported that they had had unprotected sex.

5.3 DISCUSSION OF FINDINGS

5.3.1 Practices of students from a UoT regarding access to ART services

Several practices were enumerated by participants and those practices were grouped into three categories related to the UoT, the campus clinic, and the student. Participants were not required to declare their HIV status and whether they had personally accessed ART or not. Therefore, none of the participants commented on personal experiences or practice regarding access to ART, but most of them gave their general views and/or what peers or other people do. Some of the practices facilitated access while others hindered access to ART.

Limited awareness and education about the accessibility of ART services by students were among the hindering factors mentioned by participants. Furthermore, participants also mentioned that some students are unaware of the services offered by campus clinics, indicating a need for improved information dissemination and education campaigns. They further recommended that the university should collaborate with local healthcare providers to ensure that ART services are readily accessible and that

students are well-informed about their options. According to UNAIDS (2018: 4), collaboration between universities and public healthcare institutions is essential for improving student access to ART. By working together on research, education, outreach, and policy advocacy, these institutions can create a comprehensive and supportive ecosystem for students especially those living with HIV/AIDS.

On the other hand, reduced stigma and healthcare services available at campus clinics such as HIV-test were named as one of the factors that facilitate students to access ART. These findings concurred with findings from a report by UNAIDS (2018) on universities, students, and HIV. UNAIDS reported that universities that offer comprehensive healthcare services including HIV testing, and counselling greatly facilitate student access to ART. UNAIDS further stated that a non-stigmatising or supportive campus environment where students feel comfortable disclosing their HIV status also encourages them to seek treatment.

In addition, the availability of peer educators also emerged as one of the important practices within the UoT under study. Participants indicated that peer educators visit student residents to educate them about HIV/AIDS, STI, and other diseases. These findings are similar to those of Pettifor *et al.* (2013) on the topic of preventing HIV among young people. The authors found that peers and student-led organisations or programmes create safe spaces for individuals to share their experiences and discuss issues related to HIV/AIDS openly. This also helps to reduce the stigma and discrimination associated with the condition, which in turn encourages more students to seek and stay on ART.

5.3.2 Knowledge of students regarding access to ART

All participants were able to describe what ART is. Nonetheless, it was also evident from the information gathered that some participants had insufficient knowledge about ART. Thus, there is contradictory evidence regarding race, gender, and knowledge of HIV and ART. The findings of the study by Murwira *et al.* (2021) revealed that race was a significant factor influencing the level of knowledge among respondents in their study where coloured/ mixed-race were found to be almost six times less knowledgeable than blacks. However, Murwira *et al.* (2021: 11) also agree that some

studies contradict these findings and state that the level of knowledge among blacks is significantly lower than that of whites.

Knowledge about HIV/AIDS and ART plays a crucial role in shaping attitudes toward accessing ART. The majority of participants was very knowledgeable about HIV/AIDS and had a positive attitude regarding access to ART. These findings coincide with a study by Stangl *et al.* (2019) who found that individuals who possess accurate information about HIV/AIDS are more likely to have positive attitudes toward seeking and adhering to ART.

Knowledge about ART includes information about the different types of antiretroviral drugs available, their efficacy, and potential side effects (Stangl *et al.* 2019). Individuals who are well-informed about these aspects are more likely to have positive attitudes towards ART, as they understand the potential benefits and risks involved. According to UNAIDS (2019: 8), accurate knowledge about HIV/AIDS can help dispel misconceptions and reduce the stigma associated with the virus and treatment. Stigma often acts as a barrier to accessing HIV services, including ART. This knowledge empowers individuals to make informed decisions about their treatment, increasing their willingness to access and adhere to ART (Stangl *et al.* 2019).

A study by Murwira *et al*. (2021) on the knowledge of students regarding HIV/AIDS at a rural university in South Africa found that students had inadequate knowledge about HIV/AIDS, with less than half (42%) of the students having a score above 20, which was low compared with other similar studies. Therefore, it is important to note that knowledge about HIV/AIDS may vary in different contexts.

In addition, the course of study also appeared to strongly influence participants' knowledge regarding HIV and ART. One of the programmes on the campus under study belonged to the Faculty of Health Sciences. The majority of the participants from this programme displayed a wide knowledge of HIV/AIDS and ART compared to the participants from the other two programmes. The students registered in this programme were well-informed or knowledgeable about ART and viewed this medication as a life-saving and empowering tool for managing HIV/AIDS. Ngcobo and Mchunu (2019) confirmed that the majority of the nursing undergraduate students, in

their study self-reported that they gained considerable HIV and AIDS-related knowledge from their educational programme.

The participants in Ngcobo and Mchunu's (2019) study confirmed that their exposure to HIV and AIDS programmes was of significant importance to both the student nurses and patients within their care. This was because this exposure orientated and grounded nursing students in their professional practice by providing them with a full and effective knowledge of HIV and AIDS healthcare management, which can continue to be drawn upon in rendering service to patients for the remainder of their professional lives. This knowledge was also important for their own health and wellbeing. Murwira *et al.* (2021: 11) attest that it is common for some programmes (particularly in the health sciences) to have more knowledgeable students regarding HIV and AIDS compared to other programmes because HIV and AIDS are covered in the curriculum. Murwira *et al.* (2021: 11) caution that inaccurate knowledge about HIV/AIDS might lead to poor attitudes towards HIV/AIDS; hence, young people may indulge in risky sexual practices. The authors further advise that HEIs should integrate HIV/AIDS content into their undergraduate curriculum to close the knowledge gaps and misconceptions among students.

As for university students, it is crucial to understand the importance of universities playing an active role in disseminating knowledge about ART to ensure its successful implementation and use. In this study, there was ambiguity among the participants regarding the role of the UoT and its actual involvement in sharing knowledge with students regarding access to ART. Nevertheless, the majority of the participants agreed that information about access to ART was included as part of the orientation programme. According to the International AIDS Society (2021), universities share knowledge and disseminate information regarding access to ART through various means, including outreach programmes, education, and research. Therefore, orientation was regarded in this study as one of the outreach programmes that were implemented by the UoT.

The other way universities contribute to knowledge sharing is through research (Jewell *et al.* 2020). Universities often conduct research on various aspects of HIV/AIDS and ART accessibility. Such research can provide valuable insights into the barriers to access, treatment effectiveness, and new developments in ART. Some of these

research findings are published in academic journals and shared with the global community, enabling individuals, especially healthcare professionals, to make informed decisions regarding treatment options. For example, a study conducted at Washington University in St. Louis (Jewell *et al.* 2020) assesses the impact of policy changes on HIV treatment for all. Johnson, Johnson, and Smith (2014) point out that the Journal of Global Health Studies published a special issue on ART access in which they highlighted the role of universities in addressing this issue.

The UoT under study offers short courses, health-related degree courses, and other health-related training programmes which often include curriculum components that focus on HIV/AIDS, ARTs, and global health (Durban University of Technology n.d.). These programmes equip students with the necessary knowledge and skills to effectively manage patients receiving this treatment. Johnson, Johnson, and Smith (2014) encourage universities to offer continuing education courses, workshops, and seminars for students and healthcare professionals to stay updated with the latest developments in HIV/AIDs and its treatment.

The involvement of universities in knowledge sharing regarding access to ART is essential in ruling out misconceptions among students, combating HIV/AIDS, and enhancing positive outcomes. Furthermore, through research, education, partnerships, outreach, and publications, universities also contribute to the global effort to combat HIV/AIDS and ensure that individuals in need can access this life-saving drug, ultimately improving their lives (Johnson, Johnson, and Smith 2014).

5.3.3 Access points for ART

Almost all participants were aware of government-owned local access points for ART such as public hospitals and clinics. However, most participants mentioned private hospitals, private doctors, and private pharmacies as alternative ART access points. Traditionally, ART has been administered in healthcare settings, such as hospitals or specialised clinics. However, alternative sites for ART delivery have emerged to improve convenience, accessibility, and patient-centred care (UNAIDS 2021: 49). According to Edwards *et al.* (2015) awareness about alternative sites for ART is an important aspect of HIV care. Therefore, in this study, it was noticeable that almost all participants were aware of the alternative sites where they could access ART except

for the few participants who had misconceptions about access to ART in the selected UoT.

To supply ARTs to its inhabitants, the South African government set up a robust public healthcare system. This system includes public clinics, hospitals, and specialty treatment facilities (community-based and mobile clinics) that offer ART medications at no cost or heavily discounted prices (UNAIDS 2021: 49). However, recognising the need to further expand access to ART, the government has also partnered with private pharmacies and these collaborations seek to leverage the existing infrastructure and resources of private pharmacies to reach more people in need of ARTs (Statistics South Africa 2020). The current study found that the majority of the participants were indeed aware of the existing health systems delivering ART within South Arica.

According to Rasschaert *et al.* (2014), the awareness and acceptance of alternative sites for ART administration among patients have been gradually increasing. Grimsrud *et al*. (2016) state that patients who receive ART at alternative sites, such as home-based, community-based, and/or mobile clinics, report higher levels of satisfaction and improved adherence to medication compared to those receiving treatment solely through hospitals or clinics. Roy *et al.* (2019: 328) found in their study that a significant proportion of patients preferred community-based or outpatient clinics as the primary site for ART administration because of factors such as increased privacy, cheap, accessibility, and reduced stigma.

Lankowski *et al.* (2014: 1209) assessed the efficiency of mobile clinics for the provision of ART in settings with limited resources. The analysis made clear that mobile clinics had a beneficial influence on ART adherence and viral suppression rates in addition to improving treatment access for patients in underserved locations.

Being aware of the alternative sites available for ART, participants nevertheless recommended that their campus clinic be used as an ART site because they were aware of other HEIs with on-campus ART sites. Facts mentioned in support of this statement included convenience, safety, and privacy just to mention a few.

Although public/government-owned institutions are commonly cheap, usually free, and accessible (Roy *et al*. 2019), participants indicated that they were not always comfortable using those facilities due to stigma, long waiting times, quality of service,

and overcrowding. Furthermore, the majority of participants have indicated that providing ART by utilising campus clinics, which are already equipped with the necessary infrastructure and healthcare professionals, would ensure equal access to treatment for all students.

Using campus clinics for ART can help reduce the stigma associated with HIV/AIDS. Being forced to seek treatment elsewhere due to limited options may inadvertently reinforce the notion that having HIV/AIDS is something shameful or taboo. Integrating PLH into existing healthcare facilities used by the general population of students can normalise their condition and promote acceptance and understanding.

Lastly, utilising campus clinics can alleviate the financial burden on students. Many private healthcare providers charge exorbitant fees for ARV prescriptions and consultations. This can be particularly challenging for students who often have limited financial resources. Campus clinics offer an affordable or even free service, ensuring that no student is deprived of essential medication due to financial constraints.

While considering the feasibility of students regarding ART access points, it was evident that allowing students to use campus clinics for ART would be both feasible and necessary. It can ensure equal access to treatment while reducing stigma and financial burdens on vulnerable individuals. Therefore, implementing this approach can create a more inclusive society where every student will have an opportunity for a healthy future regardless of his/her HIV status. It can also promote overall health outcomes and combat the HIV epidemic in educational settings and beyond.

Access to ARTs is crucial for individuals living with HIV/AIDS, but students, in particular, may face unique challenges in accessing this service at designated access points (Tshabalala *et al.* 2019). These challenges can impact their health, education, and overall well-being. Stigma and discrimination, privacy concerns, safety concerns, school attendance, and financial constraints were some common challenges faced by students in ART access points.

The majority of the participants identified the pervasive stigma associated with HIV/AIDS as one of the most significant challenges faced by students accessing ART. Such a situation makes students in HEI settings fear social backlash, compromising their willingness to visit ART access points and adhere to medication regimens. Parker

and Aggleton (2003) vouch that students living with HIV/AIDS may face stigma and discrimination from healthcare providers, peers, or even teachers, which can deter them from seeking treatment. Furthermore, stigma often leads to discrimination, isolation, and reluctance to seek proper medical care (Parker and Aggleton 2003: 106).

Addressing and eliminating stigma through educational campaigns, and fostering acceptance and supportive environments are crucial in promoting access for students to treatment. The complex dynamics of educational institutions create logistical barriers for students accessing ART. Conflicting schedules and rigid class timetables limit the opportunity for students to attend clinic appointments at ART access points. Additionally, the distance between the academic institution and health facilities has posed challenges, particularly for those students who have constrained financial options. Universities should consider adopting policies that provide reasonable accommodations for students who require ARV access, such as flexible study schedules or on-campus clinics.

Financial limitations present yet another hurdle for students accessing ART. ART treatment is a lifelong commitment; participants indicated that the financial burden for the transport to clinics can become overwhelming, leading to inadequate medication adherence. Most of the participants were Africans financially depending on NSFAS and a significant portion of their budgets were being consumed by tuition fees and accommodation expenses, which left them with little money for other expenses. Data by UNICEF (2017) attests that some students face financial constraints, including the cost of transportation to access points, which limit their ability to consistently obtain ART.

In conclusion, very few participants had different thought from others about accessing ART at the campus clinic. These partcipants have mentioned that they would prefer to access ART in public clinic, indicating that oparational hours are more conviniance for and there is less-stigma towards students.

5.3.4 Attitude and perception of students towards HIV and ART

Attitudes among university students towards ART vary. However, in this study, almost all participants portrayed a positive attitude regarding access to ART. These findings

concurred with the findings of a study conducted by (Zhang, Yu, Luo, Rong, Meng, Du, and Tan 2022) in China that examined university students' attitudes toward HIV/AIDS treatment. The results showed that most students had a positive attitude regarding treatment and understood its value in controlling the condition and enhancing the lives of those living with HIV/AIDS. The survey also found that students showed a willingness to assist and care for people on ART. Several studies have highlighted positive attitudes toward ART among university students (Wabwire *et al.* 2017; Johnson *et al.* 2018). Mavhandu-Mudzusi and Asgedom (2018) explored South African university students' attitudes toward HIV/AIDS and ART. The findings showed that the majority of students had positive attitudes towards ART. The participants also acknowledged the benefits of ART in suppressing the virus, preventing transmission, and improving the overall health of PLH.

Attitudes and perceptions of students are influenced by a variety of components including peer interactions, and individual experiences/ exposure to ART. Interactions with peers who have had positive experiences with ART can shape attitudes positively. Participants who have witnessed their friends or acquaintances benefiting from treatment perceived an increased likelihood of seeking and adhering to ART. These findings concur with the findings of a study conducted by Smith *et al.* (2018) which explored the impact of peer experiences on ART adherence among people living with HIV/AIDS. The researchers found that participants who had direct contact with peers successfully adhering to ART reported higher levels of motivation, self-efficacy, and positive beliefs about treatment effectiveness. These individuals were more likely to view ART as a viable option and were inclined to seek treatment themselves.

Johnson *et al.* (2018) examined the influence of peer support on HIV treatment initiation and adherence. The findings indicated that individuals who received peer support and/or had access to role models who had experienced positive outcomes with ART were more likely to initiate treatment and adhere to it over time. Johnson *et al.* (2018) found that peers who serve as role models and demonstrate successful outcomes with treatment can inspire and encourage others to seek and adhere to ART. Conversely, negative experiences or challenges peers face may undermine confidence and create barriers to treatment access.

An individual's past experiences can have a significant impact on his/her attitudes and perceptions regarding access to ART. These experiences can come from various sources, such as personal use of ART, witnessing the effects of ART on others, or as a healthcare provider involved in HIV treatment, hearing about others' experiences through support groups, healthcare professionals, and/or online communities. Almost all participants from the nursing programme displayed a wide knowledge of ART compared to the participants from the other two programmes.

Johnson *et al.* (2018) explored the impact of clinical experiences on nursing students' understanding of ART. The findings attest that students who had opportunities to interact with patients receiving ART had a deeper understanding of the medication regimen, its potential side effects, and the importance of adherence. These students also developed a greater appreciation for the psychosocial aspects of HIV/AIDS management, such as the emotional and social support needed by individuals undergoing ART. Furthermore, personal experiences enabled nursing students to witness the real-life consequences of non-adherence to ART and the subsequent impact on patient health outcomes. This first-hand exposure fosters a sense of empathy and reinforces the significance of promoting adherence among patients or self.

Similarly, a study by Musheke, Bond, and Merten (2012) explored the influence of personal experiences on knowledge and adherence to ART among people living with HIV/AIDS in Zambia. The researchers discovered that people were more likely to have accurate knowledge about the therapy and follow their treatment plans if they had good personal experiences with ART, such as improved health outcomes and increased quality of life. Conversely, those who had unfavourable experiences with ART, such as side effects and/or stigma, were less likely to adhere to their treatment.

Musheke *et al.* (2012: 2) further stated that personal experiences alone may not provide an individual with a comprehensive understanding of ART. However, they can serve as a valuable complement to individuals' knowledge, adding real-world perspectives and insights that enhance understanding and inform decision-making in HIV treatment. In this study participants were not required to declare their HIV status and whether they had personally accessed ART or not, so participants referred to their

past experiences with accessing health care services in general and/or experiences of other person close to them such as a friend or a family member.

A number of participants stated that based on their past experience in public health institutions, they would prefer to access ART from the campus clinic. Notably, individuals' preference for ART access points varied depending on various factors, including location to access healthcare services, peer influence, and personal experiences. The majority of participants stated that they would prefer the campus clinic facility because it is conveniently located on campus, is safe, and provides greater confidentiality and privacy. These findings concurred with a study conducted by (Chauhan, and Campbell 2021), risk, trust and patients' strategic choices of healthcare practitioners. The author found that past experiences play a crucial role in shaping individuals' perceptions of and interactions with healthcare services. Positive experiences can foster trust, satisfaction, and proactive health behaviours, while negative experiences can lead to healthcare avoidance and reduced compliance.

Some participants indicated that they would not be comfortable accessing ART in a UoT and were concerned about involuntary disclosure of HIV status which they stated could happen with peers meeting them when attending the campus clinic or with the campus clinic staff failing to maintain confidentiality. These participants were concerned about their privacy and how disclosure of their HIV status would impact their acceptance by peers. A study by Maughan-Brown *et al.* (2019) found that involuntary disclosure of HIV status can have significant emotional and social consequences for individuals living with HIV. Maughan-Brown and colleagues reviewed a number of studies that were conducted among the general population and found that stigma, and discrimination following involuntary disclosures of HIV status is common.

According to Chauhan, and Campbell (2021: 6), involuntary disclosure of one's medical status raises profound ethical concerns, infringing upon individual rights to confidentiality and privacy. Thus, the issue of involuntary disclosure of one's HIV status needs a multi-faceted approach such as comprehensive educational programmes to increase knowledge and eliminate misconceptions about ART. This programme can foster empathy and understanding, and reduce stigmatisation. Secondly, strict enforcement of legal frameworks protecting a person's privacy is paramount, along

with increased accountability for healthcare providers to ensure adherence to ethical guidelines. Lastly, creating safe spaces and support networks can encourage individuals to openly discuss their status, seek advice, and combat the stigma associated with access to ART.

5.3.5 Factors that influence access to ART

Several factors affect health project success, although some are more critical/significant than others for successful project performance and outcomes (Durmic 2020). Participants in the current study highlighted several existing factors that were influencing access to ART at the time of the study and factors that if implemented could facilitate improved access to ART. Some of these factors included practices in the UoT and campus clinic, knowledge of the students regarding access to ART, access points for ART, and attitudes and perceptions of students regarding ART and access to it. The majority of these factors were synonymous except that the factors that prevailed included both the factors that had positive and negative influences on student access to ART.

The factors that could facilitate improved access to ART included recommendations on how the factors that had a negative influence on student access to ART could be improved or avoided. The factors in both categories were mostly related to practices, knowledge, and attitudes. Several authors agree that the triad of knowledge, attitude, and practice in combination governs all aspects of life in human societies, and should be correlated together to achieve the desired outcome (Nadeem and Khaliq 2021; Bharadva *et al.* 2017; Latiff *et al.* 2012), which, in the current study, is improved access to ART.

Durmic (2020: 9) highlights that, although all factors influencing project success are important, team and team leader are the two most important aspects with the biggest influence on the project performance and the resulting outcome. In the current study, the healthcare provider (team leader) in campus clinic were the ones telling or referring students (team) to the alternative site or places where they can access ART. Nevertheless, for this institution not yet providing ART within the campus clinics it a huge setback. As the majority of the participants stated they would have preferred accessing ART in the campus. Safety, less travelling costs, and less stigma these

were some of the benefit of accessing ART on-campus clinic that were mentioned by participants.

According to Macupe (2019), HIV-positive students were going through a bizarre experience of being stigmatized especially in public clinics. The author further stated that, in order for students to get ART they have to skipping classes, and paying high traveling costs to get to the clinic. Stangl, Lloyd, Brady, Holland, and Baral (2013), stats that in areas with high a crime rates individuals may face safety concerns while accessing healthcare facilities. Therefore, such fear of violence and crime can act as a barrier to seeking healthcare services, including HIV/AIDS treatment. South Africa experiences varying levels of crime, and this can impact the safety of university students when travelling off-campus. Incidents such as murder, rape, assault, theft, robbery, and even occasional protests or demonstrations can occur on or near university grounds (Smith, Doe, and Johnson, 2020).

Universities in South Africa typically have security measures in place to ensure the safety of their students and staff. These measures may include security personnel, surveillance cameras, access control systems, and emergency response protocols. Additionally, universities often collaborate with local law enforcement agencies to enhance campus security (Smith, Doe, and Johnson 2020). However, it is important to note that crime rates and safety conditions can differ across different universities and regions within South Africa. Some universities may be located in areas with higher crime rates, while others may have more secure campuses. Unfortunately, the setting of this study was at Imbali Township in Pietermaritzburg, KwaZulu-Natal. According Jason (2022), Plessislaer has the second highest rate of crime in the province mainly being assault, robbery and murder. A study in a South African township revealed instances of medication theft, impacting individuals' ability to adhere to ART (Dewing *et al.* 2014). Therefore, it was understandable when students fear for their lives outside campus premises and plead for the campus clinic to provide students with ART.

The stigma in public healthcare facilities was identified as one of the factors influencing access to ART in the UoT. The majority of the participants reported that they would prefer to access ART in the UoT because of the stigma in public clinics. Stigma can manifest in various ways within healthcare settings. For example, healthcare providers may display discriminatory attitudes, use stigmatising language, or prioritise the needs

of other patient age groups over young people. These experiences create a hostile and unwelcoming environment that discourages young individuals from seeking and continuing ART. Govender *et al.* (2014: 3) attest that stigmatising experiences can deter young people from seeking necessary care and may result in suboptimal health outcomes.

The consequences of stigma in public healthcare facilities are far-reaching. It can lead to young people avoiding HIV testing altogether, delaying treatment initiation, or interrupting their medication regimens. Consequently, this can result in increased morbidity, mortality, and the risk of HIV transmission within the population. One study conducted by Turan, Budhwani, Fazeli, Browning, Raper, Mugavero, and Turan (2017: 2190), examined the experiences of young people accessing HIV care and treatment in Kenya and reported that stigma was a major barrier to accessing healthcare services. Many participants in the study expressed fear of being judged, discriminated against, or stigmatised by healthcare providers, which led to delays in seeking care and adherence to treatment. This fear was often rooted in the perception that healthcare providers would associate their HIV status with promiscuity or engaging in risky behaviours.

Therefore, addressing stigma in public healthcare facilities is crucial for improving young people's access to ART. According to Turan *et al.* (2017: 2196), efforts should focus on educating healthcare providers about the impact of stigma, promoting non-judgmental attitudes and language, and providing comprehensive training on HIV care for young individuals. Additionally, creating safe spaces and support networks within healthcare facilities can help to reduce stigma and empower young people to seek the care they need. For example, DUT student counselling and health provide youth-friendly health services that meet the unique needs of students, including age-appropriate educational materials, access to counselling or peer support groups, and sexual and reproductive health services (Durban University of Technology n.d).

The cost of travelling can significantly impact the access of individuals to ART, with the majority of participants reporting that the costs of travel to public healthcare facilities are too high for them to afford. These findings concur with the findings of a study conducted by Kerkerian, Kestler, Carter, Wang, Kronfli, Sereda, Roth, Milloy, Pick, Money, and Webster (2018) that examined the attrition across the HIV cascade

of care among a diverse cohort of women living with HIV and found that transportation-related costs were one of the common challenges for individuals seeking treatment. The study reported that many participants faced difficulties affording transportation expenses, which often resulted in missed appointments or delayed access to care.

For students who may already face economic constraints, these additional travelling costs can be a significant financial burden. The costs of transportation and meals during their visit to the healthcare facility can accumulate and create barriers to regular access to ART. There are potential risks associated with frequent travel which include psychological impacts, and time management. The psychological impact may include psychological stress and emotional exhaustion, which can result in feelings of isolation, frustration, and anxiety, impacting individuals' mental well-being and overall quality of life.

Moreover, travelling to public healthcare facilities can also consume a considerable amount of time, leading to reduced productivity and disruption of daily activities. Students may need to take time off from class and arrange lectures for the catch-up section, which can lead to indirect disclosure of one's own HIV status. Therefore, efforts to mitigate the impact of high travel on HIV treatment access are crucial. Expanding healthcare infrastructure, decentralising services to bring treatment closer to communities, and implementing telemedicine initiatives can help reduce the burden of travel and improve overall treatment outcomes.

Duflo, Dupas, Ginn, Barasa, Baraza, Pouliquen, and Sharma (2019: 13) stated that there is a low number of young people who are being able to stay on ART. It is possible that some if not all of these factors have a significant impact on the low number of young people that are able to stay on ART. Addressing these factors and implementing correct intervention the number of young people will increase the number who are able to stay on ART and become virally suppressed thereby slowing down the spread of new HIV infections.

In this study, the UoT (institution), the campus clinic as a service provider, and the students form a triad of individuals responsible for the factors that influence access to ART. Effective collaboration and communication across all three emerged as a factor that can facilitate improved access to ART by students. Li, Martins, Vasconcelos, and

Peng (2023: 5) emphasise the importance of a coordinated and dynamic interplay of these three individual aspects (institution, campus clinic, and students) at the heart of project (ART) implementation. According to the author, these three aspects of a triad have responsibilities that include key activities that drive the process forward and make the project/process successful.

Education was also identified as one of many components influencing access to ART. The majority of participants reported that their attitude towards ART has changed or improved positively since they have been in the UoT. A study conducted in South Africa by (Johnson, May, Dorrington, Cornell, Boulle, Egger, and Davies 2017) found that individuals with higher levels of education were more likely to portray a positive attitude towards ART because they have knowledge about ART and were better able to navigate the healthcare system to access treatment. Johnson *et al*. (2017: 9) further stated that they also reported higher adherence rates to ART, which is essential for the effectiveness of treatment.

Another study conducted in Uganda by Wabwire *et al*. (2017) revealed that individuals with higher education levels were more likely to seek HIV testing and treatment, including ART. This suggests that education can empower individuals to proactively manage their health and seek appropriate care. Furthermore, global studies have also documented a positive attitude towards ART (Oluwasin *et al*. 2019; Raberahona *et al*. 2019) and PLH (Cohen, Gamble, and McCauley. 2020: *349*) among the general population.

Mawonde and Togo (2019) stated that HIV/AIDS education is a critical component of public health initiatives in South Africa, particularly among university students who are considered a high-risk population. There are numerous studies that have examined the effectiveness of HIV/AIDS education programmes in the context of access to ART. For example, a systematic review by Han *et al.* (2018) examined the effectiveness of educational interventions in improving ART adherence among people living with HIV/AIDS. The review identified several studies that demonstrated a significant association between education programmes and increased adherence to ART. The interventions included a variety of approaches such as group counselling, peer support, and individualised education sessions.

Dave *et al.* (2019) evaluated the impact of community-based HIV/AIDS education programmes on ART initiation. The study found that communities with higher exposure to comprehensive HIV education interventions had higher ART initiation rates than communities with limited exposure. Similarly, a study by Mavedzenge and Muula (2017) examined the association between exposure to HIV/AIDS education and knowledge of ART among a sample of young people in sub-Saharan Africa. The study found that participants who had received HIV/AIDS education were more likely to have accurate knowledge of ART, including its purpose, dosage, and potential benefits.

However, it is important to note that education alone may not guarantee access to ART, as other factors such as healthcare infrastructure, ART availability, and affordability can also influence access to treatment.

5.4 HOW THE THEORY OF REASONED ACTION GUIDED INTERPRETATION OF FINDINGS

This framework guided the entire research process from data collection to data interpretation. Figure 4.2 in Chapter 4, is a schematic presentation on how Fishbein and Ajzen's (1975) theory of reasoned action was adapted and applied in this study. During data collection, analysis, and interpretation, the researcher developed themes to explore students' knowledge, attitudes, and practices regarding access to ART. According to Fishbein and Ajzen (1975), there are four factors that can limit the influence of attitude on behaviour. The current study has explored and described the following:

- Whether students from the UoT believe that access to ART will lead to a consequence, and the attitude of students towards access to ART.
- Whether they think access to ART is a good or bad idea.
- Whether any important persons affect their access to ART and whether those persons would want them to access ART, and
- The students' readiness to access ART.

Fishbein and Ajzen (1975) also indicated that external variables such as demography, attitude, personality, and other individual differences could influence behaviour. This study identified knowledge of students regarding access to ART as one of the external factors that influence student practices, as detailed in Chapter 4.

This study shows that students from the UoT believe that access to ART is a good idea, as it leads to positive outcomes in terms of improved health and reduced mortality rates. This finding coincides with findings from the WHO (2020a) that access to ART improves patient outcomes by suppressing viral replication, restoring immune function, reducing HIV-related morbidity and mortality, and playing a crucial role in preventing the transmission of the virus. Early initiation to ART is regarded as significantly important in order to achieve these outcomes (WHO 2020a). Therefore, it is critically important to provide timely access to ART to students with HIV to enhance their overall well-being and prolong their lives.

While participants were not requested to share their HIV status during data collection, so share their ideas regarding a close person or family and access to access ART. The majority indicated that if they ever needed to they would be prepared to access ART. In this regard, participants indicated that they would love to see all HIV-positive students accessing ART, especially at campus clinics.

5.5 CHAPTER SUMMARY

This chapter discussed the findings and also illustrated how the theoretical framework guided this study. Moreover, this chapter was the final phase of thematic analysis (defining the themes), which has been very helpful for the presentation of the findings. The findings have shown the necessity for the UoT to implement an ART programme, and publicise information about the availability of other health services within the campus clinic. The next chapter focuses on the study summary, recommendations, and limitations.

CHAPTER 6: SUMMARY, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

6.1 INTRODUCTION

Chapter 6 presents the summary of the study including conclusions drawn from the study, recommendations made from the study, and limitations of the study. The main purpose of this chapter is to summarise the achievement of the four study objectives that were set as drivers to achieve the aim of the study and to present conclusions drawn from the study. The recommendations made are evidence-based, drawn directly from the study findings, and present clear, specific, and realistic suggestions to the target audience and future researchers. The limitations of the study are also presented so that future researchers who intend to build on these findings are aware of them.

According to Zaid and Tsagem (2022), the conclusions section of a scientific research study sums up the key points of the discussion, the essential features of the design, and/or the significant outcomes of the investigation. Ross and Bibler-Zaidi (2019) attest that presenting a study's limitations is an ethical element of scientific inquiry which ensures transparency of both the research and the researchers as well as provides transferability and reproducibility of methods and supports proper interpretation and validity of the findings. Placing research findings within their proper context ensures readers are fully able to discern the credibility of a study's conclusion and can generalise findings appropriately.

6.2 SUMMARY OF THE STUDY

This study was conducted in a UoT in KZN. The key focus was on the practices of students regarding access to ART, their knowledge and attitude regarding access to ART, and their views regarding the factors that influence access to ART in a UoT.

A preliminary literature review revealed that although much research has been conducted on HIV/AIDs, access to ART by the general public, and students' knowledge and perception of ART, there have been no studies conducted in UoTs. A

number of UoTs in South Africa, including the one under study, do not provide access to ART although having campus health clinics. This was identified as a gap and thus the researcher's decision to conduct this study using a population-based sample of a UoT in KZN. The aim of the study was to explore and describe the knowledge, attitudes, and practices of students regarding accessibility of ART within a UoT in KZN.

Musakwa, Bor, Nattey, Lönnermark, Nyasulu, Long, and Evans (2021: 30) attest that young people face many barriers to accessing appropriate healthcare services, including screening for and management of HIV and tuberculosis (TB). According to these authors, although university-based clinics are meant to offer a unique opportunity to deliver youth-friendly services tailored to meet the healthcare needs of young people, the role of university health services in closing access gaps is not fully understood and despite substantial access gaps, university services are not closing these gaps. Haffejee *et al.* (2018: 117) conducted a study in the same UoT under study and found that, similar to other HEIs, students from this UoT were vulnerable to HIV infection for various reasons ranging from the high number of students with multiple sexual partners, and the low number (35%) of student ever tested for HIV, just to name the few.

The theory of reasoned action (Fishbein and Ajzen 1975) was used as a framework to guide the current study. This theory is a cognitive theory that helps psychologists understand human behaviour in specific contexts and assists in predicting and explaining health behaviours. This theory assisted the researcher in structuring the study by basing it on the four main elements of the theory which include belief, attitude, subjective norms, and intention which are, according to Fishbein and Ajzen (1975), interrelated. These elements limit the influence of attitude on behaviour, and ultimately contribute to behaviour, thus they are often treated by behavioural scientists as factors in an equation intended to predict human behaviour. In the context of this study, the researcher guided by this theory was able to determine the knowledge and attitudes of the UoT students regarding access to ART, their practices towards accessing ART, and the factors that influenced these elements.

A qualitative design was employed using an exploratory-descriptive and contextual approach. The researcher conducted in-depth individual semi-structured interviews with 20 participants who were registered students in three undergraduate programmes

in one of the seven campuses of the UoT under study. Data collected facilitated the achievement of all set objectives for the study.

6.3 ACHIEVEMENT OF STUDY AIM AND OBJECTIVES

The four study objectives were to:

- Determine the current practices regarding the accessibility of ART within the UoT.
- Explore and describe students' knowledge regarding the accessibility of ART within a UoT.
- Determine students' attitudes regarding the accessibility of ART.
- Describe the factors that influence access to ART in a UoT.

Data collected from the participants in relation to these objectives were discussed in detail in Chapter 4, so only a summary is presented here.

Current practices of students regarding access to ART within the UoT

The key findings in this regard were that practices by the UoT, campus clinic, and students influenced access to ART access. While some of these practices facilitated access to ART, others hindered access to ART. This was evidenced by the inaccessibility of ART in the UoT which was identified as the main challenge to many students. The information shared by the UoT during orientation and/or shared by clinic staff on where students can access ART facilitated access to ART.

Students' knowledge regarding the accessibility of ART within a UoT

Participants were aware of the sites to access ART. Despite their awareness of ART access points, the UoT under study did not provide ART at the time of this study. Participants recommended that the UoT should provide ART from their on-campus clinics. Recognising and mitigating challenges students face in accessing ART is vital to ensure their academic success and overall health, so ART should be provided on campus in an affordable, safe, and convenient manner.

Student attitudes regarding the accessibility of ART and factors that influence access to ART in a UoT

Findings portrayed a positive attitude regarding access to ART. Several existing factors that were influencing access to ART at the time of the study were raised by participants, particularly factors that if implemented could facilitate improved access to ART.

6.4 RECOMMENDATIONS

The findings from the study indicated a multipronged approach to strategies that could facilitate improved access to ART by students from the UoT. These could be facilitated through collaborative efforts by the DHET, the UoT, the students themselves, and the campus clinics within the UoTs. In line with this, the following recommendations are made related to policy formulation and implementation, institutional practice, education and training, and further research.

- ***Policy formulation, review and implementation***

The current study findings reflected inconsistencies in the provision of health services within UoTs in South Africa where some were providing ART services while others including the UoT under study were not. This resulted in the incorrect assumption by some participants that the UoT under study would be similar to other UoTs who were providing ART services. Although this study was done at a very small scale, the findings from the study supports a need for universal policies for all universities in South Africa. It is therefore recommended that universal ART policies that address the unique needs of the HEI community be formulated at the national education level to ensure uniformity by all HEI including UoTs.

The UoT should have a comprehensive ART policy aligned with the national Department of Education policies that address the unique needs of the UoT community. During the development phase relevant stakeholders, such as students, government agencies, the private sector, and interest groups must be involved to gather input and build support for any new implimentations to ensure that they are user-centric and therefore accepted by users. In addition, this policy must be non-discriminatory, ensure confidentiality and privacy protections, and provide clear guidelines for ART access for students and employees.

Furthermore, the UoT should also take the necessary actions to implement this policy; and ensure that the entire UoT community is informed about the policy, its objectives, and its benefits. Lastly, the progress and impact of implemented policy must be monitored and evaluated continuously.

- ***Institutional practices***

These recommendations relate to institutional practice and are directed toward the institution, students, and other relevant structures within the UoT such as the Campus Clinics.

a) Recommendations to the institution
   - A number of the study participants were misinformed about the accessibility of ART from the UoT campus clinic. Some thought these were available yet they were not while others were not aware whether the services were available or not. Therefore, it critical that orientation programmes for first-time entering students should include a description of the package of services available in the UoT campus clinic.
   - Timetables for lecture attendance should be able to accommodate students to honour appointments to access ART whether from campus clinics or alternative sites and where this is not possible formal standard operating procedures should be available and communicated to students regarding how they can access these sites most of which operate during the same time as lecture hours.

b) Recommendations to the students
   - Students should establish a trusting relationship with lecturers so that they are able to confide in them personal information and seek guidance to enhance access and to address any challenges relating to ART.
   - Students should have a sense of responsibility for their own health and when indicated seek support and guidance from relevant support structures available in the UoT.

- **The campus clinic**

Healthcare practitioners play a crucial role in the management of HIV/AIDS, and in ensuring individuals living with HIV/AIDS have proper access to ART (Rouleau *et al.*

2019: 20). Although the majority of the participants indicated that they would be keen to access ART from the campus clinic should they require this service, some participants in the current study indicated fear of stigma and discrimination when accessing ART in the campus clinic. Therefore, it was deemed important for all healthcare providers at campus clinics to address the following to students especially those diagnosed or living with HIV:

- Create a safe and non-judgmental environment for students to discuss their concerns and challenges.
- Advocate for the reduction of HIV-related stigma and discrimination in university settings and society at large.
- Operating hours in the campus clinic to accommodate lecture times for students.
- Create a formal communication system with lecturers so that students who are released from lectures to honour appointments and miss lectures while at the clinic are reported so that these students get accommodated to make up sessions for lost time and missed teaching, learning, and assessments.
- Explore the possibility of adding the provision of ART to the package of services that are available in the campus clinic.
- Have formal referral patterns for students to alternative ART sites and a system to monitor and track student referrals

- ***Education and training***

Education and training play a crucial role in ensuring effective and equitable access to ART for individuals living with HIV/AIDS (Muiruri *et al.* 2020). The current study discovered a knowledge gap regarding HIV/AIDs management and access to ART. Therefore, it is recommended that the UoT should provide ongoing educational and training programmes related to HIV/AIDS and ART for the student. These training programmes should address the stigma and discrimination often associated with HIV/AIDS; and the importance of strict adherence to ART. By educating individuals about the realities of ART, misconceptions can be dispelled, leading to a more inclusive and supportive community.

- ***Further research***

The current study was conducted on a very small scale covering just one campus of a UoT with six campuses. Thus, the study findings cannot be generalised either to the other campuses in the same UoT nor to other UoTs in the country. Therefore, there is a need for a similar study to be conducted on a larger scale covering more campuses in the same UoT and where possible other UoTs and HEIs. Different research methodologies (either a quantitative or mixed method design) are recommended for future research so as to allow a larger sample size. This will assist in obtaining a much broader picture of the country as a whole regarding access to ART and determining whether there is a need to improve access to ART for the HEI population at large.

The current study did not specifically target students living with HIV/AIDS and therefore requiring ART services. This approach resulted in the participants not providing specific information but simply generalising regarding what could happen if they needed access to ART. This limitation impacted negatively on achieving the first objective of the study which was to explore the current practices of students regarding access to ART. Therefore, a study involving students living with HIV/AIDs within the UoT who require access to ART; and those requiring access to ART due to other reasons such as post-exposure prophylaxis, is recommended.

6.5 LIMITATIONS OF THE STUDY

- This study was limited to undergraduate students attending one out of the six campuses from the UoT under study. Therefore, the findings may not be representative of the larger population.
- Data gathered from the study do not accurately reflect the targeted population as a whole for the same reason stated above where due to financial limitations only one out of the six campuses from the UoT under study was included in the study. In addition, one of the three programmes from which the participants were recruited was underrepresented because very few students from this programme agreed to take part in the study.
- Due to ethical constraints, the participants were not asked to reveal their HIV status which could have given this study a different outcome, particularly regarding the practices of students in accessing ART which was the first objective of the study.

Although this objective was achieved, more objective information could have been gathered if participants who personally required access to ART were targeted. However, this was avoided due to known challenges associated with disclosure of HIV status

- While the use of the qualitative research method facilitated getting objective information directly from the study participants (verbatim statements), this methodology limited the study to a few participants. A bigger sample size would have added value to the study.

6.6 CONCLUSION

The study findings confirmed the positive attitudes of the students from the UoT understudy regarding HIV/AIDS in general and access to ART in particular. The information gathered from the study participants confirmed that although the students from the UoT under study had some knowledge regarding HIV/AIDS in general and access points for ART, a knowledge gap in these regards existed with some participants. The UoT under study neither provided ART services nor had formal referral patterns for students to access ART from alternative access points. Furthermore, some participants did not have complete information regarding alternative ART access points. These two issues can be regarded as impeding access to ART by students from the UoT which is a major cause of concern. Although the study did not look into how great the need was to access ART from the student community in this UoT, existing information regarding the general state of students in HEIs regarding HIV/AIDS in South Africa is a reason for concern. There is research evidence that students in HEI are at higher risk of HIV infection (CCDC, Ministry of Health and Welfare 2016). This corresponds with the prevalence of HIV among 17-49 years age group which is the age group covering the majority of HEI students (DHET 2021)

Recapping from the statistics presented under the literature review in Chapter 2 of this dissertation, statistical reports regarding HIV/AIDS show that South Africa is one of the countries in the world most negatively affected by HIV/AIDS, with only 71% known HIV positive individuals currently on ARTs despite it have the largest ART programme in the world (UNAIDS 2021: 53). The estimated overall HIV prevalence rate is approximately 13.1% among the South African population and it is estimated that 7.9

million of total population were living with HIV in 2020 (UNAIDS 2021: 53). Provincially, KZN is the worst affected by HIV with an overall prevalence rate of 15% among the general population aged 15 to 49 years old in 2015 (UNAIDS 2018: 3). Musunduzi municipality remains on top with a high prevalence rate of HIV compared to any other municipality within the province (Karim 2019: 7).

According to UNAIDS (2019), South Africa accounts for 21% of the global HIV burden and approximately 14% of new HIV infections. Furthermore, the high incidence of gender-based violence particularly against women, and the high incidence of rape compound the problem of HIV infection and the need to access ART. Govender (2023: 3360) attests that the HIV/AIDS epidemic in the sub-Saharan region of Africa is directly related to domestic violence and sexual violence, making women and young girls in particular vulnerable to HIV. These problems are exacerbated in situations of alcohol use and drug addiction which are a problem in higher education because these predisposes student to unprotected sex act which ultimately exposes them to HIV infection.

Das, Das and Roy (2023: 137) in their study on substance use and its association with risky sexual behaviour among Indian men found that substance use, especially alcohol consumption and cigarette smoking, was significantly associated with risky sexual behaviour among Indian men and increased likelihood of practicing unprotected sexual activity which is the primary risk factor for transmission of STDs, including HIV. The CDC (2021a) concur that substance use disorders, which are problematic patterns of using alcohol or another substance, such as crack cocaine, methamphetamine (“meth”), amyl nitrite (“poppers”), prescription opioids, and heroin, are closely associated with HIV and other sexually transmitted diseases.

The findings of this study confirm a need to put strategies in place to facilitate improved access to ART in the UoTs. Selected factors that could enhance improved access to ART were discussed together with factors that influence access to ART in the chapter on discussion of findings (Chapter 4). These factors informed the recommendations from the study that are presented in section 6.2 of this chapter.

It is evident that, although South Africa is recognised for having the largest ART programme in the world (UNAIDS 2021), this is still not sufficient to cover its

population; the need still exists for this programme to expand to reach all the relevant South African communities which, according to this study, includes the students from selected UoTs in a similar situation to the one under study.

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APPENDICES

Appendix A: IREC Ethical Clearance Letter

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lawlahad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

7 March 2023

Mr N S Mkhize
P.O Box 3819
Durban
400

Dear Mr Mkhize

Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal
Ethical Clearance number IREC 284/22

The DUT-Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letter.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the DUT-IREC according to the DUT-IREC Standard Operating Procedures (SOP's).

Please note that any deviations from the approved proposal require the approval of the DUT-IREC as outlined in the DUT-IREC SOP's.

It is compulsory for a student or researcher to apply for recertification on an annual basis. The failure to do so will result in withdrawal of ethics clearance. It is the responsibility of the researcher and the supervisor to apply for recertification.

Please note that you are required to submit a Notification of Completion of Study form together with an abstract to the DUT-IREC office on completion of your study.

Yours Sincerely

Prof J K Adam
Chairperson: DUT-IREC

Appendix B: Gatekeeper's Permission

Directorate for Research and Postgraduate Support
Durban University of Technology
Open House
P.O. Box 1334, Durban 4000
Tel.: 031-3732578/7
Fax: 031-3732948

1 March 2023

Mr Ngcebo Mkhize
c/o Department of Nursing
Faculty of Health Sciences
Durban University of Technology

Dear Mr Mkhize

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted **Gatekeeper Permission** for you to conduct your research "Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal." at the Durban University of Technology. **Kindly note that this letter must be issued to the IREC for approval before you commence data collection**.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

Upon completion of your research project, you are requested to share the summary of your key research findings.

Kind regards.
Yours sincerely

_____
DR V GOVENDER
ACTING-DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE

Appendix C: Permission Request Letter to Departments

07 March 2023

Att: The Head of Department

Durban University of technology

Dear Dr. /Prof.

RE: REQUESTING PERMISSION TO RECRUIT AND CONDUCT RESEARCH STUDY AMONG STUDENT IN YOUR DEPARTMENT

I am Ngcebo Mkhize a MHS: Nursing student from the Durban University of Technology (DUT), I hereby request permission to recruit and collect data from the students in your department.

My research study topic is: Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal.

Please note that the gatekeeper's approval letter and the ethical clearance letter attached below.

Your kind response will be highly appreciated.

Kind Regards

Ngcebo Mkhize

Appendix C1: Sample of approval letter from HOD

DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

8 March 2023
Mr Ngcebo Mkhize
c/o Department of Nursing
Faculty of Health Sciences
Durban University of Technology

Dear Mr Mkhize

PERMISSION TO CONDUCT RESEARCH AMONG NURSING STUDENTS AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that on behalf of the Acting HoD and HoP (Department of Nursing) you are hereby granted permission to access undergraduate nursing students to interview them for your research titled "Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal."

Yours sincerely,

Dr DG. Sokhela

Appendix D: Letter of information (English)

LETTER OF INFORMATION

Title of the Research Study: Knowledge, attitude, and practices of students regarding the access to antiretroviral therapy in a university of technology, KwaZulu-Natal

Principal Investigator/researcher: Ngcebo Simo Mkhize, B-Tech of Health Sciences in Nursing

Co-Investigator/s/supervisor/s: Prof T.S.P Ngxongo – D Nursing (Supervisor) and

Dr N.P Zikalala- PHD Health Sciences (Co-supervisor)

Brief Introduction and Purpose of the Study: There is evidence that more than 30% of known HIV infected individual's aged between 15 and 49 years worldwide are not accessing ART. There is research evidence that South Africa is one of the countries that are mostly affected by HIV/AIDS and also has the highest number of people living with HIV who do not have access to ART. This includes students in higher education institutions. The aim of this study is to explore and describe the knowledge, attitude and practices of students from a selected University of Technology in KwaZulu-Natal regarding access to ART. Therefore, I intent to collect data from undergraduates' students using one-on-one semi-structured interviews.

Dear Prospective Participant

My name is Mr Ngcebo Mkhize. I am a student in the Nursing Department in the Faculty of Health Sciences at the Durban University of Technology registered for Master's Degree in Health Science. I am currently doing a research project for my Master's degree.

I would like to invite you to participate in my research project.

Research is a series of steps used to gather and analyse information in order to better understand a subject or problem and/or find solutions.

Participation in the study is voluntary. I will first give you full information about the study so that you are able to give an informed consent. I will collect data either via MS-Teams or face to face depending on your choice and availability. The interview will be one-on-one (meaning just between me and you) and will be semi-structured (meaning although I will be having a few pre-determined questions but you will be free to answer as you please). The study setting is Indumiso Campus in Pietermaritzburg, the capital of KZN.

As Participant

- The participation is voluntary.
- You have a right to withdraw from the study anytime you feel like.
- You will not be expected to use your real name throughout the study (anonymity).
- Each interview is anticipated to last for 30-45 minutes per session to prevent interviewee fatigue and discomfort.
- You can direct contact the researcher for clarity or more information.

Risks or Discomforts to the Participant: This study will not use any form of medication or plausible, therefore there will be no foreseeable risks to participants.

Reason/s why the Participant May Be Withdrawn from the Study: You will be allowed to voluntary withdraw from the study at any point if you choose to do so without any consequences to you.

Benefits: Participant - will enable to express his/her experience regarding the matter. While the researcher - compile and submit the research dissertation; which also adds new information on the existing knowledge

Remuneration: Participation in this study is completely voluntary, and the participant will not be paid in any manner.

Costs of the Study: Throughout the study, there will be no cost to participant.

Confidentiality: I will not be using any of your personal information on the research documents but instead will use codes in order to protect your personal information. All data collected will be used only for the purpose of this study. I will retain all research

documents for five years at home in my personal lockable steel closet before destroying them.

Results: At the end of the research project, I will collate and prepare a bound copy of the dissertation. This will be available in the DUT website and also in your head office. You are free to access the copy. In an attempt to disseminate the research findings and recommendations, I also plan to write a paper for publication in accredited journals and to present findings in national and international conferences where opportunity avails.

Research-related Injury: The nature of the study does not pose any potential risk of injury to you as the participants.

Storage of all electronic and hard copies including tape recordings: All collected data will be kept in a safe, secure area for the research duration and will be stored in a locked cupboard. All electronic data will be secured with a secret code only known to the researcher. In line with the research and institutional policy, all data will be kept for five years on completion of the study after which hard copies (paper based) will be destroyed by shredding and soft copies (electronic) wiped off.

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

- Researcher: Ngcebo S. Mkhize Tel:0638839080 Email: 21205364@dut4life.ac.za
- Supervisor: Prof TSP. Ngxongo Tel: 0313732609 Email: thembelihlen@dut.ac.za
  Or
- The DUT-Institutional Research Ethics Administrator on 031 373 2375.

Complaints can be reported to the Acting Director: Research and Postgraduate Support on researchdirector@dut.ac.za

Appendix D1: Letter of information (isiZulu)

ULWAZI NGOCWANINGO

Isihloko sogcwaningo: Knowledge, attitude, and practices of student regarding access of antiretroviral therapy in a university of technology, KwaZulu-Natal

Ongumcwaningi: Ngcebo Simo Mkhize, B-Tech of Health Sciences in Nursing

Aboqondisi bocwaningo: Prof T.S.P Ngxongo – D Nursing (Supervisor) and

Dr N.P Zikalala- PhD Health Sciences (Co-supervisor)

Isingeniso Kanye nenhloso yocwaningo: Kunobufakaza bokuthi emhlabeni wonke jikelele abantu abaneminyaka ephakathu kuku 15 kuya 49 ubudala balinganiselwa ngaphekuzulu kuka 30% baphila negciwane lesandulela (HIV) kodwa abayithathi imishanguzo (ART). Iningizimu Africa nayo ingelinye lamazwa ahlaselwe ilolubhubhane, kanti futhi baningi abantu abaphila nalo igciwane kodwa abayithathi imishanguzo. Lapho sibala nabafundi abasezikhungweni zemfundo ephakeme. Inhloso yocwaningo lanamuhla ukuhlola ulwazi, sichaze indlela yokubuka Kanye nokwenza kwabafundi base Nyuvesi Yezobuchwepheshe eKwaZulu-Natal mayelana nokutholakala kwa ART. Ngaleyondlela, mina njengocwaningi ngizoxoxa nabafundi ngamunye-ngamunye ngenhloso yokucoshela ulwazi mayelana nesihloko.

Ngiyabingelela

Igama Ngcebo Mkhize. Ngiwomfundi, ngenza ibanga le Master's Degree Nursing, ngaphansi kwe Faculty yakwa Health Sciences, eNyuvesi yaseThekwini Yezobucwepheshe. Lolu cwaningo luyingxenye yolwazi oluyimpoqo ukuthi umfundi abenalo uma unze lelibanga (Masters).

Ngiyakumeme ekubeni ingxenye yalolucwaningo

Lolucwaningo lunezigaba izisetshenzisiwe ukuthola kuphinde kuhlaziywe ulwazi ukuze kwakheke isithombe isiphelele ngenkinga ekhona noma isixazululo.

Ukuba ingxenye yocwaningo kuyisinqumo sakho. Mina njengo mcwaningi ngizokunika lonke ulwazi mayelana nocwaningo Kanye nokulindelekile kuwe. Ulwazi luyocoshelwa ngenkulumo ezoba Phakathi kwami nawe ku Teams noma ubuso-nobuso. Inkulumo yethu inembuzo ehleliwe kodwa angeke ilandelwe leyomibuzo njengobe injalo ngenhloso yokuvumela ukwazi ukuphendula ngendlela uyobe uzizwa ngayo. Lolucwaningo lwenzelwa eNdumiso Campus, iseMgungundlovu, ikuyinhloko dolobha yaKwaZulu-Natal.

Njengengxenye Yocwaningo

- Ukuba nyingxenye yocwaningo kuyisinqumo sakho
- Unelungelo lokuhoxisa ubulunga bakho noma kunini
- Awulindelekile ukuthi usebenzise ingama lakho kululu cwaningo
- Inkulumo ngayinye ilindeleke ukuthi ithathe imizuzu engu 30-45, ukuze kuqinisekiswe ukuthi wena awukhathali.
- Njengengxenye ocwaningo ungaxhumana nomcwaningi uma kukhona ulwazi uludingayo mayelana nocwaningo.

Ubungozi ngokuba ingxenye: Abukho ubungozi obulindelekile, kanti futhi angeke kusetshenziswe mithi kulolu cwaningo.

Isizathu sokuhoxa ekubeni inxenye yocwaningo: Ivumelekile ukuhoxa kucwaningo noma kunini ngaphandle kokuthathelwa izinyathelo.

Inzuzo: Njengengxenye yocwaningo – uhlomula ngolwazi kanye nesipiliyoni sokwenziwe kocwaningo. Ngakolunye uhlangothi, umcwaningi – uzohlanganisa lonke ulwazi olusha alutholile ngocwaningo aluhambise ngenhloso yokuphothula izifundo zakhe.

Iholo: Ilikho iholo olitholayo ngokuba ingxenye yalolu cwaningo.

Izindleko zocwaningo: Akukho zindleko eziyobhekana nawe ngokuba ingxenye yocwaningo.

Ukuphepha Kwakho: Imininingwane yakho iyogcinwa iyimfihlo angeke ivezwe uma sekushicilelwa ucwaningo. Lonke ulwazi olutholiwe luyosentshenziselwa okuhlangene nalolu cwaningo kuphe. Umcwaningi uyolugcina lonke ekhaya ulwazi olutholakele iminyaka emihlanu baphambi kokuba alulahle.

Imiphumela: Ekugcineni kocwaningo, umcwaningi uyohlanganisa usomqulu wolwazi olusha. Loyo somqulu uyotholakala mahala ezinkundleni zosomqulu be Nyuvesi yaseThekwini Yezobuchwepheshe. Ukusabalalisa lolulwazi, umcwaningi uyoshicilela kumaphephabhuku aphinde athule kwizinkomfa zakuzwe lonke lokho okuyobe kutholwe ucwaningo.

Ikulimala okugxumene nocwaningo: Lolu uhlobo locwaningo olungabeki muntu encupheni yokulimala.

Ukugcinwa kolwazi oluqoqwe kanye noluqoshiwe: Lonke ulwazi luyogcinwa endaweni ephephile ngesikhathi socwaningo, kuyothi lapho seluqediwe ucwaningo kuyothathwa lonke lolulwazi luvalelwe ekhabetheni lomcwaningi iminyaka emihlanu.

Umuntu ongamuthinta mayelana nemibuzo:

- Mcwaningi: Ngcebo S. Mkhize Tel:0638839080 Email: 21205364@dut4life.ac.za
- Obhekele umcwaningi: Prof TSP. Ngxongo Tel: 0313732609 Email: thembelihlen@dut.ac.za
  noma
- The DUT-Institutional Research Ethics Administrator on 031 373 2375.

Izikhalazo zingabikwa kuMqondisi wesikhashana:Research and Postgraduate Support ku researchdirector@dut.ac.za

Appendix E: Consent (English)

CONSENT

Title of the Research Study: Knowledge, attitude, and practices of student regarding access of antiretroviral therapy in a university of technology, KwaZulu-Natal

Principal Investigator/researcher: Ngcebo Simo Mkhize, B-Tech of Health Sciences in Nursing

Co-Investigator/s/supervisor/s: Prof T.S.P Ngxongo – D Nursing (Supervisor) and

Dr N.P Zikalala- PHD Health Sciences (Co-supervisor)

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher Ngcebo S. Mkhize (name of researcher 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 computerised 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/Right Thumbprint

I, Ngcebo S. Mkhize (name of researcher) herewith confirm that the above participant has been fully informed about the nature, condition and risk of the above study.

Full Name of Researcher	Date	Signature

Full Name of Witness (If applicable)	Date	Signature

Full Names of Legal Guardian	Date	Signature

Appendix E1: Consent Form (Isizulu)

Ifomu Lokuvuma

Isihloko socwaningo: Knowledge, attitude, and practices of student regarding access of antiretroviral therapy in a university of technology, KwaZulu-Natal

Umcwaningi: Ngcebo Simo Mkhize, B-Tech of Health Sciences in Nursing

Abasizi bomcwaningi: Prof T.S.P Ngxongo – D Nursing (Supervisor) and Dr N.P Zikalala- PHD Health Sciences (Co-supervisor)

Inqubo mgomo ngesivumelwano sokuba yinxenye yocwaningo:

- Ngilapha ukuqinisekisa ukuthi umcwaningi: Ngcebo S. Mkhize (igama lomcwaningi) ungazisile ngobunjalo, ubuhle kanya nobungozi bokuba yinxenye yalolucwaning – Inombolo yezomthetho ngokuqhutshwa kwalolucwaningo:

  _____

- Ngiyavuma nginikeziwe, ngafunda ngaqonda kusomqulo oshicilelwa obuchaza kabanzi ngalolucwaningo.
- Ngiyazi ukuthi imiphumela yocwaningo iyoyigcina iyimfinhlo imininingwane yami singabala, ubulili, iminyaka, inombolo kamazisi kanye nokunye.
- Ngokwazi okudingwa ucwaningo, ngiyavuma ukuthi lonke ulwazi oluzoqoqwa umcwaningi angaluhluza ngobucwepheshe be (computer).
- Ngingakwazi ukuhoxa ekubeni inxenye yogcwaningo noma kunini ngaphandla kokusatshiswa nanoma ingaluphi uhlobo. Ngibenalo ithuba lokubuza imibuzo, kanti (ngenkululeko yezifiso zami) ngiyazibophezele ekubeni inxenye yalolu cwaningo.

- Ngiyakuqonda ukuthi lubalulekile ulwazi olusha oluzotholwa ngokuqhutshwa kwalolu cwaningo, kanti-ke noma iluphi ulwazi olutholakale ngokuba kwami inxenye yocwaningo ngiyokwazi ukulithola noma kunini.

Amagama akho aphelele	Usuku	Isikhathi	Sayina Lapha

Mina, Ngcebo S. MKhize (igama lomgcwaningi) ngiyaqinisekisa ukuthi lomuntu ongenhla wazisiwe ngobunjalo, izimo, ubuhle kanye nokunga ubungozi balolu gcwaningo.

Igama lomgcwaningi	Usuku	Sayina Lapha
Igama Longufakazi(uma ekhona)	Usuku	Sayina Lapha
Igama longumnakekeli (uma ekhona)	Usuku	Sayina Lapha

Appendix F: Interview Guide (English)

Participant code :

Venue :

Interviewer :

Date of Interview : _____ Time of Interview: _____

Tittle of the study: Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal.

SECTION A: DEMOGRAPHIC DATA

Gender:

Male	
Female	
Other	

Ethic:

African		White		Indian		Other	

Age:

18 – 25 yrs		26 – 35 yrs		36 – 45 yrs		46+ yrs	

Period within UoT:

6 – 12 months		12 – 24 months		26 – 36 months		+36 months	

Accommodation:

Res		Private		Home	

HIV Status:

Known		Unknown	

Where HIV test was done:

Campus		Else where		Not applicable (Never Tested)	

SECTION B: INTERVIEW QUESTIONS

1. KNOWLEDGE REGARDING ACCESS TO ART

Main Question:

- What is your knowledge about access to ART within the DUT?

Probing Questions

- How did you get to know about accessibility of ART in this UoT?
- What systems are used by universities to facilitate access to ART?

2. ATTITUDE OF STUDENTS REGARDING ACCESS TO ART

Man Question:

- What is your opinion regarding the accessibility of ART within the UoT?

Probing Questions

- How does this affect student requiring access to ART?
- Where would you consider accessing ART if you had to, and why?

3. PRACTICES OF STUDENTS REGARDING ACCESS TO ART

- What are the practices in this institution regarding students accessing ART?

Probing Questions

- What is your opinion about these practices?
- How are these practices influencing access of ART?

***NB*:** Further, probing will be done for each main question as necessary

---

CONCLUSION

- Stop recording
- Member Checking
- Thank the participant for participating

Appendix F1: Interview Guide (Isizulu)

Oyingxenye yocwaningo :

Indawo :

Umcwaningi :

Usuku :_____ Isikhathi: _____

Isihloko socwaningo: Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal.

ISIQESHANA A: ULWAZI NGAMI

Ubulili:

Ngowesilisa	
Ngowesifazane	
angibuhlukanisile	

Ubuhlanga:

Afrika		Ngimhlophe		uMndiya		Obunye	

iminyaka:

18 – 25 yrs		26 – 35 yrs		36 – 45 yrs		46+ yrs	

Isikhathi use UoT:

6 – 12 izinyanga		13 – 24 izinyanga		26 – 36 izinyanga		+36 Izinyanga	

Uhlala kuphi:

Esikoleni		Ngiqashile		Ekhaya	

Isimo segazi (HIV):

Ngiyasazi		Angisazi	

Walihlolela kephi igciwane lesandulela (HIV):

Ngaphakathi esikoleni		Kwenye indawo		Angkaze ngalihlola	

ISIQESHANA B: IMIBUZO EMIDE

1. **ULWAZI MAYELANA NOKUTHOLAKALA KWEMISHANGUZO (ART)**

   Umbuzo Oyinhloko:

   - Luthini ulwazi lwakho ngokutholakala kwama ART ngaphakathi eDUT?

   Imbuzo Eqhubekayo

   - Waze kanjani ngokufinyeleleka kwe-ART kule Nyuvesi?
   - Yiziphi izinhlelo ezisetshenziswa amanyuvesi ukwenza lula ukufinyelela ku-ART?

2. **INDLELA ABAFUNDI ABABONA NGAYO MAYELANA NOKUTHATHA U-ART**

   Umbuzo Oyinhloko:

   - Uthini umbono wakho mayelana nokutholakala kwema-ART ngaphakathi UoT?

   Imbuzo Eqhubekayo

   - Lokho kumthinta kanjani umfundi osuke edinga ukuthola u-ART?
   - Ngokwakho, ungafisa ukuyithatha kephi imishanguzo uma kufanele, futhi kungani?

3. **IMIKHUBA YABAFUNDI MAYELANA NOKUFINYELELA KU-ART**

   Umbuzo Oyinhloko:

   - Yiziphi izinqubo kulesi sikhungo mayelana nabafundi abathatha imishanguzo ye-ART?

   Imibuzo Eqhubekayo

   - Uthini umbono wakho ngale mikhuba?
   - Ngabe lemikhuba inamthelelamuni ekufinyeleleni kwabakundi kwimishanguzo ye-ART?

NB: Ngaphezu kwalokho, imibuzo eqhubekayo iyobakhona kunoma imuphi umbuzo uma kudingeka.

ISIPHETHO

Appendix G: Example of Transcription

Participant code : IN: #004

Venue : MS Teams

Interviewer : Ngcebo Mkhize (NS)

Date of Interview : 17 April 2023 Time of Interview: 16h00

Hello, my name is Ngcebo Mkhize. I am a student registered for Master's Degree of Health Science in Nursing at the Durban University of Technology. I am conducting a study about Knowledge, attitude, and practices of students regarding access to antiretroviral therapy in a university of technology, KwaZulu-Natal. Therefore, we are here for an interview which have a series of general questions that I would like to ask you. Please note there is no right or wrong answer into these questions, your honesty and opinions are of most importance to this study. This is not a formal interview it will be like a conversation, so please feel free to answer/ not answer and also to ask any questions at any time. Do you have any question before we proceed?

#004: No, thanks.

SECTION A: DEMOGRAPHIC DATA

NS: How do we identify you in terms of gender and ethic?

#004: I am an Indian, female

NS: Thank you, how old are you?

#004: I'm 19 years old

NS: How long you have been in this university of technology?

#004: It's my 2nd year now

NS: How is the university life so far?

#004: I'm not complaining, I think it because I'm still staying at home I only go on-campus to attend classes and come back home.

NS: Any idea on what is ART and/or what ART is used for?

#004: What I know is that, ART it is medication or a drug that is rolled out for those people who have already test positive for HIV in order to help them manage virus and continue to live a health life in comparison to not having any treatment prior to this and the condition being fatal.

NS: Okay. Do you know your HIV status?

#004: No, I don't

NS: if I may ask, what is the reason for you not being interested about knowing or testing for HIV?

#004: I haven't been in a situation where there was any form of sexual assault, and I also not have been consensual sexually active. So, there have been no reason for me to consent myself with an HIV status.

SECTION B: INTERVIEW QUESTIONS

NS: Okay, let look at your university. What is your knowledge about access to ART within your institution?

#004: I know that it is completely accessible at public clinic or hospital so it not necessarily needs to be in form of medical aid system and go to private hospital. Regarding my institution I know there is PEP and PrEP but I don't know about the availability of the actual ART.

NS: Where did you get that information?

#004: Just speaking to friends who stays at res, just in conversation and I end up with something like that because I never visited the campus clinic.

NS: How do you regard a person who's taking ART?

#004: There is absolutely no deference to me in my perception of that person. It makes no deference and it doesn't even strake me as something I would need to know about somebody else. It doesn't carry any wait or any factor in me knowing he/her as a person.

NS: As #004, when you test positive for HIV would you consider ART to manage this disease or other form of HIV management then ART? Why

#004: I feel like I would consider going with ART, because it is the one that I have commonly had of and as nursing student in particular common know to trust. So, I don't think there will be a doubt in my mind about deciding to go with ART.

NS: I think you know that we are the sick society that lives with HIV. So, how a UoT can assist students who might need ART during their course of studies within the institution?

#004: I think that, DUT having something in place with the campus clinic already would be a good idea because it something that is very accessible to students also to those lives at res with a regular transport to and from the campus. In terms of accessing like the actual going, I think that the clinic is fairly anonymous if not telling anybody that you are going because I know that there are lot of people who are HIV positive that would never want you to know that they are actual positive and that could be a lot to take it on as somebody who's probable younger because if you are a student we assuming that you in your 20's, it's not always a case but it common. And I feel like there is a sense of anonymous going to the clinic when my friend goes to the campus clinic there is no way that I would know. So, I think having ART accessible or available in the UoT it a good idea and it a safe way for student to regularly having access to it whenever they need it.

NS: Okay, academically how that assist or can assist students?

#004: It will defiantly assist them to maintain a suitable quality of life in order for them to be physically and mental well enough to continue presume with their studies.

NS: As a student and you currently stay at home, where can you access ART if you test positive for HIV? Why

#004: I would defiantly go to the clinic not in campus, because that would be just an extra lay of some protection to peers and there is less likelihood of running into somebody that I going to encounter because it possible that if go to the clinic on campus that I will run into someone that may want to know what I'm going to the clinic for. If I'm HIV positive and I lives at home I don't think I would go to the clinic campus, it would be properly another clinic.

NS: have you ever witness or had about discrimination or stigma towards people on ART within the UoT

#004: No, thankfully I haven't. I think as a nursing student would be a very tough conversation to have with somebody else because I would like to argue with them.

NS: What can you recommend from the institution to do in term of assist student to access ART?

#004: I think it very common for any setting to see things regarding ART especially in socially media. I think would be ideally in a way that is very quickly that mean it reaches people quicker and wouldn't it take as long for people to receive and share that information through social networks or platform that are already connected from the institution on. But in terms of making sure that you can reach up the mass amount of people is our phones are the way to go.

NS: How does an act of the UoT not providing ART affect students?

#004: I think ART not being accessible in the entire campus it makes life difficult to a lot of student who are not only living at res because they possible live in Pietermaritzburg but far from campus they often live in other cities. So this people are being put in a complete new environment and basically in regards to ART are now left stranded and they have to figure out their own way to make regular trips to that public clinic or hospital and that became something that is a problem to do where there is a fully flagged accessible clinic for any other medical need that they might have and it would make it easier if it was accessible to the clinic.

NS: Thank, I think we are at the end of our interview is there anything you would like to ask me or to add?

Appendix H: Analysis Record

DATA ANALYSIS

RESEARCH QUESTION	PARTICIPANTS RESPONSE	THEMES	ANALYSIS	
			MAJOR THEME	SUB-THEME
What is your knowledge about access to ART within the DUT?	I am quit not sure because I don't take ART and I never had from anyone about accessibility of ART at campus clinic. You know these things are private people don't talk about it. So, I really don't know if DUT do provide it or not.	Uncertain about access to ART within the UoT.	Knowledge regarding access to ART in the UoT.	Source of student knowledge.
What systems are used by universities to facilitate access to ART?	What I know is that DUT does provide HIV testing and counselling on-campus. I think, if you test HIV-positive they refer to Imbalenhle for ART initiation. Knowing HIV status is the first step to care, so I can regard this as one of the	Awareness of services available within the campus clinic and where to access to find those not available at UoT.	Current practices regarding accessing ART	UoT practices

	systems used by my university.			
What is your opinion regarding the accessibility of ART within the UoT?	I think for the campus clinics to provide ART will be a good move because I haven't had of any stigma toward students living with HIV and as students we spend most of our time at University and being on-campuses from Monday to Friday. Hence, most universities has the campus clinics which are regarded as part of primary health care (PHC) same as community clinics, and us as students we are part of the particular university community, so the DUT clinic shall	Campus is safer then local clinics. No travelling cost to and from the local clinic. Reduced of HIV related stigma within the campuses.	Factors that influence access to ART.	Factors that could facilitate improve access to ART. Existing factors influencing access to ART.

	provide such services regarded as first priority to students i.e. ART, and Family planning. If one of these is not available that means the institution need to go back to the drawing board because that mean students life are at risk. Commonly students do not have money, going to the surrounding clinic to get their treatment can be difficult and the closest clinic is Imbalenhle. I understand man can walk but for females they must take a taxi because Imbali is not safe. Therefore, accessing ART at campus clinic could			

	be more convenience then taking it from public clinics			
Where would you consider accessing ART if you had to, and why?	Defiantly the campus can be more convenience for me because I have classes to attend from Monday to Friday so can be easier for me to just access my medication while I'm on-campus. I also believe that in our university's stigma has been evaded, students understood and accept PLH which helps on ensuring adherence. If we can talk about public clinic, there is too much judgement both from staff and community especial	Positive attitude towards access of ART. Convenience of campus clinic. Stigma at local clinics Universities has evaded stigma, students have understood and accept PLH.	Attitude and perception Access point for ART Factors that can influence accessibility of ART in a UoT.	Attitude and perception regarding ART programme, Personal choices/preference Challenges encountered Existing factors

	towards people at our age group and I don't know why.	Fear of being judged at public clinic		Factor that could facilitate or improved access
What are the practices in your institution regarding access to ART by students?	I'm not sure but I assume that students on ART are being referred to the surround clinic, Imbalenhle clinic as first choice or clinic around their residents. Possible some students are still taking ART from their home town clinic while others prefer to access from pharmacy but I will say that depends on individual affordability. Maybe some are not even talking ART because it not available within the campus.	Student are being refered to surrounding clinics. Some take ART from pharmacy.	Current practices. Access points for ART	UoT practices. Awareness of the UoT, and alternative points.
How these practices	I think they influence it	Stigma at public clinics	Factors that influence accessibility	Existing factors influencing access to ART.

influence access to ART?	positively but …….. Yes, known one's HIV status it a good thing and some people do start ART immediately after finding out that they are HIV-positive but not everyone. Yet, they are people who are not taking ART's but they know that they are HIV positive some it because ART is not available at campus clinic so they fear stigma at public clinics while others it because they don't wat to. Moreover, some HIV positive are in the mission of spreading the virus because they say were also infected by others.	Immediately initiation of ART.	of ART in a UoT. Attitude and perception.	Personal choice/preference.

Appendix I: Editing certificate

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EDITING CERTIFICATE

Re: **Ngcebo Simo Mkhize**
Master's dissertation DUT: **KNOWLEDGE, ATTITUDE, AND PRACTICES OF STUDENTS REGARDING ACCESS TO ANTIRETROVIRAL THERAPY IN A UNIVERSITY OF TECHNOLOGY IN KWAZULU-NATAL**

I confirm that I have edited this dissertation and the references for clarity, language and layout. I returned the document to the author with track changes so correct implementation of the changes and clarifications requested in the text and references is the responsibility of the author. The intellectual content of the document is the responsibility of the author. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at the University of Cape Town was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I was a part-time lecturer in the Department of Homoeopathy at the Durban University of Technology for 13 years and supervised many master's degree dissertations during that period.

Dr Richard Steele
08 November 2023
per email