

**FACTORS CONTRIBUTING TO POOR ADHERENCE TO A FIXED DOSE  
COMBINATION TREATMENT AMONG PATIENTS LIVING WITH HUMAN  
IMMUNODEFICIENCY VIRUS AT HC BOSHOF COMMUNITY HEALTH CENTRE  
IN SEKHUKHUNE DISTRICT, LIMPOPO PROVINCE**

By

**MATLALA MALEBELEKO JANE**

Dissertation

Submitted in fulfilment of the requirements for the degree of

**MASTER OF NURSING**

In the

**FACULTY OF HEALTH SCIENCES**

**(School of Nursing)**

At the

**UNIVERSITY OF LIMPOPO**

**SUPERVISER: PROF PM MAMOGOBO**

**CO-SUPERVISOR: DR TE MUTSHATSHI**

**2023**

## DECLARATION

I, Matlala Malebeleko Jane hereby declare that the study titled “factors contributing to poor adherence to a fixed dose combination treatment among patients living with HIV at HC Boshoff Community Health Centre in Sekhukhune District, Limpopo Province” is my work and that all sources and quotes have been indicated and acknowledged using complete references and that this work has not been submitted by me before for any other degree at this or any other institution of higher education.

SIGNATURE : *Matlala MJ*

DATE: 17/10.2022

## **DEDICATION**

This study is dedicated to my one and only lovely daughter Onthatile Princess and grandmother Matlala Julia for the support, encouragement, perseverance, and effort shown to me throughout this study. You are my source of energy and wisdom; you have been my inspiration in my life.

## ACKNOWLEDGEMENT

First and foremost, I would like to thank God for giving me the wisdom, strength, perseverance, and courage to cope and complete the research study. I also want to thank the following people for their contribution to this study:

- My warmest thanks are due to all the research study participants who allowed me to enter their personal space and shared their personal experiences related to the phenomenon under study.
- The University of Limpopo, for allowing me to further my studies.
- The Department of Health and HC Boshoff CHC for the permission granted to conduct my Research study.
- My supervisors, Prof PM Mamogobo and DR TE Mutshatshi for their guidance, support, and encouragement throughout this study.
- My two aunts, Matlala Chidi and Mphahlele Alinah for their support and encouragement.
- My partner Magabane Sello for his unconditional love, patience, understanding, support, and encouragement.
- My mother Makgatho Ellita for her prayers and support she gave me throughout my study.

## **ABSTRACT**

### **BACKGROUND**

The South African Department of Health introduced the use of Fixed Dose Combination antiretroviral regimens to adhere to treatment in 2012, which reduce drug toxicity, keep patients on life-long ART, prevent the progression of HIV disease and prevent HIV/AIDS-related death. Since the introduction of Fixed Dose Combination (FDC), it has become the cornerstone in the treatment of HIV. FDCs' fundamental benefit is that they simplify a patient's regimen. When compared to the individual components, the usage of FDCs has been associated with reduced pill load and improved adherence.

### **RESEARCH METHOD**

In this study, a qualitative research approach was used. This approach was considered to be appropriate and relevant in this study as the researcher was intended to describe factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province. Data was collected through semi-structured face-to-face interviews and was analysed using open coding where themes and sub-themes were developed.

### **RESULTS**

The study revealed that there are several factors that contributes to poor adherence to HIV positive patients who are on FDC, they are divided into 6 themes and 14 subthemes. Strategies were developed to improve adherence to a fixed-dose combination treatment among patients living with HIV.

### **CONCLUSION**

The study concluded that patient has several factors that hinder their adherence to FDC at HC Boshoff CHC in Limpopo. These factors include psychological experiences, social disclosure, behavioural constraints, side effects, etc.

**Keywords:** Factors, Adherence, Human Deficiency Virus, Patient, Fixed Dose Combination.

## **DEFINITIONS OF CONCEPTS**

### **Factors**

Factors are characteristics of the phenomenon under study that express the difference based on the occurrence or categorical groups (Vermunt, Magidson, Lewis-Beck, Bryman & Lian, 2014). The categorical group may include persons, places, or things related to the phenomenon under study. In this study, factors would include the human behaviours or circumstances that give rise to poor adherence to antiretroviral treatment among patients diagnosed with Human Immunodeficiency Virus (HIV).

### **Adherence**

Adherence is described as taking all prescriptions as directed by the doctor at the right time and in the right amount (Yu, Luo, Huang, Wang & Xiao, 2018). In this study adherence is an active choice of patients to follow the treatment as prescribed and advised by the healthcare worker and take full responsibility for well-being related to lifestyle adaption to have to make related the diagnosis.

### **Human immunodeficiency virus (HIV)**

The human immunodeficiency virus is a retrovirus that attacks or inhibits the function of immune system cells that assist the body to fight infections, increasing a person's susceptibility to additional infections and disorders (UNAIDS,2021). In this study, the definition was used as it is.

### **Patient**

A patient is a person getting necessary professional services that are guided by a certified healer toward maintaining, enhancing, or protecting their health or reducing disease, disability, or pain (Stoppler, 2021). In this study, a patient is a person who was diagnosed HIV positive and is on antiretroviral treatment.

### **Fixed dose combination**

Two or more active ingredients or drugs are contained in a single dosage form, such as capsules or tablets (Moriarty, Bennett & Fahey, 2019). In this study, the definition of fixed dose combination was used as it is.

### **Viral load**

The HIV viral load is the total number of copies of HIV nucleic acid in the blood of someone living with HIV. It is measured as the number of copies of the virus in one millilitre of blood (UNAIDS, 2018). In this study, the definition of HIV viral load was used as it is.

### **Viral suppression**

Viral suppression occurs when antiretroviral therapy (ART) lowers a person's viral load (HIV RNA) to an undetectable level. (Ali & Yirtaw, 2019). In this study, viral suppression is when a patient's viral load is <1000 copies.

### **Unsuppressed HIV viral load**

When antiretroviral medication fails to reduce a person's viral load, they have an unsuppressed viral load, which is linked to poor survival and increased HIV transmission (Davey, Abrahams, Feinberg, Prins, Medeossi & Darkon, 2018). In this study unsuppressed viral load is when the patient's viral load is >1000 copies.

### **Undetectable viral load**

When you have an undetectable viral load, your HIV has been so drastically suppressed by antiretroviral therapy (ART) that it is no longer detectable with a routine blood test (Pebody, 2019). In this study, undetectable viral load is when a patient's viral load is less than 1000 copies.

## **LIST OF ABBREVIATIONS**

- AIDS-** Acquired Immunodeficiency Syndrome
- ART-** Antiretroviral therapy
- ARV-** Antiretroviral
- CHC-** Community Health Centre
- DOH-** Department of Health
- FDC-** Fixed-Dose Combination
- HAART-** Highly Active Antiretroviral Therapy
- HIV-** Human Immunodeficiency Virus
- PLWH-** People Living With HIV/AIDS
- SA-** South Africa
- VL-** Viral load
- VLS-** Viral load Suppression
- WHO-** World Health Organisation



## Table of Contents

DECLARATION.....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
DEFINITIONS OF CONCEPTS.....	v
LIST OF ABBREVIATIONS.....	vii
CHAPTER ONE .....	1
1.1 INTRODUCTION AND BACKGROUND.....	1
1.2 PROBLEM STATEMENT .....	6
1.3 THEORETICAL FRAMEWORK.....	7
1.4 PURPOSE OF THE STUDY.....	9
1.5 OBJECTIVES OF THE STUDY.....	9
1.6 RESEARCH QUESTION.....	10
1.7 RESEARCH METHODOLOGY .....	10
1.8 THE DISSERTATION'S SUMMARY .....	10
1.9 CONCLUSION .....	11
CHAPTER TWO.....	11
2.1 INTRODUCTION.....	12
2.2 BENEFITS OF ADHERENCE TO ART .....	13
2.3 MEASURE OF ADHERENCE .....	14
2.4 FACTORS CONTRIBUTING TO POOR ADHERENCE .....	14
2.5 BENEFITS OF FDC.....	17
2.6 ADVANTAGES OF FDCs.....	17
2.7 STRATEGIES TO IMPROVE AND SUPPORT ADHERENCE .....	18
2.8 CONCLUSION .....	19
CHAPTER THREE .....	19
3.1 INTRODUCTION.....	20
3.2 RESEARCH SETTING.....	20
3.3 RESEARCH METHODOLOGY .....	21
3.4 MEASURE TO ENSURE TRUSTWORTHINESS.....	29
3.5 ETHICAL CONSIDERATION .....	31
3.6 CONCLUSION .....	34

CHAPTER FOUR.....	35
4.1 INTRODUCTION.....	35
4.2 PRESENTATION OF THE RESULTS.....	35
4.3 THE PRESENTATION OF THEMES AND SUB-THEMES.....	37
4.4 THEORETICAL FRAMEWORK AND RESEARCH FINDINGS.....	59
4.5 CONCLUSION.....	59
CHAPTER 5.....	60
5.1 INTRODUCTION.....	60
5.2 SUMMARY OF THE STUDY RESULTS.....	61
5.3 RECOMMENDATION FOR THE RESEARCH STUDY BASED ON THEMES... .....	61
5.4 LIMITATIONS OF THE STUDY.....	66
5.5 CONCLUSION.....	66
REFERENCES.....	66
Annexure A: Interview Guide (English vision).....	76
Annexure B: Interview guide (Sepedi vision).....	77
Annexure C: Letter of permission.....	78
Annexure D: Letter of permission.....	79
Annexure E: Informed Consent Form.....	80
Annexure F: Budget.....	81
Annexure G: Time Frame.....	82
Annexure H: Faculty Approval of Proposal.....	83
Annexure I: TREC Approval Letter.....	84
Annexure J: Limpopo Department of Health Permission Letter.....	85
Annexure I: Editing Certificate.....	86
Appendix J: Turnitin Report.....	87

## **CHAPTER ONE OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION AND BACKGROUND**

This study's core is a fixed dose (FDC), the combination of antiretroviral drug treatment in Human Immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) was introduced in 1996. Thus, improve adherence to antiretroviral therapy. Since then, ninety-five percent of individuals adhere to treatment. Thus, to improve plasma concentration with antiretroviral concentration to reach viral suppression that would prevent the multiplication of the virus (Iacob, Iacob & Jugulete, 2017). When the complexity of the regimen has been identified as a barrier to good adherence. A Fixed Dose Combination (FDC) was introduced where one pill containing multiple active drugs simplified pill taking (Hirasen, Evans, Maskew, Sanne, Shearer, Govathson, Malete, Kluberg & Fox, 2018). Moreover, utilising a combination of antiretroviral treatment (ART), which consists of two nucleoside reverse transcriptase inhibitors (NRTIs), plus either a non-nucleoside reverse transcriptase inhibitor (NNRTI) or protease inhibitor (PI). It has significantly proven to lower mortality and morbidity associated with HIV illness (Kauf, Davis, Earnshaw & Davis, 2012).

Moreover, since the introduction of Fixed Dose Combination (FDC), it has become the cornerstone in the treatment of HIV. FDC consists of two or more drugs in one single tablet or capsule. FDCs' fundamental benefit is that they simplify a patient's regimen. When compared to the individual components, the usage of FDCs has been associated with reduced pill load and improved adherence (Van Galen, Hellen & Nieuwkerk, 2014).

The ninety-five percent adherence to treatment reflects the ability of the individual adherence to treatment. Therefore, pointing out the ability of the individual to follow the recommendations and teachings provided by health workers on how to take treatment (Wedajo, Degu, Deribew & Ambaw, 2022; Abadiga, Hasen, Mosisa & Abadisa, 2020)). Most importantly, to achieve the best clinical results for persons living with HIV and to lower the risk of HIV transmission to uninfected partners, long-term adherence to antiretroviral medication (ART) is crucial. The ability of the individual to adhere to treatment also ensures a healthy life and well-being in the individual

adhering to the fixed-dose treatment as a biomedical intervention reduces transmission of infection to HIV negative partner, improves survival, including positive medical outcomes among HIV-positive individuals. As it reduces the occurrence of opportunistic infections and improves their wellness that ultimately to the aspiration of 2030 Agenda for Sustainable Development that aspire for the end of HIV epidemic globally (the United Nations, 2015; the National Department of Health, South Africa, 2017). Furthermore, poor adherence to antiretroviral treatment reduces the CD4 count and increases susceptibility to drug resistance and deaths associated with untreated HIV and AIDS infection. The regimen complexity which is characterised by numerous pills, different dosing time and it has been established that inadequate adherence is significantly influenced by dosage directions.

The introduction of highly effective Antiretroviral Therapy (HAART) has changed the treatment of people living with Human Immunodeficiency Virus (PLWHIV). When patients are adhering optimally to a strong combination of ART, Human Immunodeficiency Virus (HIV) is transformed from a potentially fatal condition to a manageable chronic condition. FDC has several societal and individual benefits mediated by achieving viral suppression. Which reduces HIV-associated morbidity and mortality, increases health-related quality of life, and prevents the transmission of HIV. Single-tablet regimens which combine a complete treatment regimen into a single fixed-dose tablet can address regimen complexity and a high pill burden (Altice, Evuarherhe, Shina, Carter & Beaubrun, 2019). The South African Department of Health (2012) introduced the use of Fixed Dose Combination antiretroviral regimens to adhere to treatment, reduce drug toxicity, keep patients on life-long ART, prevent the progression of HIV disease and prevent HIV and /AIDS-related death. FDC regimens are being upgraded as a first-line regimen in treatment access programmes worldwide (Khopotso, 2012).

Globally, the benefits of FDC in Human immunodeficiency is viral load suppression in sustaining and improving the lives of people living with HIV and /AIDS have been demonstrated. A lack of viral load suppression has been linked to poor patient clinical outcomes, which have been demonstrated in the literature to be negatively impacted by insufficient adherence to treatment regimens (Mogosetsi, Mabuza & Ogunbanjo, 2018). The World Health Organization (WHO) recommended annual routine monitoring for all patients on ART in 2013 because it helps determine how well the

treatment is working. When a patient has been receiving ART for at least six months and their viral load is elevated or non-suppressed (VL>1000 copies/ml). This may be a sign that their treatment has failed to owe to antiretroviral resistance or poor adherence to the prescribed regimen (WHO, 2013). In 2010, World Health Organisation (WHO) released a guideline to be used when treating and preventing HIV infection and providing lifelong ART to HIV-positive patients, regardless of their CD4 count (Sweileh, 2018).

The 90-90-90 targets were introduced by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and WHO in 2013. Thus, ensuring that 90% of all HIV-positive individuals received a diagnosis. Thus, 90% of those who received a diagnosis received ART, and 90% of those who were receiving treatment had their viral load suppressed (UNAIDS, 2014). At least 73% of HIV-positive individuals will have their viral loads reduced when these three aspects of the aim are met. Therefore, by meeting these goals by 2020, the world would achieve success by ending the AIDS pandemic by 2030 (Jamieson & Kelleran, 2016). Achieving the 90-90-90 objective established by WHO and UNAIDS is a necessary step in ending HIV/AIDS as a public health issue and ensuring that millions of individuals receive successful lifestyle therapy. By 2020, the 90-90-90 objective aims to identify 90% of all HIV-positive individuals, treat 90% of those identified, and achieve viral suppression in 90% of those treated. (Abidiga, Hasen, Mosisa & Abdisa, 2020).

This strategy aims to put the HIV epidemic under control and to ensure that people are tested and treated. It has been estimated that 19, 8 million people were tested. Thus, about 13, 4 million people do know their status. Therefore, 17 million people are initiated on ART and only 11, 6 million are virally suppressed. This means that almost a third of HIV-positive people who were initiated on ART are not virally suppressed (Bain, Nkoke & Noubiap, 2017).

One of the biggest obstacles to patients achieving and maintaining viral load reduction is poor adherence to antiretroviral medication. The patient-related, structural, provider-related, disease-related, medication-related, and psychological obstacles have all been identified as contributing factors to poor adherence. Adolescents' transitory life stage is marked by their physical, mental, and intellectual growth, which presents extremely specific difficulties for adherence to ART. Management of teenagers using

ART should consider the complexity of the biological and psychological changes that occur in their lives as well as the results of adherence (Van Wyk & Davids, 2019). The effective use of antiretroviral agents does not only require good adherence to therapy but also requires patients to sustain and continue adhering to treatment throughout their life for their viral load to be successfully suppressed. ART has proven to delay HIV progress to AIDS which results in greater and more sustained virology and immunologic response and it also improves survival (Schachter, 2013).

The adherence rate of medication should be maintained at 95% or above to optimise antiretroviral outcomes and enhance viral suppression. However, it varies among different countries globally. A study done in China shows that among the 207 participants, 87,0% reported good dosage adherence and 87,4% reported good time adherence. Therefore, 85,5% of the participants were categorised with good adherence while 14,5% with poor adherence (Yu, Luo, Chen, Huang, Wang & Xiao, 2018). Results show that dosing time adherence was associated crucially with a lower viral load and elevated CD4 count. Poor adherence to ART medication has been identified as an important factor in the emergence of drug-resistant HIV strains, which can be transmitted to others. A similar study done in Eastern Ethiopia results shows that the level of adherence was 85%. Adherence was more likely among patients between the age of 35years and 44years. Patients who did not disclose their serostatus and experienced depression were not adhering to their counterparts (Letta, Demissie, Oljira & Dessie, 2015).

According to the study done in India adherence to ART was assessed on 242 patients living with HIV and the majority of them were between the age group 25-39 years. One percent of the adherence rate for the whole 6 months was only seen in 31,7% of patients, <80% was noted in 49,8% and 9 of patients, having an optimal adherence rate of >95% in 81,4% (Basti, Mahesh, Bant & Bathija, 2017). A similar study done in Odisha indicated that 47,3% of patients who were on ART for less than 24 months are 2.1 times more at risk of becoming non-adherence and 48% are suffering from concurrent infections (Gupta & Das, 2019).

The study done in Ethiopia reported that 73,1% were adherent to their medication, and 69,5% of patients had no co-morbidities with other chronic conditions. In the absence of adverse drug reactions, 65.9% were knowledgeable about HIV and its treatment,

and 67,9% disclosed their HIV status to their families. Furthermore, about 45.9% of people had a CD4 count of 200–500 cells. Nevertheless, 38,0% were on stage 2, and 32,1% were on stage 1 (Abadiga, Hasen, Mosisa & Abdisa, 2019). A similar study was done in North Eastern Ethiopia; the study's environment had a 71,8% adherence rate to ART. Participants who did not inform their families of their HIV status were 88% less likely to take their ART medicine consistently than those who did inform their families about their HIV status. Participants who had never encountered pharmacological adverse effects were 2.69 times more likely to take their ART medicine as prescribed than those who had experienced pharmacological adverse effects (Legesse & Reta, 2019).

Therefore, based on the South African National Department of Health for the management of HIV. Patients who are eligible for FDC are newly initiated on ART, all HIV- positive pregnant women, and patients who are stable but also have various co-morbidities and TB co-infection, and the following risk factors should be considered when initiating ART; the patient's chronic conditions, lifestyle behaviour such as several sexual partners, alcohol, and drug use (NDoH,2019). Thus, to enhance adherence, it is necessary to work together with the patient to identify and remove any personal barriers to adherence. This is possible if medical professionals set aside time to inform each patient, prepare for adherence, and give ongoing support throughout the course of therapy. This will also assist healthcare providers in continuous assessment of the patient, solving problems as well as dealing with their side effects and a good relationship should be addressed before the start of treatment and throughout the whole process (Ehlers & Tshisuyi, 2015).

The problem statement is a formulation of an issue or problem which is usually a gap and is identified within your area. A research problem addresses an existing gap in knowledge in your field of study to further investigations with other researchers. The problem should be original and challenging, but potentially achievable. The problem should be context, describe the precise issue, show relevance, and set the objective (McCombes, 2022). The problem statement of this research study will be discussed in full in the following paragraph.

The study findings on adherence to fixed-dose antiretroviral treatment in Limpopo Province indicate that adherence to treatment within Limpopo Province is 61% among

patients on antiretroviral treatment, which is lower than the required 95% expected benchmark to sustain viral suppression and prevent transmission from HIV-positive sexual partners to HIV negative partner, including to reduce disease progression, but within Letaba Hospital clinic, the study found 87% adherence. Factors that cause patients not to adhere to fixed dose combination therapy include the poor level of education and age.

Younger patients were found to be having poor adherence to treatment, with the use of alcohol being one factor that contributes to poor adherence (Mabunda, Ngamasana, Babalola, Zunza & Nyasulu, 2019). Since the inception of fixed-dose treatment, HC Boshoff CHC in the Sekhukhune district, one of the five districts in Limpopo Province, has minimal studies that establish the level of adherence to fixed-dose combination treatment among patients on antiretroviral treatment to improve individual adherence to treatment and also contribute to reaching the 95-95-95 strategy of UNAIDS that would halve and reduce the incidence of HIV.

## **1.2 PROBLEM STATEMENT**

The government has made significant efforts in response to HIV/AIDS including the roll-out of free ART, increased access to ART through various services, models, and implementation of the Test and Start Policy national-wide to support the attainment of the UNAIDS 90-90-90 target, whereby it has eventually increased the number of PLHIV who are on ART (UNAIDS, 2019). All these aimed to stop new HIV infections and achieve optimal viral suppression among patients on FDC. However, despite all the initiatives still, there are challenges in attaining the optimal benefits of FDC. Since the introduction and provision of antiretroviral treatment, especially in developing countries have reduced death and ill health associated with infection in sub-Saharan African countries which South Africa is included (Legesse & Reta, 2019).

According to WHO (2015), Adherence to ART is a key factor in determining viral suppression, transmission risk, disease progression, and mortality. At all phases of HIV illness, suboptimal adherence is a significant concern across all areas, and it is linked to a variety of patient- and program-related issues. Individual factors could include forgetfulness, being away from home, changes in a daily routine, depression



or other ailments, a lack of awareness of how treatments will benefit them, and drug or alcohol usage. The lack of surroundings that support those living with HIV, as well as HIV-related stigma and prejudice, may make it difficult for people to adhere to ART.

The researcher is one of the professional nurses allocated in the HC Boshoff community health centre (CHC) and has noticed that 72 out of 218 HIV-diagnosed patients have poor viral load suppression, and present with opportunistic infections like tuberculosis and pneumonia while on treatment. Study findings of Mabunda et al (2019) in Letaba, hospital within Limpopo Province revealed that although patients within the hospital are on antiretroviral therapy the hospital fails to have the desired suppression of 95% viral suppression as desired by the UNAIDS and National Department of Health of South Africa. There were several studies done to identify the causes of insufficient adherence, identify non-adherence, and design effective interventions to lessen and reinforce adherence that is contextual to individual patients' circumstances to enhance adherence.

### **1.3 THEORETICAL FRAMEWORK**

The nursing theory is an original and complete organisation of concepts that safeguards an intentional, methodical, and purposeful understanding of occurrences. Nurses can acquire knowledge that is pertinent to enhancing patient care through systematic inquiry, whether in nursing research or practice. This study was guided by the Health Belief Model (HBM) which includes six major concepts of the theoretical model. The theory guided the researcher in describing factors contributing to poor adherence (Marriner & Raile, 2005).

Based on the theoretical model, the health belief model includes;

- ❖ The severity of the potential sickness
- ❖ The person 's vulnerability to that illness
- ❖ The advantages of taking a preventive action
- ❖ The obstacles to taking those measures

The health belief model draws attention to this study because it focuses on addressing problem behaviours that raise due to health concerns. It suggested that a person's perception affects how they act regarding their health. It focuses on patient compliance and preventative health care practices, addresses the relationship between the

patient's beliefs, behaviours and assumes about a person's assessment of the threat posed by a health issue affects, how they behave in terms of seeking out health care (Marriner & Railer, 2005).

### **1.3.1 The six major concepts of the health belief model (Marriner & Railer, 2005)**

- *Perceived susceptibility*

Perceived susceptibility is a person's belief that an illness diagnosis is correct or that a health issue is personally meaningful. People who believe they are at risk for HIV/AIDS are more likely to use condoms to prevent contracting sexually transmitted infections.

- *Perceived severity*

Even if one is aware of their susceptibility, one would not act unless one believes the situation is severe enough to cause significant organic or social problems. Before adopting preventative measures such as using condoms to prevent HIV/AIDS infection, people must first regard HIV/AIDS as a serious infection with major ramifications and implications for their social and physical life.

- *Perceived benefits*

Is about the patient's belief that the treatment given can cure the illness/disease or help to prevent it. When HIV-positive patients believe that ARV medication given to them will cure the disease or improve their health.

- *Perceived costs*

Refer to the difficulty, length, and accessibility of treatment.

- *Motivation*

Includes the individuals' motivation to follow through with recommended therapy and a sense of obligation

- *Modifying factors*

This includes personality variables, patient satisfaction, and socio-demographic factors. Education level and other sociodemographic characteristics may influence a person's assessment of their vulnerability to and level of suffering from HIV/AIDS-related negative effects.

A psychological model called the health belief model (HBM) focuses on people's attitudes and beliefs to explain and predict their behaviour in terms of their health. The

health belief model has been adopted to explore different long- and short-term health behaviours which include sexual risk behaviours and HIV/AIDS transmission. According to HBM, individuals can take health-related action if they feel and believe that a negative health condition can be avoided. This will take preventative measures if they have a positive expectation. Thus, through implementing a recommended action the negative condition can be avoided not only but it is believed that it can be successful in performing the action which was recommended (Tarkang & Zotor, 2015).

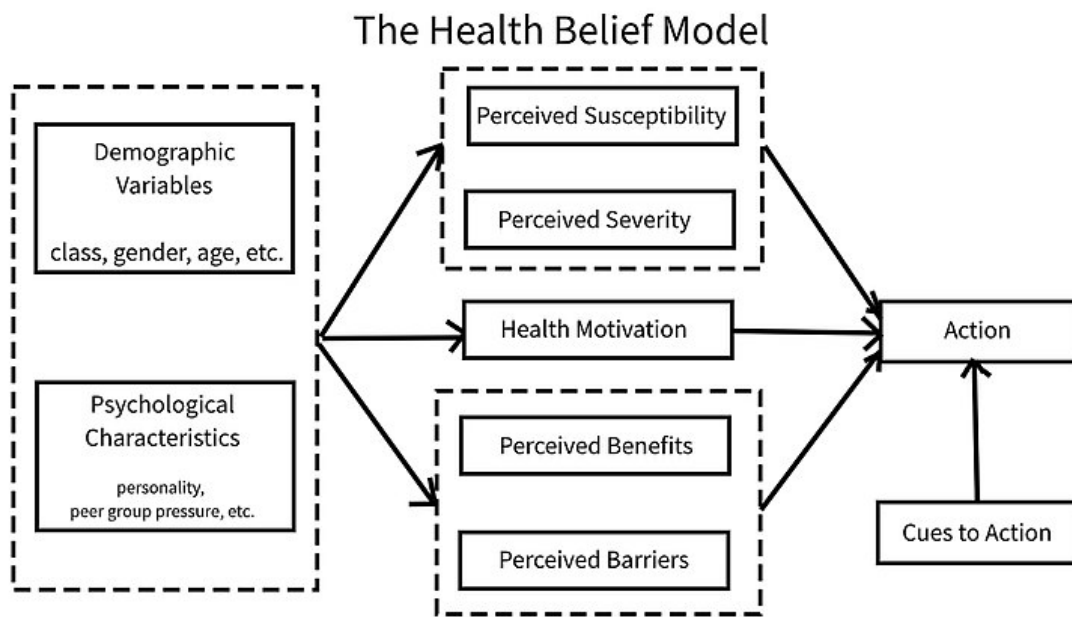


Figure 1. The Health Belief Model source: Accessed from [www.researchgate.net](http://www.researchgate.net) on 20 August 2021

#### **1.4 PURPOSE OF THE STUDY**

The purpose of the study was to explore and describe the factors contributing to a poor adherence to FDC treatment and to suggest strategies to improve adherence among patients living with HIV at HC Boshoff CHC in the Sekhukhune District, Limpopo Province.

#### **1.5 OBJECTIVES OF THE STUDY**

The following goals were set:

- To explore and describe the factors contributing to poor adherence to FDC treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.
- To suggest strategies to improve adherence to FDC treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.

## **1.6 RESEARCH QUESTION**

The following was the research question:

- What are the factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo province?
- What strategies can be suggested to improve adherence to FDC treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune district, Limpopo province?

## **1.7 RESEARCH METHODOLOGY**

The research methodology refers to the particular steps or methods used to find, pick, process, and analyse relevant information. A qualitative research methodology was applied in this study. A holistic, subjective technique known as qualitative research is used to describe and give meaning to life experiences. (Burns & Grove, 2011). This method was thought to be appropriate and pertinent for this study since the researcher wanted to discuss the factors that patients with HIV experience when trying to adhere to a fixed-dose combination medication at HC Boshoff CHC in Sekhukhune District, Limpopo Province. In this study, the exploratory descriptive design of the qualitative approach was used. The research methodology will be discussed in detail in chapter three.

## **1.8 THE DISSERTATION'S SUMMARY**

## **Chapter one: The introduction to research**

This chapter introduces the study topic, aim, objectives, the purpose of the study, research questions, and study site and gives brief background information on adherence to ART.

## **Chapter two: Literature Review**

This chapter's main objective is to evaluate pertinent research on treatment adherence.

## **Chapter three: Methodology of Research**

This chapter discusses the research design that was used and the research methods for the collection of data.

## **Chapter four: The Interpretation and Analysis of Data**

In this chapter, the analysis and interpretation of the gathered data are the main topics.

## **Chapter five: Conclusion and Recommendation**

This chapter focuses on the recommendation of the research findings and the conclusion thereafter.

### **1.9 CONCLUSION**

This chapter presented the overview, introduction, background, and the problem statement of the research. It also focused on the aim and purpose of the study, research questions, and objectives as well as the significance of the study. Most significantly, it also indicates literature that the researcher used to obtain knowledge about the phenomenon including orientating the reader to the theoretical framework that the researcher identified as aligned to the phenomenon under study. Chapter two will discuss the literature review in detail.

## **CHAPTER TWO LITERATURE REVIEW**

## **2.1 INTRODUCTION**

### **2.1.1 The definition of literature review**

The term "literature review" describes the compilation of theoretical and empirical sources to paint a picture of what is known and unknown about a given issue (Burns & Grove, 2011). A literature review is a comprehensive summary of previous research on the same topic done by other researchers. It reviews scholarly articles, books, and other sources which are relevant to the research topic (Andruss, 2020).

### **2.1.2 The purpose of the literature review**

The purpose of the literature review is to identify the development and understanding of the background in the field of study. It gives a broad overview of the state of knowledge, enabling the researcher to pinpoint pertinent theories, approaches, problems, strengths, weaknesses, and gaps in the body of prior research (McCombes, 2022). The purpose of the literature review in this study is to discover, from the work of other researchers, factors related to inadequate viral load suppression among HIV patients on ART. A survey of the literature serves as a guide for designing and carrying out the research.

### **2.1.3 Background of Adherence to ART**

A higher likelihood of developing medication resistance and virological failure is associated with poor antiretroviral therapy (ART) adherence. As a result, compliance is a strong predictor of survival and quality of life for HIV-positive individuals. World Health Organization (WHO) defines adherence as a standard where the behaviour of the patients matches the recommendations of the health workers. Factors of adherence can be related to four dimensions which are the patient, the disease, the patient-physician relationship, and treatment management (Dorcelus, Bernard, Georgery & Vanessa, 2021).

Previous studies have indicated various numbers of factors related to virological suppression. The likelihood of a patient being non-suppressed is higher in those who are on WHO clinical stage 4 while those that go to a clinic for follow-ups and monitoring are less likely to experience virological failure (Huong, Bannister, Phong, Kirk & Peters, 2010). Virological non-suppression is also associated with suboptimal adherence, poor tolerability, drug, and dietary interactions, CD4 count, treatment history, and drug resistance. The primary causes of regimen cessation and virological failures are poor

adherence and medication intolerance. In most African settings, measures of adherence have been identified as an important factor in managing to respond to treatment and identifying and managing patients with medication difficulties. Factors such as drug regimen, personal factors, side effects, and travelling away from home have been associated with non-adherence (Abdosh & Teklemariam, 2013).

Sub-Saharan Africa faces lots of challenges concerning adherence which are very different from those that are faced by wealthier countries where substance abuse and untreated depression are common. Obstacles to adherence in sub-Saharan Africa are not associated with a lack of responsibility or motivation on the part of the patient but they may be due to poor medical infrastructure and financial strains. Other barriers such as poorly skilled staff, understaffed clinics, unreliable drug supplies, and continuity of care were also identified. Social, behavioural, and cultural obstacles harm adherence which includes stigma, alcohol abuse, fear of disclosure, and side effects (Mugoh, Abiru & Mwaniki, 2016).

The help that a person receives from others in his or her social network is referred to as social support. People living with HIV or AIDS may receive support from friends and family in a variety of ways that might help them stick with their ART treatment. Close relatives are the ones who appear to provide help to the patients by consistently reminding them to take their prescribed medications and to go to the clinic or hospital to get refills and sometimes accompanying them to appointments. Family members have been reported to be the primary source of material support for those living with HIV or AIDS in terms of clothing, money, and food. (Kioko & Pertet, 2017).

## **2.2 BENEFITS OF ADHERENCE TO ART**

Compliance with ART is generally regarded as a vital factor in achieving optimal results. It is important for long-term therapeutic success and is a major concern to the ART program. Numerous studies have demonstrated the enormous advantages of good ART adherence because it does not just prevent drug resistance but it also improves the health status of the patients. Adherence to ART is very important in viral replication suppression, increasing the CD4 count cells, preventing viral resistance, and slower progression of the disease (Schaecher, 2013).

### **2.3 MEASURE OF ADHERENCE**

There are various numbers of strategies for ART compliance that have been used in both observational and intervention studies which are self-report, information on pharmaceutical refills, and pill counts collected at clinics. Self-reporting is one of the techniques that is often employed. It is frequently inaccurate and overestimates adherence, just like clinic-based pill counting. However, adherence has repeatedly been linked to virological failure and mortality. Pharmacy refill data also exaggerate adherence. Monitoring drugs electronically and therapeutic drug concentration monitoring also has been associated with virological failure (Orrel, Cohen, Leisegang, Bangberg, Wood & Maartens, 2017).

Adherence may be a challenging ability of the patient based on his/her context which may compromise the ability to adhere. Patient centred approach to enhance adherence is suggested to allow the nurse to identify inherent personal challenges of the individual patient, then discuss and plan treatment management of treatment-related and also to somehow fit the individual circumstances of the individual. In this way, you are motivating the patient to accept a diagnosis and be motivated to adhere to treatment. Some techniques have been developed for assessing adherence which is patient-self reports; patients' report of missing pills which are almost reliable where the return of extra pills offers concrete proof of nonadherence; investigation of drug level was used in the clinical test for measuring the last dose taken, however, those investigations were unrealistic because they are too expensive and not available (Chesney, 2000).

### **2.4 FACTORS CONTRIBUTING TO POOR ADHERENCE**

It has been discovered that variables like unemployment, migration, cultural and religious views, intimate partner abuse, and difficulty accessing medical facilities contribute to non-adherence to ARV treatment. Additionally, a lack of accurate understanding about HIV/AIDS or ARVs, which is encouraged by traditional healers in most African nations and results in many HIV/AIDS patients believing they have been bewitched, makes non-adherence even more problematic. Some PLWHA tends to be misled by religion because of cultural ideas, believing that they can be healed through prayer.

#### **2.4.1 Economic factors**



The inability to follow HIV/AIDS treatment regimens has been linked to several issues, including poverty. With poverty-related pressures, including joblessness, substandard housing, and being evicted from one place to another cause a serious impact on the health conditions of the patient who has already initiated ART (Reda & Biadgilign, 2012).

The prevalent reasons that contribute more to non-adherence to ART include effects of poverty such as hunger, violence from others, lack of shelter, and social support in South Africa, poverty and unemployment were found to be at a high level of 67% in 2012 where the majority are black people. This results in the patient not being able to access treatment because there is not enough money for food and transportation (Kwesa, 2014).

#### **2.4.2 Lack of family support**

Family support plays an important role in the patient, boosts patient morale and self-esteem and patients feel free and it became easy for them to adhere to treatment. When patients do not have support from family and they are judgemental towards them, it is going to be difficult for the patient to follow the recommended course of action therefore the patient will lose hope and default treatment. A patient's mental health is seriously impacted by discrimination from family, the workplace, and the community at large, which hurts adherence (Wasti, Simkhada, Randall, Freeman & van Teijlingen, 2012).

#### **2.4.3 Stigma, prejudice, and discrimination**

Globally stigma and discrimination are stumbling blocks that may encourage behaviour that seeks out treatment and promotes efficient HIV/AIDS prevention and care, particularly in sub-Saharan Africa. People who are HIV positive are subjected to prejudice, abuse, negative attitudes, and ill-treatment because of their status and they might not be accepted by their family, friends, or the entire community, and they might get inadequate care from the healthcare professional. People frequently forget to take their medications because of their dread of being seen at the clinics and hospitals interacting with community health care providers and identified as HIV positive and being on chronic treatment. Fear of being discriminated against, stigmatised, and humiliated by members of their community if their HIV status was disclosed unintentionally (Katz, Ryu, Onuegbu, Praros, Weiser, Bangsberg & Tsai, 2013).

#### **2.4.4 Religious belief**

HIV/AIDS has been seen as punishment from God, therefore people are being prayed for by different pastors from different churches to cure it and people stop taking treatment as they believe they are healed. People believe that God has cured them and therefore there is no need to continue taking ART and some pastors asked them to stop taking them. Muslims HIV-positive patients do not stick to their treatment routine as sometimes they skip their treatment due to festivals that require them to fast (Kwesa, 2017).

#### **2.4.5 Culture, attitude, and belief system**

Most significantly, 60%–80% of South Africans, especially those who reside in rural areas like Limpopo, KwaZulu–Natal, and Eastern Cape, rely on traditional medicine to address a variety of illnesses and problems. Traditional beliefs and practices can strongly affect a patient's capacity to comply with ART. Some people believe that traditional medicine can cure HIV/AIDS disease since patients have been advised not to take traditional medicine while on ART, they eventually stop taking ARV while they are on traditional medicine. An individual's expertise and belief related to HIV/AIDS and ART may affect adherence. People who have a clear understanding of the relationship between HIV disease progression, viral load, and adherence are more likely to adhere to treatment than people who do not understand ((Kwesa, 2017).

#### **2.4.6 Health-system barrier**

Poor treatment literacy, failure to follow-up with patients, unhappiness with the standard of care given to ART patients, and a lack of privacy and confidentiality in the processing of patient records were all identified as health system-related problems that hindered adherence to treatment. and results, long waiting periods at ART clinics, and fear of getting infectious diseases while waiting to be assisted at the outpatient department (Negesa, Demeke & Mekonnin, 2017).

#### **2.4.7 Patient-related barrier**

Patients experience challenges such as co-morbidities, insufficient medication compliance, missing clinic appointments, and interrupted or intermittent access to ART are examples of patient-related variables that may also contribute to viral non-suppression (AIDSInfor, 2015). Most of the patients skip or forget to take their

treatment due to consuming too much alcohol, smoking, being confused, feeling upset, being tired, and working hard. Some patients work and spend most of their time away from home because they work in bars, restaurants, and shops where they knock off late and they could not take their medication at their workplace (Negesa, *et al*, 2017).

#### **2.4.8 Antiretroviral regimen-related factors**

Drug side effects, inadequate pharmacokinetics, and inferior virological potency are examples of ARV regimen-related issues which may also have an impact on virological non-suppression (AIDSInfor, 2015). As nurses we prescribe and follow-up, and we discuss the treatment side-effects that the patients will normally have due to the body's response to treatment, for example, IRIS, especially among those with opportunistic infections like meningitis, low CD4 count, and high HIV viral load. They need to be informed that these are necessary as the body is responding to FDC treatment that repair and reverse the impact of the virus attack that the white blood cell is having and causing the symptoms that indicate HIV infection.

#### **2.4.9 Racial and ethnic factors**

Statistics indicate that from the Centres for Disease Control, African, African Americans, and Hispanic people living with HIV are less likely to achieve the necessary viral load reduction and have higher rates of AIDS-related mortality than white people. These differences affect population health and result in a greater prevalence of infections among these groups (WHO, 2015).

### **2.5 BENEFITS OF FDC**

The major benefit of a once-daily single pill is that it is easy to use, simply one pill daily or at night. This greatly improves treatment adherence and reduces the risk of drug resistance by ensuring that the concentration of drugs in your body remains at a constant therapeutic level. By maintaining a consistent concentration, the virus will be suppressed to undetectable levels and drug-resistant strains are less able to break out and multiply. Except for the issue of drug resistance, taking one tablet daily shows to improve the overall health of people living with HIV (Bosky, 2022).

### **2.6 ADVANTAGES OF FDCs**

#### **2.6.1 Regimen and stock management simplification**

- ❖ The first-line regimen has been condensed from three distinct medications to just one combination pill, which simplifies ARV prescription, dispensing, and stock management.
- ❖ To prevent HIV transmission from mother to child, triple ARV medication will be started in all pregnant women, regardless of their CD4 cell count, and will be continued during pregnancy and breastfeeding (PMTCT). FDC tablet will therefore streamline the implementation.

### **2.6.2 Adherence**

- ❖ Decreasing the number of pills required by the first-line treatment plan from three separate drugs to only one tablet taken once per day can enhance the level of adherence as reported by some studies, although the provision of thorough adherence counselling will always be important.

### **2.6.3 Efficacy**

- ❖ The effectiveness of the FDC has been proven in randomized controlled trials.

### **2.6.4 Guaranteed dosing and consistent dispensing**

- ❖ Risk of incorrect dosing decreased because of misunderstanding and prescribing or dispensing errors.
- ❖ Patient cannot default from a single drug to avoid side effects.
- ❖ Patients are less likely to receive dual therapy when a single medicine is out of stock.

### **2.6.5 Cost**

- ❖ There are significant cost-savings with FDC compared to old, single-drugs.

## **2.7 STRATEGIES TO IMPROVE AND SUPPORT ADHERENCE**

### **2.7.1 Regimen-related strategies**

Moreover, to reduce drug interactions, ARV regimens should be kept as simple as possible in terms of the number of tablets or liquid ounces recommended, as well as the total number of daily doses (UNHCR, 2019).

### **2.7.2 Patient/Family-related strategies**

An essential part of establishing effective medication adherence, particularly in children, is the education of the patient and caregiver. Before the start of ART, families should be taught about adherence, along with the significance of maximizing adherence and the goals of therapy (UNHCR, 2019).

### **2.7.3 Healthcare provider-related strategies**

Healthcare professionals need to adopt a non-judgmental approach, build patient trust, and pinpoint mutually agreeable treatment goals if they hope to enhance and promote ART adherence. Through their interactions with patients' families, providers can also increase adherence (UNHCR, 2019).

### **2.7.4 Schedule frequent appointment**

Scheduling more frequent appointments instead of long-term refills for patients can reinforce adherence as they have to visit the clinic more often and be educated (UNHCR, 2019).

### **2.7.5 Send personalised reminders through SMS**

Reminding patients about their treatment through advanced methods such as sending SMS or through the home visit by community health workers may positively reinforce adherence to ART medication and patients should give consent about it (UNHCR, 2019).

## **2.8 CONCLUSION**

This chapter covered an overview of the literature on factors contributing to poor adherence to a fixed dose combination of ARV treatment among HIV patients. The literature review comprises information that is already known. The next chapter will be discussing the research methodology used in the study which includes research setting, research approach, and design, obtaining data, analysing it, taking steps to make sure it is reliable, and thinking about ethics.

## **CHAPTER THREE RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

This chapter entails a detailed methodology of the study and will cover the following aspects, research approach, and design, research design, research setting, the population of the study, sampling procedures, sample and sample size, inclusion and exclusion criteria, data collection, pilot study, data analysis, how to minimize bias, analysis of the data, measures to ensure reliability, and ethical consideration

### **3.2 RESEARCH SETTING**

Polit and Beck (2017) define a setting as a specific place where information is obtained. According to Grove, Burns, and Gray (2016), the research setting is defined as the environment in which the research is carried out. This study was conducted at HC Boshoff CHC, Fetakgomo-Tubatse municipality in Sekhukhune District, Limpopo Province. H.C Boshoff CHC is located in Maandagshoek village next to the old Hospital on the western edge of Burgersfort Town. The distance from Burgersfort Town using the R37 route is around 25 kilometers.

H.C Boshoff CHC is under the Boschkloof local area under the leadership of chief Mpuru and Kgwete. There Area is surrounded by lots of mines where a majority of residents are hostel dwellers working in mines from diverse cultures and ethnic groups. The researcher has chosen H.C Boshoff CHC because of the high rate of HIV and poor viral load suppression among the patient living with HIV which leads to an increase in several complications, treatment failure, resistance to treatment and, death.

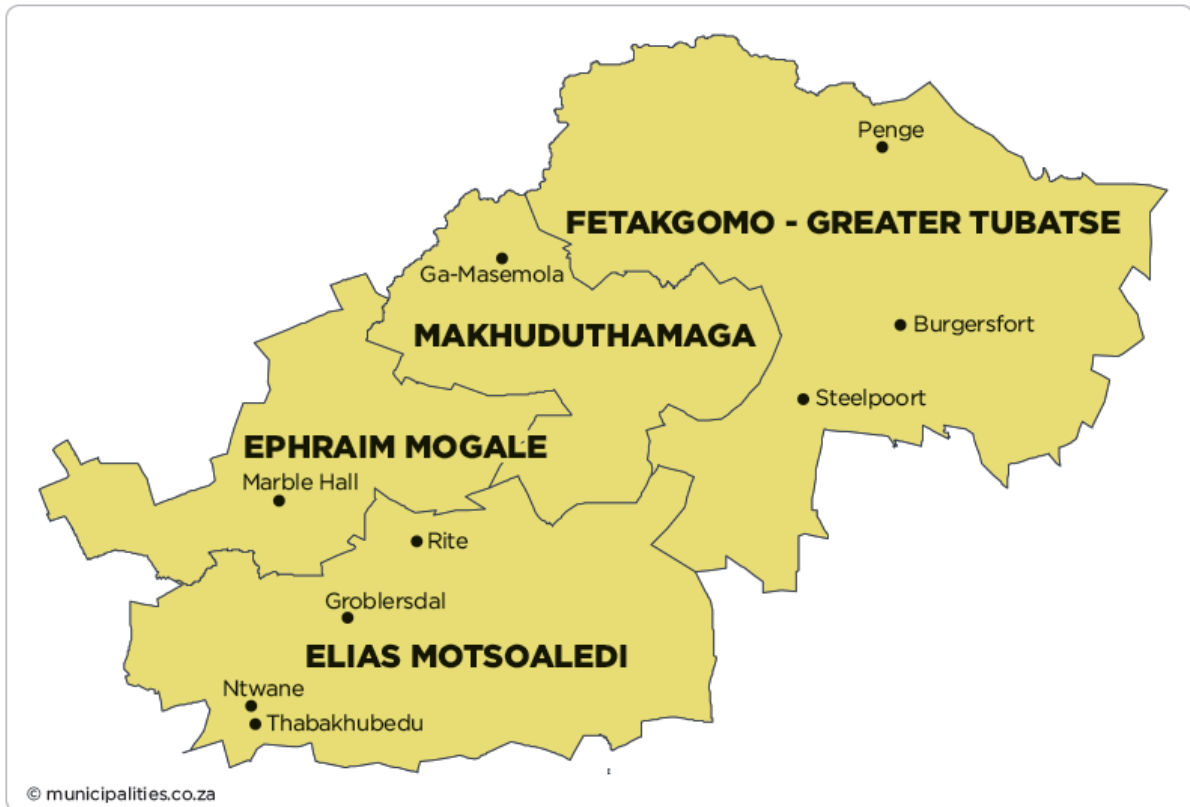


Figure 3.1 Map of Sekhukhune District map. (Source: Muscoosa.co.za)

### 3.3 RESEARCH METHODOLOGY

The process by which researchers must conduct their research study is known as a research methodology. Furthermore, research methodology is how procedures are discovered and knowledge is gained and it also outlines the principles that guide research processes (Campbell, 2016). According to King and Horrocks (2016), Research methodology relates to a process where research design, selection, and justification of specific methodologies are made clear about the research topic.

#### 3.3.1 Research approach and design

In this study, a qualitative research approach was used. The purpose of the qualitative research strategy is to investigate, describe and promote an in-depth understanding of human experience (Brink, Van der Walt, and Van Rensburg, 2014) This approach was considered to be appropriate and relevant in this study as the researcher was intended to describe factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province. A research design in qualitative research forms the plan or framework of the study. It determines the steps to address the

research problems (Polit & Beck, 2018). In this study, the exploratory and descriptive research design was used to explore and describe in-depth factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province. The types of research design are explained in detail below.

- *Explorative research design*

According to Polit and Beck (2017), the exploratory research design describes the whole characteristics of the phenomenon, the nature in which it is manifested, and the factors which are associated with it. This study utilised an exploratory research method to investigate in-depth information on factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province. A central question was posed by the researcher to obtain more information on factors that contribute to poor adherence.

- *Descriptive research design*

A descriptive design refers to one in which occurrences are described in detail to create meaning (Brink, Van der Walt & Van Rensburg, 2012). According to Boswell and Cannon (2017), the descriptive design provides an accurate account of the characteristics of a particular individual or group in real-life situations to discover new meanings and describe what has been existing and is a design commonly applied in social and health science research. The descriptive design was utilised in this study to describe the contributing components contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province. A chance was offered to the participants to explain more on factors contributing to poor adherence to fixed-dose combination treatment.

### **3.3.2 Population**

Brink, Van der Walt, and Van Rensburg (2013) state that a population is a group of objects or people with the same characteristics that the researcher is intended to collect data. A population is also defined as the elements (objects, substances, individuals, or events) that meet the sampling criteria for inclusion in the study, which may be referred to as the target population (Polit & Beck, 2012).



There are two types of population in the research according to Polit and Beck (2017) which are the target population and the accessible population. The target population is the population as a whole in which the researcher is interested and the accessible population refers to participants selected from the target population and accessed by the researcher to gather data for the research study on the day when data was collected (Polit & Beck, 2017). Patients' clinic records were checked for viral load results and those with a viral load of more than 1000 copies constituted the population of the study.

### **3.3.3 Sampling procedure and sample size**

Sampling is a process whereby the researcher is selecting representatives' units of the population for a study (Brink *et al*, 2013). In this study, a non-probability purposive sampling method was used as the researcher aimed to take HIV patients who are on FDC and are not adhering to the treatment as prescribed. Non-probability purposive sampling refers to the recruitment of study subjects because of their exposure to, or their experience and knowledge of the phenomena under study (Moule & Goodman, 2014). Participants were sampled from the follow-up list record in the health centre from 18-21 October 2021. The sample size was not predetermined before data collection in this qualitative study as the sample is dependent on data saturation when participants in the interview are not providing any new information. Sufficient evidence was obtained from twelve participants.

### **3.3.4 Eligibility criteria**

Polit and Beck (2017) define eligibility criteria as who should be included or excluded in the population for which the study is designed. When deciding whether a person is eligible to participate in a clinical trial, eligibility criteria are used to decide whether they are (inclusion criteria) or are not (exclusion criteria) eligible. Age, gender, other medical conditions, past treatment histories, disease kind and stage, and others may all be included. Eligibility criteria help researchers to achieve accurate and meaningful results.

- *Inclusion criteria*

Inclusion criteria are qualities that your potential participants must possess to take part in the study (Polit & Beck, 2017). In this study, the target population was HIV-positive patients who are on ART and whose viral load is not suppressing within six months of ART initiation. Every patient who consented to take part in the trial was included. All patient who was able to give consent regardless of their gender were included in the study.

- *Exclusion criteria*

Exclusion criteria are the set of conditions with a characteristic that does not apply to the study (Polit & Beck, 2012). Exclusive criteria are those traits that preclude potential participants from being included in the study. Exclusion criteria for this study were HIV-positive patients initiated on the first-line regimen (FDC) and their viral load suppressed within six months of ART initiation who refused to give consent to participate in this study.

- *Recruitment*

In this study, the population was 72 patients who were selected when they were coming for follow-up visits and collection of treatment at the clinic. Patients were counselled and explained that the research is of their benefits as well as the entire community and will also assist in the improvement plan of their health care.

### **3.3.5 Data collection**

Data collection is the process of acquiring and analysing information on variables of interest in a predetermined, organised manner that enables one to respond to the research question. (Sajjad, 2016). Furthermore, data collection is the act of gathering, analysing, and measuring precise data from a range of pertinent sources to address research problems and questions and assess the results. (Kabir, 2016). In this study, data which was relevant and necessary for the study was collected to answer the research questions which will help in developing recommendations after analysis.

- *Data collection approach and instruments*

There are two core categories of data collection methods which include, primary and secondary. The primary data collection method is where information is gathered

directly from the source and is a type of data that has never been around before, and the secondary data collection method is a type of data that is already been published in journals, magazines, books, newspapers, etc (Kabir, 2016). In this study, the researcher collected data through semi-structured face-to-face interviews. Participants were asked one main centralised question which was **“How long have you been taking treatment?”** and probing questions followed after participants have responded to the question until data saturation is reached.

The interviews were conducted using an interview guide created independently by the researcher and written in English, which was also translated into the participant’s language, Sepedi. The interview guide has a demographic section that assisted the researcher to understand the social background of the participants. An interview guide is a list of the topics and questions an interviewer plans to cover during the interview and it serves as a guideline that outlines the topics the interviewer wants to know about. In this study, an interview guide was self-developed and was comprised of open-ended questions to gain an in-depth understanding of perceptions or opinions on a topic. The interviews took place in one of the consulting rooms at HC Boshoff CHC to ensure privacy and took approximately 20 to 30 minutes. While conducting the interview, data were recorded using a voice recorder, and field notes were kept to document non-verbal signs.

The researcher made an appointment with the manager of HC Boshoff CHC for collecting data on the specific date selected. The researcher identified all the materials needed for the interview such as an audio recorder, a notebook for field notes, and interview instruction that was prepared in both Sepedi and English as well as a consent form for the participants.

On the day of the interview, the researcher introduced herself to the participants and the purpose of the study was explained. Eligible participants were selected while came for treatment collection. The researcher used the clinic file to identify them with the help of the data capture. The participants were informed that they are not forced to take part in the study but it is voluntary and that if they feel uneasy, they can withdraw. The interview was done in a quiet place with minimal distractions. Consent forms were signed by participants who were willing to take part in the study. Participants were

interviewed one by one using an interview guide where a central question was asked followed by probing questions.

- *Data collection process*

Data collection was done on a specific day when many patients who are on ARVs, who coming for follow-up and treatment collection. The date and time were planned and arranged with the facility manager in order not to interrupt the services of the facility. Patients' files were checked for types of blood results (viral load), ART start date, if the patients are complying with the follow-up dates or not, etc to select participants suitable for the study.

Every time the researcher enters the interview room, she welcomes and introduces herself to the participant before the interview starts. The aim and objectives of the study were explained thoroughly to the participants. Participants were also clarified on measures to ensure trustworthiness and participants' rights, and they were adhered to. After participants agreed to be interviewed, written consent forms were issued for them to sign. They were also informed that audio-recording (tape-recording) will be used to record the interview so that they will not be surprised or afraid and they were given chance to ask questions or clarity before the interview started or withdraw from participating in the study if they wish so.

When the participants agreed to continue, interviews were recorded and field notes were written down, and each paper was given a code in order not to use the participants 'actual names. Interviews were conducted using English and Sepedi in a private, quiet, safe, and comfortable consulting room in the facility. Open-ended questions were asked to allow participants to elaborate more and able to express themselves, and they were not interrupted or stopped while still talking. Data collection was done until data saturation was reached at 12 participants. Interviews took 15-30 minutes each. The recordings of the study were once again shared with individual participants. Participants were allowed to reflect on the recordings, including adding or removing some of the information if they so wished. After the completion of the interview, the researcher thanked all the participants, and all the records were kept safe inside the locked cupboard.

### **3.3.6 Pilot study**

The pilot study, which is typically a smaller-scale study to help with planning and study modification, is the initial stage of the research process. (Anasthesion, 2017). Researchers become aware of the procedures involved in the main study through the pilot study, which aid in altering the interview guide in case some questions need to be amended before the main study is conducted. According to Polit and Beck (2017), a pilot study is defined as a small trial that is done to prepare for the major study. The pilot study is conducted to evaluate the feasibility of some crucial components of the full-scale study and to determine how long it will take to administer the whole instrument.

The interview guide was pre-tested with only three participants at Dilokong Gateway Clinic, which was excluded from the study, where HIV patients on FDC for more than six months with their viral load not suppressed were interviewed. A semi-structured interview was used with the same central questions followed by probing questions. Participants used in the pilot study were not included in the main study. Through the pilot interview, the researcher was able to refine her central and probing questions. Additionally, it aids in the researchers' decision-making regarding the best way to carry out the final research study and allows them to evaluate in real life how likely the research procedure will be to succeed.

### **3.3.7 Data analysis**

Data analysis refers to the organising, arranging, and classifying of data in themes, categories, and patterns that the researchers use to give meaning to it. It is the combination of pieces of data to form significant patterns (Polit & Beck, 2018). Data analysis in qualitative research is defined as the process of systematically searching and arranging the interview transcripts, observation notes, or other non-textual materials that the researcher collected to increase the understanding of the phenomena. In this study, the researcher transcribed the collected data and developed themes and sub-themes from transcribed and analysed data. An independent coder assisted with the coding of data and agreement was reached between the researcher and the independent coder on the themes and sub-themes. Open coding is the part of the analysis that concerns specifically naming and categorising phenomenon themes by examining data collected.

Tech's open coding data analysis steps were adhered to:

- The researcher obtained a sense of the whole by reading all the transcripts carefully. The ideas that come to mind were highlighted down on the margins.
  - The researcher selected one interview, for example, the shortest one, and go through it.
  - The researcher completed this task for several participants; a list was made for all topics. Similar topics were grouped and formed into columns arranged into major topics with unique topics and leftovers.
  - The researcher abbreviated topics into codes and those codes were written next to the appropriate segment of the text. The researcher organised a scheme to see if new categories and codes emerge.
  - The researcher identified descriptive wording for the topic and turn them into categories. Lines were drawn between categories to show interrelationships.
  - The researcher provided a final decision on the abbreviations for each category and alphabetises the codes.
  - The researcher placed data material belonging to each category in the same place and a preliminary analysis was performed.
  - The researcher recorded the existing data.
- *Transcription of interviews*

A transcript is an exact written record of the spoken words. Although sometimes is not possible to transcribe every single word. The researcher started by listening to the entire recording before doing anything else to refresh memory and to have a sense of what the entire recording is all about. The researcher listened to the whole recording and wrote down any words or terms that needed to be familiarised with and compared the recorded information with the field's notes taken during the interview. the transcripts were read intensely and emerging themes and sub-themes were identified. The researcher revisited the transcript and edit by reading through the document and listening to the audio to address any problems or inconsistencies.

- *Coding*

Coding is the process of analysing and organising the information which is in the interview and the whole data into meaningful and logical applicable measures (Polit & Beck, 2017). Allen (2017) defined the Coding of data as the process of transforming

collected information or observations into a set of meaningful, cohesive categories. It is a process of summarizing and representing data to provide a systematic account of the recorded or observed phenomenon. The purpose of data coding is to bring out the essence and meaning of the data that respondents have provided. The codes are given meaningful names and they are divided into categories. When data is coded, again and again, it gets refined. The refined data itself leads to patterns and themes and these patterns are the key to finding out the true results. Methods of coding qualitative data fall into two categories which are automated and manual coding (Medelyan, 2019).

- *Creating categories and themes*

According to Maguire & Delahunt (2017) theme is defined as a pattern that captures something significant or interesting about the data and/or research question. Themes are generally broader than codes, most of the time several codes might be combined into a single theme. At this stage, the researcher should be familiar with the entire body of data and start to organise data in a meaningful and systematic way. The researcher might decide that some of the codes are not clear or irrelevant enough, therefore they can be discarded. Other codes became themes on their own. Themes differ according to what the researcher trying to find out. The researcher wanted to create potential themes that tell us something helpful about the data for the study. If there are any problems with the themes they can be split up, combine, discard, or create new. When having a final list of themes, then the researcher named and defined each of them. Defining themes involves formulating exactly what is meant by each theme and figuring out how it helps in the understanding of data. Naming themes involves coming up with easy and understandable names for each theme

### **3.4 MEASURE TO ENSURE TRUSTWORTHINESS**

The trustworthiness of the study, credibility, transferability, conformability, and dependability was ensured throughout the research study and are discussed in detail below.

#### **3.4.1 Credibility**

The credibility of the study implies to what extent the findings can be trusted as being true and acquired congruent research methods for the research questions (Niewenhuis, 2016). Credibility in this study was secured by triangulation where

various approaches for gathering data were employed. such as interviews, writing down some notes, and also use a voice recorder during data collection. Credibility has techniques to establish it which are persistent observation, member checking, and the use of triangulation.

- *Persistent observation*

Persistent observation happens when the researcher identifies those characteristics and elements that are relevant to the problem or issues under study (Korstjens, 2018). In this study, persistent observation was ensured by focusing more on which reaction was displayed by participants during the interview and noting down in the form of field notes. This includes facial expressions such as frowns or smiles, crying, and laughing of the participant.

- *Triangulation*

Triangulation is when the researcher draws on multiple reference points to address the research question (Moule & Goodman, 2014). It is used to ensure that research findings are rich, concrete, and well-developed. In this study, triangulation was ensured by using multiple data methods, data sources, and theories such as field notes and interviews with voice/audio recorders. To gain more knowledge and understanding of the phenomenon being studied.

- *Member checking*

This is a technique in which data, interpretations, and conclusions are shared with the participants. In this study, the findings of the study were submitted to the participants to discuss and confirm the accuracy and interpretations of data. They were also allowed to clarify their intentions, correct errors, and where necessary provide additional information.

### **3.4.2 Dependability**

Dependability refers to the consistency and reliability of the research findings and the degree to which research procedures are documented, allowing someone who was not part of the research to follow, audit, and critique the research process (Moon, Brewer, Hartley, Adam & Blackman, 2016). In this study, dependability was ensured by the independent coder. The researcher collected data and have someone check it



as raw data. The supervisor checked the finding of data collected, recorded interviews, interpretation of the findings, and recommendation for amendments to the study.

### **3.4.3 Transferability**

Transferability is the extent to which the study findings can be applied to different environments or groups (Theron, 2016). In this study, transferability was ensured by providing a detailed problem statement, the research method, the research design, and the study results for further reference by other researchers. Purposive and nonprobability sampling techniques were used when selecting a sample to collect data that is relevant.

### **3.4.4 Confirmability**

Confirmability occurs when the research findings are the result of the investigation and not the researcher's bias. In this study raw data from tape records and field notes and transcribed data were used to ensure Confirmability as it was given to an independent coder (Korstjens & Moon, 2018). Confirmability is usually demonstrated by providing an audit trail that presents every step of data analysis to ensure that the research findings are not painted by conscious or unconscious bias but represent the responses of the participants.

## **3.5 ETHICAL CONSIDERATION**

Ethics is described as a good action with an attached sense of excellence, (Brink, Van der Walt & Van Rensburg, 2012).

- **Ethical clearance**

Ethical clearance was obtained from the University of Limpopo Turfloop Research Ethical Committee (TREC), with the project number TREC/62/2021: PG.

- **Permission to conduct the study**

Permission to conduct the study was obtained from the Limpopo Department of Health (DOH), the Area manager and operational manager of the institution. The researcher sent an application letter with the research proposal to DOH and to the management of the health institution requesting to conduct a research study in the health centre. The DOH as well as the management of the health centre approved the researcher's request after going through the whole research proposal and making sense of it and

identifying both the advantages and disadvantages of patients that will be taking part in this research project.

The following ethical standards were followed when conducting the study:

- **Informed consent**

The participants have a right to be informed about the research's purpose, how it will impact them, the risks and rewards involved, and their right to refuse to participate if they choose to do so. (Brink, Van der Walt & Van Rensburg, 2012). The right to self-determination was upheld by obtaining informed consent from the participants. Informed consent was signed by research participants, who signed voluntarily by the participants after everything has been explained to them and no one was forced to take part in this study. The concerned form for the minor was signed by her mother after everything was explained to them and the child was interested in taking part. There was no punishment or penalty for participants who were not willing to participate. There was no victimisation of participants who withdraw during the study. Participants were given all information in the language they understand. Four patients refused to be part of the study after everything was explained to them because they were not comfortable with tape recording and they were afraid their voices will be heard by the media.

- **Anonymity**

Anonymity refers to the process of collecting data without obtaining any personal identifying information (Coffelt, 2022). In this study, data were not associated with names or identifiers. The participants' names and addresses were not included in the data; instead, numbers were used to ensure that they remain anonymous. The participants were informed that their names will not appear anywhere on the results or report to maintain anonymity.

- **Confidentiality**

Participants' information, especially sensitive and private information, should be kept private and only accessible by the researcher. Participants' information will always be collected and stored securely. (Brink, Van der Walt & van Rensburg, 2012). The researcher informed the participant that the information obtained will remain with the researcher only to maintain confidentiality. Information about the participants was kept safe under a locked cupboard in one of the offices at the health centre where no one

will reach except the researcher. The information was shared with the supervisor through a report as the supervisor is involved in the study and has to correct and give inputs or guidance throughout the research project.

- **Privacy**

The term "privacy" relates to safeguarding a person's ability to decide who can see that they participated in a study. such as the time, extent, and general circumstances (Hollard & Linvill, 2019). In this study, privacy was maintained by not disclosing any information given by the participants to a third party. The participants have the right to determine how their private information will or will not be shared with other people. The researcher was aware of every detail shared by participants and remained between them. The interview was conducted in a quiet private room to prevent violating patients' rights (Brink, Van der Walt & van Rensburg, 2012).

- **Bias**

Polit and Beck (2012) state that the following are factors that can affect bias, researcher subjectivity, participant's lack of openness or impartiality, sample imbalance, and inadequate design. Any stage of the study process can contain bias. When bias develops, it does not necessarily indicate that the researcher caused it consciously or unconsciously. It could be a problem that occurred as the study evolved and progressed. The researcher should guard against subjectivity by not passing on their own experiences in the study and by not letting the respondents know what to expect before the study. The pre-test was done at another health facility where the researcher was not going to conduct the main study to avoid respondents knowing the content of the study before the main study. To prevent bias the researcher used the language that the participants understand and was also avoiding using leading questions rather she used open-ended questions The participants were allowed to participate only once.

- **Beneficence and non-maleficence**

The participant was safeguarded from discomfort and harm, which might be physical, emotional, economic, psychological, legal, or social, by the researcher. The researcher ensured that the environment is conducive and free from harm. If the research problem involves a potentially harmful situation, it has to be rejected or rephrased to allow investigation in an ethical environment. The researcher always tried to avoid harming the participants and carefully structured the questions and monitors

any signs of distress that participants might have. Should the distress occur, debriefing was facilitated for the participants to get the opportunity to ask questions and complain, and where necessary participants were referred for counselling (Brink, Van der Walt & van Rensburg, 2012). The researcher also observed covid protocols during the data collection such as wearing masks, maintenance of social distancing, persistent handwashing, and using sanitiser.

- **Principle of respect for the person**

People are independent, which means they have the right to self-determination. This suggests that everyone has the freedom to determine whether or not they want to participate in the study without interference or adverse treatment, they also have the right to withdraw at any time from the study if they are no longer interested, they can also refuse to give information as required from them and ask to be clarified with the purpose of the study. The researcher respected the individuals by not using any form of coercion or penalty. The decision to participate in the study was voluntary and respected and no one was forced to participate in any study (Brink, Van der Walt & van Rensburg, 2012).

- **Principle of justice**

The researcher selected the population for the study with fairness and the participants were selected for reasons directly related to the research problem. The researcher did not just pick any participants because they are readily available. The participants were treated fairly and with respect. The researcher was always punctual with time allocated for the interview as agreed upon and concerning cultural values and also remembered to provide incentives to the participant as promised (Brink, Van der Walt & van Rensburg, 2012).

### **3.6 CONCLUSION**

In this chapter qualitative research methods, explorative and descriptive design was discussed. This chapter also looked at how population and sampling have been done, inclusion and exclusion criteria as well as how data was collected through a face-to-face interview. In this chapter, measures to guarantee dependability and ethical consideration have also been covered. The study's findings will be discussed in the following chapter.

## CHAPTER FOUR PRESENTATION, INTERPRETATION, AND DISCUSSION OF FINDINGS

### 4.1 INTRODUCTION

The interpretations of the research results are presented in this chapter which was collected through semi-structured interview sessions conducted with 12 participants to determine what contributes to poor adherence to a fixed dose combination among patients living with HIV and the results from the research study were summarised and presented. Using Tech's open coding methodology, data was analysed, and themes and sub-themes were created. The findings were further validated through the use of literature control. Limitations and gaps were identified and recommendations were made.

### 4.2 PRESENTATION OF THE RESULTS

The results were analysed to provide the background to the participants by analysing their biographic data from the interviews first, followed by the themes and sub-themes.

#### 4.2.1 Biographic data of the participants

The aim of presenting biographic data is to describe the participant's characteristics that might influence the results of the study. The biographic data of participants are presented in the table below in table 4.1

**Table 4.1: Biographic data of the Participants**

Participants	Gender	Age	Level of education	Employment status	Marital status
1	Female	25yrs	Grade 10	Unemployed	Single
2	Male	37yrs	Diploma	Employed	Married
3	Female	31yrs	Grade 7	Unemployed	Single
4	Male	28yrs	Grade 11	Unemployed	Married
5	Female	35yrs	Grade 12	Unemployed	Married
6	Female	34yrs	Grade 11	Employed	Single

7	Female	14yrs	In grade 9	Learner	Single
8	Male	29yrs	Degree	Employed	Single
9	Female	22yrs	At tertiary level	Student	Single
10	Female	33yrs	Grade 10	Unemployed	Married
11	Female	26yrs	Grade 12	Unemployed	Single
12	Male	42yrs	N6	Employed	Single

### **Analysis of demographic data**

#### **Gender**

About 8(66.6%) participants were females while 4(33,3%) were males. The findings were corroborated by research done in Zambia, where it was discovered that 50,8% of the participants who had been surveyed were women. Due to older male partners infecting them in situations of deprivation, exploitation, and manipulation without condoms, there may be a somewhat higher number of female respondents. (Namoomba, Makukula & Masumo, 2019).

#### **Age**

The age of participants was 11(92%) adults and (18%) was a child below 18 years. The findings were supported by the study done in Haiti where it was discovered to be a key factor concerning poor adherence. Patients under the age of 40 were more likely than patients over the age of 40 to have poor adherence. Adolescence and young adults were more likely to experience treatment failure due to several social, psychological, and adherence difficulties, but older patients had higher compliance with their therapy because they are accustomed to the routine. (Dorcelus, Bernard, Georgery & Vanessa, 2021).

#### **Level of education**

Therefore, around 6(50%) passed grade 12 while 6(50%) did not pass their grade 12. The results were corroborated by the research done by Mitiku, Abdosh & Teklemariam (2013) where the results showed that as respondents' education levels rose, so did their adherence rates. People with higher levels of education typically

have access to more knowledge and are more likely to make well-informed decisions.

According to the study done in Haiti, there is a positive relationship between higher levels of education and more favourable living circumstances associated with ART adherence. This can be a result of better awareness of what treatment entails and having the financial means to obtain treatment. (Dorcelus, et al 2021).

**Employment status**

There were 6(58%) which were not employed, 4 (33%) employed and 2 (16,6%) are still students. Employment showed conflicting outcomes; non-adherence was observed to be higher in unemployed people. Non-adherence was linked to financial difficulties such as transportation costs, healthcare facility costs, and financial instability.

**Marital status**

Those who are married were 4(33%) while 8(66,6%) are not married. The findings indicate that the majority of participants are single. The findings were supported by the study done in Kenya where the findings reveal that marital status and ARV adherence were highly correlated. This may have to do with decision-making, as married women may be expected to get their husbands' approval before receiving care, whereas divorcees and single people can make their own decisions (Kinko & Pertet, 2017).

**4.3 THE PRESENTATION OF THEMES AND SUB-THEMES**

The themes and sub-themes that have surfaced as a result of data analysis using Tech's open coding method are shown in Table 4.2. The themes and sub-themes represent variables that contribute to poor adherence to a fixed-dose combination medication and methods to increase adherence among HIV patients.

**Table 4.2: Themes and Sub-themes**

THEMES	SUB-THEMES
1. Experiences of patients living with HIV requiring daily ARV medication.	1.1 Psychological experiences

2. Factors facilitating adherence to a fixed-dose combination treatment among patients living with HIV.	2.1 social disclosure and support
3. Personal factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV	3.1 Behavioural constraints (risky behaviour) 3.2 Psychological constraints (memory)
4. Factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV.	4.1 Non-disclosure of HIV status. 4.2 Non-disclosure of HIV status related to stigma and discrimination. 4.3 Social, Cultural, and spiritual constraints. 4.4 Socioeconomic constraints.
5. Healthcare factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV.	5.1 ARV medication constraints (side effects and size of pills). 5.2 Healthcare system constraints (inadequate resources/support/ARV medication/access)
6. Approaches to improve adherence to a fixed-dose combination treatment among patients living with HIV.	6.1 Personal and social strategies. 6.2 Healthcare educational and supportive strategies. 6.3 Healthcare resources and ARV medication strategies. 6.4 Governmental and managerial strategies.

#### 4.3.1 Theme 1: Experiences of patients living with HIV requiring daily ARV medication



The findings in the study reveal that patients living with HIV feel that being HIV positive is the worst thing that ever happens to anyone in this world. Mahlasera (2020) stated that when one is tested HIV positive, they think that the whole world has come to an end, and there is no more hope for the future, as they cope with the effects of receiving an HIV diagnosis, they frequently experience despair and anxiety. The reason is that emotional and mental stress experienced by people living with HIV might cause different types of psychological problems. Additionally, there is a heavy psychological cost associated with HIV/AIDS. Living with HIV is extremely difficult due to the several substantial and ongoing stressors that it is linked to, such as pain, ART side effects, social stigma, and prejudice.

#### **4.3.1.1 Sub-theme 1.1 Psychological experience**

The results of this study showed that having HIV and residing with it is likely to have an emotional impact and mental health problems such as depression or anxiety. Mental and emotional dysfunction is associated with HIV's psychological effects. Another psychological impact of HIV among patients living with HIV and taking ARVs is fear. This implies that patients living with HIV experience emotional and psychological trauma and challenges that impact their daily life as they are usually stressed, traumatised, and affected by the side effects of ARV treatments. Patients experience social isolation and end up being depressed. The findings of this study are supported by participants verbalising the following quotes:

**Participant 2 said:** *“Eee..., it is like a dream in my life I never thought I will take treatment daily not now considering my age and I thought it was for older people. Therefore, it is exceedingly difficult for me; I cannot even go out with my friends as usual until late at night to have fun, take some beers, and dancing”*

**Participant 4 said:** *“Yooo..., it is something that you cannot use overnight and it takes time to adapt. It is difficult and painful at the same time. It is not easy at all”.*

**Participant 7 said:** *“It is very painful for me because I got it from my mother is not like was sleeping around. I am always asking myself how my mother could be so cruel to me by not taking treatment while she was pregnant to prevent me from getting the virus. At first, was not aware I was taking ARVs all along because my mother use to tell me she is giving me vitamins and flue treatment until I grew up and I checked*

*treatment she has been giving me from the internet and I confronted her to tell me the truth and she confessed it is true that I am taking ARVs”.*

**Participant 8 said:** *“Honestly, no one is wishing to see himself or herself taking treatment for the rest of their life. It is tiring. Sometimes you just feel like you need a break from taking them and wish you can wake up and find that it was a dream you are not HIV positive”.*

**Participant 9 said:** *“Eish, to be honest, it is hard for me to believe that at my age I am HIV positive. How will I get married and have kids and live happily after? Who will want to marry someone who is HIV positive?”*

The results of a study carried out by Masahlela (2020) back up the conclusion that after being diagnosed with HIV, A person may experience trauma because they are afraid of being stigmatised or afraid to reveal their status. Being diagnosed with HIV and living with it, will at the times cause emotional stresses and strains, and some aspects of your life become too complicated and stressful (Pebody, 2019).

A study done in India revealed that the majority of individuals expressed feelings of sadness; anger and suicide are also evident due to their propensity for seclusion after receiving an HIV diagnosis. The participants' responses to learning they had HIV ranged from acceptance to depression, hatred, anxiety, and suicide (Selamu, Singhe & Assefa, 2017).

According to Mahlasela (2020) stated that when one is tested HIV positive, they think that the whole world has come to an end, there is no more hope for the future, and they frequently experience anxiety and depression as they come to terms with the effects of receiving an HIV diagnosis. The health belief model also indicates that the psychological characteristics include aspects such as peer group pressure which can affect the individual emotionally and psychologically, especially after the diagnosis of HIV and initiation of ARV treatment

#### **4.3.2 Theme 2 Factors facilitating adherence to a fixed-dose combination treatment amongst HIV-positive individuals**

The study found that there are factors that influence adherence to fixed-dose combinations. The patients living with HIV and on ARV treatment need to accept the diagnosis and treatment and be able to share with immediate and close family. Social

disclosure and support contribute to elements that affect how well people adhere to their ARV treatment.

#### **4.3.2.1 Sub-theme 2.1 Social disclosure and support**

Thus, to change behaviour, gain access to HIV treatment and management programs, and reduce levels of social stigma, one's HIV status must be disclosed. While sharing your status with your negative sexual partner is very difficult but it can also allow you to speak about protecting your partner's health, such as using condoms. This means that patients diagnosed with HIV and taking ARVs have perceived benefits in disclosing as it assists them with the likelihood of getting support. The following are the verbal quotes that support the study:

**Participant 4 said:** *“All my family members know about this and they are very supportive except my wife who packs and go after she finds out that I am HIV positive and taking treatment sometimes without telling her”.*

**Participant 5 said:** *“Ooh yes, my husband and kids know about this. I told them the first day I tested positive at the clinic and they are very supportive and they become very disappointed when I stop taking treatment and become sick because they think I may become very sick and die”.*

**Participant 6 said:** *“No one knows about my condition at home, the only person who knows is my friend because she is also HIV positive and sometimes, I do ask her to lend me some when I don't have any”.*

**Participant 11 said:** *“Yaa, I have my mother and my elder sister they know about my status they have been so supportive since I nearly died after I stopped taking them”.*

**Participant 12 said:** *“But my sister is very supportive and tries her best in helping me with my treatment”.*

The results are consistent with those of research by Samuel (2020) who also explained that sharing your status with your family and friends when you are ready and feel comfortable to do that is incredibly empowering because it is beneficial to have a support network in your life from people who know and understand your condition. This can make a huge difference in times of illness or when dealing with the psychological and emotional effects of stigma. While sharing your status with

your negative sexual partner is very difficult but it can also allow you to speak about protecting your partner's health, such as using condoms. While disclosing in the workplace by telling your employer can allow them to make any necessary accommodations, such as a day off for medical appointments (Samuel, 2020).

The disclosure offers a chance for improved quality of life for persons with HIV and their families, as well as a chance to delay the advancement of the disease, and it may be a force in the prevention and control of HIV infection in both those who are already infected and those who are not. (Odiachi, 2017)

HIV disclosure can help people living with HIV to access social support, enhance antiretroviral adherence, facilitate engagement in care, and reduce the need to hide medication from others and partner disclosure can reduce levels of unprotected sexual activity and facilitate partner HIV testing (Evengeli & Wroe, 2016).

Norman, Chopra & Kadiyala, (2011) alluded that People living with HIV in communities where disclosure rates were higher had easier access to formal institutional support neighbourhood NGOs and government social agencies, as well as more chances to play an active part in the community as HIV-positive people.

Disclosure of HIV status can enable the activation of family or community support networks and reduce morbidity through better psychosocial management of illness and is also fundamental to the management of HIV infection. Access to another form of care such as home-based care, nongovernmental organization (NGO) support, and specific social grants also depends on the disclosure of HIV status (Norman, Chopra & Kadiyala, 2011).

According to Ross, Aung, Campbell & Ogunbanjo (2011), an important component of successful adherence is disclosure to family and friends and it allows support which plays a crucial part in encouraging adequate compliance.

#### **4.3.3 Theme 3: Individual characteristics contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV**

The study reveals that there are personal factors that contribute to poor adherence to a fixed-dose combination treatment such as sexual risk behaviour, multiple partners, alcohol consumption, and use of drugs as well as psychological problems.

#### **4.3.3.1 Sub-theme 3.1 Behavioural constraints (risky conduct)**

Addiction to drugs or alcohol frequently results in unsafe sexual behaviour and actions that endanger health. Alcohol use is related to unsafe sexual behaviour and a higher risk of contracting HIV. Alcohol use impairs a person's capacity to make wise decisions regarding HIV prevention and safer sex (Mokwele, 2017). The following are the verbal quotes that support the findings of the study:

**Participant 3 said:** *“And the other thing is that I am afraid to tell him to use condoms because he will ask me why and I won’t have an answer for that and this is eating me up because I know it is not good not to use condoms while I am HIV positive because I am putting my life and health in danger but at the end, I don’t have a choice but to keep it to myself and risk with my life”*

**Participant 9 said:** *“I have had many boyfriends since I tested positive because I don’t want to die alone. I do not use condoms whenever I sleep with them because I don’t care anymore if I die, I die nothing to lose”.*

**Participant 9 said:** *“Since I tested positive two years back and started taking treatment, I am always out with friends drinking and smoking trying to forget my problems. Sometimes especially on weekends, I drink too much in such a way that I even forget to take my treatment”.*

**Participant 19 said:** *“Then I started drinking and going out at night just to relieve stress and I decided to go out and stay with my boyfriend”.*

The findings are supported by the study done in the Eastern cape which indicated that Several women claimed that excessive alcohol use frequently caused them to forget to take their prescriptions. This frequently occurred, especially on the weekends when people went out to clubs, to social events, and to drink a lot. Others revealed that they did not follow ART throughout the holiday season because they frequently drank alcohol and attended social parties (Adeniyi, Ajayi, Goon, Owolabi, Eboh & Lambert, 2018).

According to the study done in Vredenburg, it indicates that drug usage in patients on ART has been found to have significant effects on their capacity to adhere to therapy since it makes it difficult for them to acquire social and familial support, which can help them stay motivated to follow their treatment. Even though it was discovered that smoking and alcohol hurt adherence, substance abuse is associated with factors such as fatigue, forgetfulness, and confusion which have influenced adherence negatively (Azia, Ferdinand, Mukumbang & Van Wyk, 2016).

#### **4.3.3.2 Sub-theme 3.2 Psychological constraints (memory)**

Clients and health workers stated that most of the patients miss their doses because they forget to take their treatment and there is no one to remind them about their drugs. Most patients with serious, progressive illnesses oppose several psychological challenges including the prospect of real and anticipated losses, and worsening quality of life. The fear of physical decline and death (Remien & Rabkin) the following are the verbal quotes to support the findings of the study:

**Participant 5 said:** *“and sometimes you even forget that you are supposed to take treatment and you will remember the following day that you didn’t take your treatment last night, it is very difficult”.*

**Participant 6 said:** *“For me, it is not easy at all because I always forget or miss the time, I am supposed to take treatment”.*

**Participant 9 said:** *“Sometimes you remember after hours, it is very bad I don’t want to lie”.*

**Participant 11 said:** *“Eee..., HIV treatment is not a child’s play, it is not nice at all. Sometimes you forget”.*

The conclusions were backed up by the research findings conducted by Rowel-Cunsolo and Hu (2020) where participants reported that forgetting to take their medication was common and that if they forgot to take their treatment on a given day they will wait until the next day to resume with their medication schedule and they would also forget to schedule medical appointments with their physicians, which will impact the timeliness of receiving their treatment and they also reported that experiencing memory loss associated with early-stage of dementia.

#### **4.3.4 Theme 4: Social factors contributing to poor adherence to a fixed dose combination treatment among patients living with HIV**

The study found that there are social factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV. Factors such as no disclosure of HIV status related to stigma and discrimination, social, cultural spiritual constraints, and socioeconomic constraints.

##### **4.3.4.1 Sub-theme 4.1 Non-disclosure of HIV status**

Fear of disclosure of HIV-positive status is the most common reason for most HIV patients to default from ARVs. Most of the patients do not want their relatives or partners to know their status for fear of being stigmatised because of their positive status therefore there is no one to remind them when they missed their drugs (Chirambo, Valeta, Mary, Kamanga & Nyondo-Mipando, 2019).

Several patients skipped their doses or missed their hospital appointments because they were afraid that their HIV status could be disclosed unintentionally if they were to be seen in queues at ART clinic regularly. Patients who did not disclose their HIV-positive status travelled long distances to obtain anonymous treatment and hid or skipped pills to ensure that family members and employers did not know about that HIV status. (Azia, Mukumbang & Van Wyk, 2016). The following are the verbal quotes that support the findings of the study:

**Participant 3 said:** *“Honestly no one as I’ve not told anyone about my status and I am not willing to tell anyone as yet”.*

**Participant 3 said:** *“This has nothing to do with the nurses because they have played their part and what is left is between me, my family, and my boyfriend because I am the one who is keeping this from them”.*

**Participant 3 said:** *“Eish, I am staying with my boyfriend in the hotel, and is only one room. My boyfriend does not know that I am taking ARV treatment therefore I hide them where I know he will never find or see them. Then I make sure I take them before he returns from work. It is very difficult to take them when he is around, like*

*when he is off, during holidays or weekends or when he knocks off early because there is no other way that he cannot see me when I take them then don't take them".*

**Participant 7 said:** *"Therefore, I hide my treatment and take them when no one is around to see me even when I go to the clinic, I don't tell anyone where I am going is my secret. Sometimes I just get tired of taking them and spend some days or weeks without taking them".*

**Participant no 9 said:** *"or I end up not sleeping at home for the whole weekend, sleeping at my boyfriend's place and I can't carry ARVs with me when going out".*

**Participant no 10 said:** *"My boyfriend does not know about my status and I will never tell him because is the only family I have therefore it is very difficult for me to take treatment when he is around that is why I spend days without taking treatment".*

#### **4.3.4.2 Sub-them 4.2 Non-disclosure of HIV status related to fear of stigma and discrimination**

According to Azia, Mukumbang & Van Wyk (2016) stigma was found to be crucial in driving discrimination against people living with HIV/AIDS in the community and therefore it influences adherence negatively. Stigma and discrimination have been reported as greatly contributing to the low rate of disclosure and poor adherence to ART. Stigma was found to have provoked discrimination, rejection, and the isolation of people living with HIV/AIDS and it creates emotional distress that pushes some patients to skip doses and to take heavy drinks as a way of providing some self-comfort.

In the effort to stop the spread of HIV/AIDS, the refusal to disclose one's HIV-positive status has continued to be an obstacle. A national emergency for sensitisation is required due to the stigma and discrimination HIV-positive patients face after being disclosed. The way PLHIV are treated is crucial and will always hurt other people's willingness to undergo testing and report their status (Umegboro, 2021). The following are the verbal quotes that support the findings of the study.



**Participant 1 said:** *“No one knows about my status and I am not yet ready to tell anyone as they will start judging me and calling me names”.*

**Participant 2 said:** *“Where I stay or work now no one knows about my status as I am afraid of being judged and discriminated against”.*

According to a study conducted in Namibia, stigma from the community and family members has reduced adherence to treatment since it may lead to affected individuals feeling depressed, fearing to divulge their HIV status, and reluctance to take antiretroviral therapy (ART) in front of other people (Bauleth, Van Wyk & Ashipala, 2016).

There is still a great deal of stigma and many negative perceptions about people living with HIV which may be revealed after you have mentioned your HIV status through their altered behaviour. At work, you may experience negative reactions such as maltreatment, breach of confidentiality, and even unfair dismissal (Samuel, 2020).

A study done by Mhode & Nyamhanga (2016) indicated that the respondents experienced different forms of HIV-related stigma, including verbal, social, and perceived stigma. They experienced various forms of discrimination, including relational discrimination, blame and rejection by their spouses, workplace discrimination, and mistreatment by healthcare workers. The study also found that patients prefer a distant healthcare facility to the extent of avoiding healthcare facilities near their homes because of fear of being seen by people who know them as friends and neighbours. This proves that both intrapersonal and interpersonal fear still exists.

**Participant 3 said:** *“because I am afraid if he can find out that I am taking ARVs he will dump me and no one will take care of me and the kids”.*

**Participant 7 said:** *“My grandmother from my mother’s side knows about it but my father and stepmother don’t know. I am afraid to tell them because they will hate me more and treat me badly”.*

**Participant 8 said:** *“Yooo..., is not that easy to tell your family or friends about your status because there are people who still see HIV as a taboo and they will start treating you badly, chase you from home and discriminate you, therefore I am afraid to tell anyone”.*

**Participant 9 said:** *“Yooo..., no one. I did not tell anyone about my status and I am not yet ready. My mother hates people with HIV and she calls them names, therefore, I am afraid to be judged and called names”.*

**Participant 12 said:** *“my parents are very strict if they can find out they will kick me out of the house”.*

#### **4.3.4.3 Sub-theme 4.3 Social, cultural, and spiritual constraints**

Social determinants including conventional medical practices and religion were identified by participants as hindrances to adherence to ART. The use of traditional medicine was a common practice as one of the participants whose been on treatment for about 1 to 3 years reported his use of both ART drugs and conventional treatment. Some participants reported that certain religions promoted faith healing and how much people were encouraged to abandon ART when the priests told them to have faith that they are healed through prayers (Moomba & Van Wyk, 2018). The following are the verbal quotes that support the findings of the study:

**Participant no 5 said:** *“I am a Christian from a certain church which I can't mention its name. Sometimes we undergo fasting and prayer for one day or even more and when we are fasting, I am unable to take my treatment because I don't eat anything and I become weak therefore I am afraid to take my treatment because I might become very sick by taking them in an empty stomach. The other thing is that our pastor will pray for us and tell us that we are healed and we should stop taking treatment after a while I become very sick and I go back and take my treatment again but I don't want my fellow Christian to know that I am taking any kind of treatment. Sometimes we go to a conference and we spend days or weeks there and we are sharing a room which makes it difficult for me to take treatment.*

**Participant no 10 said:** *“Yaa, my family knows about my status but they are not supportive and they don't want anything to do with me. I am on my own”.*

**Participant no 11 said:** *“My mother is a very traditional person who likes traditional medicine she always encourages me to take traditional medicine even if I take my ARVs. Even now I am still taking traditional medicine despite the warning from the nurses, I think they are the ones that interfere with my ARVs”.*

**Participant no 11 said:** *“When I tell my mother about my condition, she decided to take me to a traditional healer who told us that I’ve been bewitched this is not ordinary HIV is from witchcraft then because was sick and desperate we believed him and he gave me medicine to drink and he did lots of things in my body including inhalation cleaning of the stomach, etc. but my condition become worse and worse by the day. Then we decided to visit another traditional healer who was also a prophet she took me to the river and we did all sacrifices and rituals but no improvement and was admitted to the hospital where they put me on drips and other treatments and they restarted my HIV treatment then my condition started to improve day by day until I was discharged”.*

The findings are supported by the findings of the study conducted by Wasti, Simkhada, Randall, Freeman, and Teijlingen (2012), people living in a community need to abide by their local traditional and religious rituals, which can influence adherence to ART. For example, Muslims reported that they had to stop taking their treatment during Ramadan and some PLHIV did not take their ART because their culture required fasting from morning to evening.

According to the study done in Namibia, some participants said that when they asked their friends for help, they told them to put their faith instead of the medical or healthcare system. Participants who resorted to religion (church) for assistance were also counselled by other churchgoers to rely solely on God (Bauleth, Van Wyk & Ashipala, 2016).

Those with strong cultural beliefs seek traditional medicine first before they can go to healthcare facilities to seek help. The traditional healers will therefore persuade them that they are cursed and that only traditional medicine will be able to cure them (Bauleth, Van Wyk & Ashipala, 2016).

#### **4.3.3.4 Sub-theme 4.4 Socioeconomic constraints**

One of the key elements affecting clinic visit compliance is poverty, especially that which results from unemployment or underemployment. Failure to attend doctor visits was also connected to difficulties finding a job because of poor health. Due to a lack of employment, there is not enough money for food and transportation (Ilesanmi & Afolabi, 2021). The following are the verbal quotes that support the findings of the study:

**Participant 1 said:** *“Eish, there is no one who is working at home and we depend on social grants which are not enough for all of us to take care of all our needs. Therefore, sometimes there is no food to eat and this makes it difficult for me to take treatment as I cannot take treatment on an empty stomach, they advised us to take treatment after a meal and not to take treatment on an empty stomach, therefore I prefer not to take treatment because I will **feel** dizzy, nausea and vomiting if I take them without taking anything”.*

**Participant 2 said:** *“I am always tired and sleepy therefore this affects my performance at work and I am afraid to be fired that is why I decided not to take my treatment especially when I know I have to go to work unless I am off. Yooo..., this treatment since I started taking them, I become lazy, I cannot do anything I am always sleeping even house chores I can't do”.*

**Participant 4 said:** *“Sometimes we don't have money for transport to go to the clinic that is why most of the time we have to walk and is tiring”.*

**Participant 6 said:** *“I work at the farm and I usually go home at month end when I get off and that is when I get a chance to go to the clinic to collect my treatment”.*

**Participant 7 said:** *“To be honest we are spending too much money to go to clinics or hospitals for us to get treatment and sometimes we don't have that money. This is not fair at all; in the end, I end up not going to collect our treatment because there is nothing we can do or we are tired”.*

The findings supported by the findings of the study done in Zambia indicate that most participants were unemployed and experienced poverty. Even for those who were employed, the nature of their employment at times affects their ability to adhere to treatment as they often have to travel. The lack of income meant that most of them

were unable to buy food or afford transportation to meet their ART clinic appointment dates. Some participants stay very far from the health facilities and it is very difficult to make follow-up clinic appointments, especially during rainy seasons (Moomba & van Wyk, 2018).

Accessibility in terms of finances and location was also connected to ART default. The patients' long walks to get to medical facilities and their financial situation have a severe impact on their ability to take their ARVs as prescribed. Participants noted that they frequently skip out on treatment due to financial burdens related to transportation and the time it takes to get new prescriptions, and they also emphasized how lengthy distances contribute to skipping out on ARVs (Chirambo, Valeta, Kamanga & Nyondo-Mipando, 2019).

#### **4.3.5 Theme no 5: Healthcare factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV**

The study found that there are healthcare factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV. The ARV medication constraints and healthcare system constraints contribute to poor adherence to ART.

##### **4.3.5.1 Sub-theme 5.1 ARV medication constraints (side effects and size of pills)**

Anorexia, headaches, nausea, dizziness, and overall malaise are ART-related adverse effects. and vomiting occurs when one takes ARV medicine without enough food or drink. ART is too strong; it does not require anyone to take it with water alone. When you take them without food and heavy drinks, they make you feel dizzy, weak, and sleepy (Ajuna, Tumusiime, Amanyana, Awori, Rukundo & Asimwe, 2021). The following are the verbal quotes that support the findings of the study:

**Participant 2 said:** *“When I am taking ARV, I become sicker, after taking them I feel dizzy, drowsy, and itching all over my body. Sometimes I don’t sleep at night or I do have some nightmares at night”.*

**Participant 9 said:** *“Hee, Yooo, is not easy at all. No one can be used to this. They are very big to swallow and side effects are horrible”.*

**Participant 11 said:** *“the first time when I start taking them was feeling dizzy, nausea and vomiting for a long time and was unable to do anything or go anywhere therefore I decided to stop them”.*

**Participant 12 said:** *“For me honestly is because they are too big, difficult to swallow and they taste bitter. Sometimes they stuck to my throat and made me vomit. And the other thing is that after taking them I feel dizzy and nauseous, and then my body becomes weak making me sleep the entire day. Because of all this sometimes I take a break from taking them to avoid going through all this”.*

The study is supported by findings of a study conducted in the Eastern Cape revealed that many women stated that they stopped taking their medication because of ART side effects. They commonly reported side effects such as hallucinations, nausea, vomiting, dizziness, body weakness, insomnia, and rashes. Some of the women, who reported hallucinations, also stated that ART treatment made them feel dizzy, they experienced psychosis, had bad dreams, and saw dead people (Adeniyi, Goon, Owolabi, Ajayi & Lambert, 2018).

In the study done in Malawi, some participants were concerned about the side effects of ART initiation such as vomiting, skin rashes, and jaundice which contribute to them being defaulted from treatment. Participants also reported that although they were informed about the side effects and that they will get better as time goes on, they developed severe side effects which result in defaulting from ARV treatment to stop the side effects (Chirambo, Valeta, Mary, Kamanga & Nyondo-Mipando, 2019).

According to Bukenya, Mayanja, Nakamanya, Muhumuza & Seeley (2019) respondents reported that experiences or fear of treatment side effects led to their non-adherence to ART. They explained that even though during their pre-ART initiation, health workers informed them about the mild side effects that may occur, some of them experienced very severe side effects that cause them to stop taking

their ART. Among the reported severe side effects were body deformities, severe headaches, and nausea. Numbness, diarrhoea, and skin rashes.

One of the biggest obstacles to ART adherence was the size of the pill. This was due to the tablets' alleged difficulty in their consumption. Some patients avoid taking their ART pills with them in certain public places to avoid being recognised by the community members, which results in missing their ART doses. The community understands and knows HIV Treatment, so anyone with HIV can be recognised by the appearance or size of the pill they are carrying (Ajuna et al, 2021).

#### **4.3.5.2 Sub-theme 5.2 Healthcare system constrains (inadequate resources/support/ARV medication/access)**

An unreliable supply of medications can severely reduce patient adherence rates. In most sub-Saharan African countries, they are manifested by weak procurement and supply management system that led to a frequent shortage of ART and other essential inputs. In a survey of ninety-one low- and middle-income countries in 2008, 34% had experienced at least one stock out of required ART medication (Reda & Biadgilign, 2012).

Staff shortage plays a key role in the provision of ART to the patient, which can indirectly affect adherence. Due to understaffing, numerous providers were complaining of being overwhelmed by the number of patients they see per day and not being able to take a break or annual leave. Staff shortages affect the amount of time healthcare providers devoted to discussing ART medication with patients. Shortage of drugs **plays** a key role in patients' adherence to ART because it forces healthcare providers to ask for treatment from other health facilities nearby, which in turn affects the number of pills issued to the patient (McKinney, Modeste, Lee, Gleason & Maynard-Tucker, 2014).

According to Bauleth (2017), it shows that most of the participants indicated that overcrowding at the clinics resulted in several patients leaving the facility without receiving, and this led to patients being attended very late or leaving the clinic without medication. A few participants also brought up grievances regarding lengthy lines

and waiting periods at the clinics which contributed to their frustration and eventually treatment default. The following are the verbal quotes that support the findings of the study:

**Participant 4 said:** *“When you reach there you find out that there is no treatment or the clinic is full only a few nurses are helping us and you end up not receiving any help for that day and you have to come back the following day. Therefore, we end up not having treatment for some days”.*

**Participant 4 said:** *“Yooo..., the problem is that where I stay there is no clinic and we have to travel miles to go to the clinic. All the clinics are too far, mobile clinics sometimes come and sometimes do not. It is very depressing and because you travel a long distance to the clinic”.*

**Participant 4 said:** *“because there is no way that you can arrive there at the clinic before others because we stay far from the clinic and the service is very poor as we have to wait for the whole day to be helped. Sometimes they refer us to the hospital as there is no treatment at the clinical level.*

**Participant 6 said:** *“and when they come there is not enough treatment, especially ARVs therefore this causes stress to us because we have to stay a few days or a week without treatment until we go home. Sometimes when we arrive at the clinic there is no treatment then we have to go to the hospital to ask for treatment”.*

**Participant 6 said:** *“At the farms, there are no clinics, there were mobile clinics which use to come once a week but nowadays they are no longer coming”.*

The study done by Kwesi (2017) indicated that the majority of the participants expressed the view that nurses needed to be educated to respect patients' human dignity and to be trained to treat patients appropriately because the general level of respect for confidentiality is extremely low from nurses and they fail to treat patients with care or consideration. Other participants reported inadequate counselling for patients upon receiving their status and were not given enough time to accept their status but instead, they put them on treatment.

Most of the defaulters were dissatisfied with the negative attitudes of the nurses. Those who defaulted from their treatment feared going back to the clinic. Defaulters mention nurses and doctors being very rude to them and these negative attitudes of



the healthcare providers are demotivating them that's the reason they end up defaulting from their treatment (Bauleth, 2017).

**Participant 8 said:** *“Eish, the way nurses are treating us at our clinic is very bad. You know nurses are not the same, some know how to speak to people and treat them but others are rude, always shouting and they disrespect us. They will shout at you as if you are a small child just because you missed your appointment or you came to the clinic late without hearing the side of your story. Some nurses are always angry, irritable, and impatient, you cannot even ask questions or for clarity when you don't understand therefore when I think of such nurses, I end up not going to the clinic for my appointment which results in having no treatment to take. We are scared of nurses and this makes us default from our treatment”.*

#### **4.3.6 Theme no 6: Strategies to improve adherence to a fixed dose combination treatment among patients living with HIV**

The study found that there are strategies to improve adherence to fixed-dose combination treatment. Successful strategies to improve adherence have included cognitive and Behavioural strategies, directly observed therapy, peer support, and effective strategies that enhance the known facilitators of adherence to ARV therapy.

##### **4.3.6.1 Personal and social strategies**

**Acceptance of HIV status.** Patients need to acknowledge that they are HIV positive and take it like any other disease and accept it positively if they were to adhere to ARTs. Patients acknowledged that it is essential for them to come to terms with the fact that they are HIV positive and they had to take treatment for the rest of their life for them to adhere to their treatment (Ross, Aung, Campbell & Ogunbanjo, 2011).

**Readiness for adherence.** The most important personal component of adherence is the role of motivational readiness of the individual's ability to adhere to HIV treatment as prescribed. Readiness occurs when an individual reaches a conscious awareness that a particular behaviour is desired and beneficial to his or her own free will. Readiness is an important predictor and critical component in the initiation and maintenance of healthful ARV adherence behaviour (McKinsey & Enriquez, 2011).

**Psychological support.** It was noted that psychological support from healthcare workers, family, and community members plays a positive role in maintaining adherence among patients on lifelong ART. Psychological support facilitates acceptance of one's positive status, help to eliminate stigma, and also creates a platform where a client is encouraged and reminded about taking drugs (Chirambo et al, 2019). The following are the verbal quotes that support the study:

**Participant 1 said:** *"I think it is very important for me to take treatment daily for the sake of my health therefore I will start looking for a job anything that comes on my way I will grab it so that I will be able to buy food and other stuff".*

**Participant 2 said:** *"Mm, I think I should continue taking my treatment as required until it is used to my body and I am used to it maybe the side effects will eventually go away".*

**Participant 3 said:** *"but when time goes on, I accept my status and side effects faded and I used to take them off a daily basis"*

**Participant 3 said:** *"I've been taking treatment for eight years now. I know all the tricks I set an alarm to remind me to take treatment and I highlight the date to return to the clinic for collection of treatment so that I can't forget and it works very well.*

**Participant no 5 said:** *"Eish, I am not sure at all because I love my church and also like to see my health improving but I think I have to take my treatment daily without interruption for the sake of my family and my health.*

#### **4.3.6.2 Sub-theme 6.2 Healthcare education and supportive strategies**

Adherence classes are essential as they provide information about the disease, its progression, the correct doses of medication, and possible side effects; all of which are very important and help patients to ensure adherence (Ross, et al, 2011). The following are the verbal quotes that support the findings of the study:

**Participant 5 said:** *"The best thing that can be done is that healthcare workers should work hand in hand with pastors and bishop from different churches to train and educate them regarding health issues including HIV so that they will be able to support us instead of misleading us".*

**Participant 7 said:** *“Create a children’s support group so that will meet talk about our challenges and help each other. Keep on educating and supporting us”*

**Participant 9 said:** *“Eish, I don’t know what to say because they are doing their best. They must keep on educating and empowering us until we hear and change our behaviour and attitude”.*

**Participant 10 said:** *“Mm, I wish they can make my family understand and be supportive”.*

**Participant 11 said:** *“Mm. Healthcare workers should work hand in hand with community and traditional healers to educate them on various diseases like HIV, TB, AND others so that they will be able to see if a person has HIV or has been bewitched than misleading people. Our parents will have more knowledge if they educate them so that they won’t force us to do wrong things”.*

**Participant 11 said:** *“and bring my mother too to be educated so that she will stop forcing me to take traditional herbs. Secondly, I will join support groups at the clinic that is available at our clinic because I have been avoiding them since I was HIV positive”.*

The study done in Lesotho confirm that Support from family and friends facilitates adherence therefore recommending patients bring their family members or friends along for follow-up visits has been revealed to have a positive impact on adherence. Patients were advised to maintain a travel kit filled with enough ART medication for the duration of their absence from home. School education programs have suggested for children strengthen their roles as treatment supporters (Axelsson, Hallager & Barfod, 2015).

The study done in KwaZulu Natal discovered that disclosure to family members and friends was seen as important to successful adherence, even though it is not easy to disclose. All the participants agreed that disclosure is important as it allowed families to be involved in the care and support of their loved one, such as reminding them to take treatment and provision of financial support and food which play a vital role in encouraging adherence (Ross, *et al*, 2011).

#### **4.3.6.3 Sub-theme 6.3 Healthcare resources and ARV medication strategies**

Providing a longer supply of medications is one method to make it simpler for persons living with HIV to stick with their treatment regimen. It is well known that each time patients are asked to return to the clinic or come for follow-up, there is a chance that they can disengage from care because of taxi fares, long waiting times, and fear of being shouted at by nurses. Currently, national government policy says that people living with HIV should receive at least two months' supply of medication (Rambau & Xaba, 2020). The following are the verbal quotes that support the study:

**Participant 2 said:** *“The other thing I think maybe if they can change treatment, they are giving to us because they are too strong with many side effects that is why we are feeling what we are feeling after taking them maybe it can be better”.*

**Participant 4 said:** *“I think they should make sure that there is enough treatment every day so that we must not come to the clinic or spend the whole day at the clinic only to find out that there is no treatment. secondly, they have to make sure there is enough staff daily to assist us in order not to stay for hours in clinic the clinic.*

**Participant 6 said:** *“If they can give us two months' supply at every visit, I think this can help and reduce our stress of going up and down to get treatment.*

**Participant 8 said:** *“I think healthcare workers should change their attitude. They must know that they are not doing us any favor for us but they are there to help us. They need to treat us with love, respect, and patience. If they can do that, we won't be afraid of them and instead will feel free and safe around them.*

#### **4.3.6.4 Sub-theme 6.4. Governmental and managerial strategies**

The encouraging trend of increased access to ART access may be further scaled up if government and donors continue their commitment to the program. It is also very important that the government take an increasing role in the program to make it sustainable. These include the channeling of funds and policy commitments toward the evaluation and improvement of the program. Also, policy measures to improve the socioeconomic status and empowerment of their citizens in general and scaling up the effort to prevent the virus (Reda & Biadgilign, 2012). The following are the quotes that support the study:

**Participant 1 said:** *“Yaa nee, is not all about healthcare but also our government to assist with food parcels or vouchers every month to assist people like us who are not working”.*

**Participant 4 said:** *“Our government should build more clinics in all remote areas where there is no clinic to save us stress from travelling a long distance to other villages to get our treatment and in the meantime to make sure that mobile clinics are available at least two to three times a week to relieve this burden of us to travel a long distance when we need help related to health problems”.*

**Participant 6 said:** *“Health workers must ensure that mobile clinics are functional and reachable all the time and have enough treatment”.*

**Participant 8 said:** *“Supervisors and managers must always be around to check and monitor how healthcare workers work and treat patients and when we complain they must address the problem and there must be some changes and improvement”*

#### **4.4 THEORETICAL FRAMEWORK AND RESEARCH FINDINGS**

The Health Belief Model guided this study because it created a better framework for studying health behaviour. The principle of this model informed the topic guide. We conceptualised perceived susceptibility to AIDS in people living with HIV as a motivational factor to take ARVs to remain virally suppressed. Perceived severity applied in the aspects of the topic guide that asked participants about their health when they were initiated on ARVs and if they knew their immunological status. The perceived barrier formed the greater aspect of the guide by asking about the different forms of barriers to ART adherence. Indications to action were interpreted in the study as any factors that motivated participants to remain on ARVs while self-efficacy was covered when participants were asked if they understand and have knowledge about their condition and the ability to care for themselves.

#### **4.5 CONCLUSION**

The findings of the study were discussed and presented in this chapter. The information was displayed using themes and sub-themes. To strengthen these study findings in the body of prior research, the literature control was discussed. It also

discussed how the theory and the results fit together. The summary, restrictions, and recommendations of the study will be covered in the following chapter.

## **CHAPTER 5**

### **SUMMARY, LIMITATION, RECOMMENDATION, AND CONCLUSIONS**

#### **5.1 INTRODUCTION**

The study's conclusion is contained in this chapter. This section presents the summary of the research report and the description of the recommendations of the

research study based on the themes identified. The limitations of the study were also identified and discussed.

## **5.2 SUMMARY OF THE STUDY RESULTS**

A summary of the research objectives, design and methods, and findings are as follows:

### **5.2.1 The study's purpose**

The study's purpose was to determine factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.

### **5.2.2 The study's objectives**

The study's objectives were:

- To examine the elements that contribute to low adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.
- To outline the elements that contribute to poor adherence to a fixed-dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.
- To suggest approaches to improve adherence to a fixed dose combination treatment among patients living with HIV at HC Boshoff CHC in Sekhukhune District, Limpopo Province.

## **5.3 RECOMMENDATION FOR THE RESEARCH STUDY BASED ON THEMES**

The following recommendations were made based on identified themes:

### **5.3.1 Recommendations for Theme 1: experiences of patients living with HIV requiring daily ARV medication**

#### **5.3.1.1 Psychological experiences**

- Most patients require psychological interventions therefore they should be referred to a psychologist for individual counselling.

- To enhance the mental health and general well-being of people living with HIV, interventions such as peer support, cognitive behavioural therapy, and counselling need to be used. Counselling and psychological interventions are crucial in the treatment of people with HIV infection or AIDS because they help patients manage their condition or improve their quality of life while also reducing the spread of the infection, severe psychological distress, or psychiatric illness.

### **5.3.2 Recommendations for Theme 2: Factors facilitating adherence to a fixed-dose combination treatment among patients living with HIV**

#### **5.3.2.1 Social disclosure and support**

- Patients who disclosed their status exhibited improved social support, stronger family and relationship cohesion, and decreased anxiety and depressive symptoms. Patients should be urged to tell their family members about their condition.
- Realistic and successful HIV disclosure decision-making is crucial because it fosters social support, implements HIV risk reduction with partners, and encourages partners to seek out voluntary counselling and testing.

### **5.3.3 Recommendations for Theme 3: Personal factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV**

#### **5.3.3.1 Behavioural constraints (risky behaviour)**

- Condoms are incredibly successful at preventing HIV and other sexually transmitted illnesses when correctly used each time. HIV-positive patients are to be educated on the use of condoms.
- Alcohol consumption may reduce adherence to ART and lead to increased viral replication as it changes the way ART works in the body and increase the risk of liver damage therefore it is important for the healthcare provider to address alcohol problems without being judgemental

#### **5.3.3.2 Psychological constraints (memory)**

- Encourage the use of alarm clocks as a reminder



- Supplying adherence aids such as pill packets and a written medication schedule.
- Patients ought to be urged to bring their treatment companions to the clinic to assist them in remembering information being told, taking treatment, and reminding them of the appointment date.

### **5.3.4 Recommendations for Theme 4: Factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV**

#### **5.3.4.1 Non-disclosure of HIV status related to stigma and discrimination**

- People living with HIV experience emotional distress and mental illness as a result of HIV stigma and prejudice. Talking openly about HIV can help normalise the subject and also provide opportunities to correct misconceptions and help people learn more about HIV.
- Family support has been shown to affect discrimination and stigmatization therefore patients should be encouraged to disclose and be educated on the benefits of disclosure.

#### **5.3.4.2 Social, cultural, and spiritual constraints**

- Training of traditional healers, Priests, and community with regards to the background of HIV, prevention, treatment, and side effects.
- It's crucial to involve more vulnerable communities, and one way to achieve this is through awareness programs that inform people about the psychological effects of HIV.
- The interdisciplinary team should include traditional and spiritual healers, and its strategy should integrate cognitive, behavioural, and affective techniques.

#### **5.3.4.3 Socioeconomic constraints**

- The government should assist in providing social grants to those who are not working or there is no source of income in the family to assist them with basic needs such as food and money for transport to the clinic for collection of treatment.
- Patients with no source of income receive food parcels at least once a month from the government.

- Assist HIV patients to start gardening to plant vegetables so that they will be able to sell and eat them to maintain good nutrition.
- Empowering patients to start their small businesses to earn some money for basic needs such as food.

### **5.3.5 Recommendations for Theme 5: Health factors contributing to poor adherence to a fixed-dose combination treatment among patients living with HIV**

#### **5.3.5.1 ARV medication constraints (side effects and size of pill)**

- Healthcare providers to educate patients on specific side effects to look out for and suggestions on how to deal with manageable side effects and also about the signs of life-threatening side effects that require immediate medical care at the start of ARV treatment.

#### **5.3.5.2 Healthcare system constraints (inadequate resources/support/ARV)**

- Reduce the number of routine check-ups by utilising community health workers to distribute ART refills or by issuing two to three months of treatment to all stable HIV patients.
- To broaden the ART care network beyond clinic walls to community distribution points, mobile posts, and even homes.
- Mobile services to be functional and reachable to communities that are far from the clinics or where there is no clinic.
- Central Chronic Medicine Dispensing and Distribution programme known as the CCMDD program to be utilised as it permits HIV patients who are stable to obtain their medicines at pick-up points closer to home.

### **5.3.6 Recommendations for Theme 6: Approaches to improve adherence to a fixed-dose combination treatment among patients living with HIV**

#### **5.3.6.1 Healthcare educational and support strategies**

- Facility manager to ensure that there is a support group in the facility that is active and functional.

- Healthcare workers to ensure that patients know about the support group and the purpose of the support group and encourage them to attend it.
- Family and peer support groups are crucial because they not only give PLHIV stability on the social, economic, and mental levels, but they also lessen the stress they experience.
- For an HIV-positive individuals to successfully deal with the psychological effects of HIV/AIDS, they require help from their family, friends, and HCWs
- Health education to be given to HIV/AIDS patients, traditional healers, Priests, and relatives regarding the mode of transmission, prevention of the disease, side effects of ART medication as well as the significance of medication compliance.
- Ongoing adherence to HIV/AIDS patients.

#### **5.3.6.2 Government and management strategies**

- Employ more healthcare providers to cover for the shortage of staff and reduce work overload.
- Ensure that there is enough ARV treatment at all times both adults and children.
- Health facilities to function 24 hours and 7 days a week to allow everyone accesses to health especially those that are working.

#### **5.3.7 Healthcare workers**

- Healthcare workers to ensure that ARVs are always available at the clinic by doing stock taking and ordering treatment in time.
- Healthcare professionals should maintain a non-judgmental approach, build trust with patients and families, and decide on care objectives that everyone can agree on.
- Patient-provider relationship should be maintained by creating a therapeutic environment that is free from harm, discrimination, judgemental, and disrespect.
- Patients' values and beliefs should be respected.  
Patients should be involved in the decision-making process related to their health and treatment by healthcare professionals.

- Healthcare workers to change their attitude towards their patients and treat them with love, care, and respect.

#### **5.4 LIMITATIONS OF THE STUDY**

The study was conducted at a selected community health centre in the Sekhukhune District of the Limpopo Province in South Africa. The language barrier was a problem as other patients from other provinces and neighbouring countries were unable to communicate well in English and Sepedi which makes it difficult for them to explain in detail. Only a few patients were reached because it was very difficult to find defaulted patients from ART as most of them are no longer coming for treatment and it was difficult to trace them as most provided incorrect contact numbers or addresses and some relocated.

#### **5.5 CONCLUSION**

This chapter concentrated on the summary of the study's findings addressing factors associated to factors contributing to poor adherence to a fixed-dose combination of ART among patients living with HIV, acknowledging its shortcomings, and offering some suggestions for further research.

### **REFERENCES**

- Abdosh, T, Mtiku, H & Teklemariam, Z. 2013. Factors affecting adherence to Antiretroviral Treatment in Harari Nation Regional State, Eastern Ethiopia.
- Abidiga, M, Hasen, T, Mosisa, G & Abdisa, E. 2020. Adherence to antiretroviral therapy and associated factors among Human immunodeficiency virus-positive patients accessing treatment at Nekemte referral hospital, West Ethiopia, 2019. PLoS ONE 15(5).

Adeniyi, OV. Ajayi, AI, Ter Goon, D, Owolabi, EO, Eboh, A & Lambert, J. 2018. Factors affecting adherence to antiretroviral therapy among pregnant women in the Eastern Cape, South Africa. *BMC Infectious Disease*.

AIDSInfor. 2015. Guidelines for the use of Antiretroviral Agents in HIV-infected adults and adolescents. Management of the treatment-experienced patients.

Ajuna, N, Tumusiime, B, Amanywa, J, Awori, S, Rukundo, G. Z & Asiimwe, J. B. 2021. Social networks and barrier to ART Adherence Among Young Adults Living with HIV at selected Primary Health Facilities of South-Western Uganda.

Ali, JH & Yirtaw, TG. 2019. Time to viral load suppression and its associated factors in cohort of patient taking antiretroviral in East Shewa zone, Oromia, Ethiopia. *BMC Infection Diseases*.

Allen, M. 2017. *The SAGE Encyclopedia of Communication Research Methods. Coding of Data*.

Altice, F, Evuarherhe, O, Carter, G & Beaubrun, AC. 2018. Adherence to HIV treatment regimens: systematic literature review and meta-analysis. Patient preference and adherence.

Axelsson, JM, Hallager. S. & Barfod, TS. 2015. Antiretroviral therapy adherence strategies used by patients of a large HIV clinic in Lesotho. *Journal of Health, Population, and Nutrition*. 33(10).

Azia, IN, Van Wyk, B & Mukumbang, FC. 2016. Barriers to adherence to antiretroviral treatment in a regional hospital in Vredenburg, Western Cape, South Africa. *Southern African Journal of HIV medicine*. 17(1).

Babbie, E. & Mouton, J. 2011. *The practice of social research*. Cape Town: Oxford University Press.

Basti, BD, Mahesh, V, Bant, DD & Bathija, GV. Factors affecting antiretroviral treatment adherence among people living with human immunodeficiency syndrome: A prospective study. *Journal of Family Medicine and Primary Care*.

Bauleth, MF, Van Wyk, B & Ashipala, DO. 2016. Factors associated with poor adherence amongst patients receiving antiretroviral therapy at the Oshakati intermediate hospital in Namibia.

Bauleth, MF. 2017. Factors associated with poor adherence amongst patients receiving antiretroviral therapy at the intermediate hospital Oshakati in Namibia. The University of Western Cape.

Boswell, C & Cannon. 2014. Introduction to Nursing research: incorporating evidence-based practice. 3<sup>rd</sup> edition. USA.

Boswell, C & Cannon, S. 2017. Introduction to nursing research. incorporating Evidence-Based Practice. Burlington, MA: Jones and Bartlett Learning. 4<sup>th</sup> edition.

Brink, H, Van der Walt, C & van Rensburg, G. 2012. Fundamentals of Research Methodology for Healthcare Professionals. 3<sup>rd</sup> edition. Cape Town: JUTA.

Burns, SN. & Grove, SK. 2011. The practice of Nursing Research. 5<sup>th</sup> edition. St Louis: Saunders Publisher.

Campbell, S.2016. Perspectives: Method and methodology in nursing research. Journal of Research in Nursing. SAGE Journal, 21(8)

Chesney, MA. 2000. Factors affecting adherence to antiretroviral therapy. Clinical Infection Disease. Oxford academic. 30(2).

Chhim, K, Mburu, G, Tuot, S, Sopha, R, Khol, V, Chhoun, P & Yi, S. 2018. Factors associated with viral non-suppression among adolescents living with HIV. Cambodia.

Chirambo, L, Valeta, M, Banda, K, (2019). Factors influencing adherence to antiretroviral treatment among adults accessing care from private health facilities in Malawi. BMC Public Health.

Chirambo, L, Valeta, M, Kamanga, M, Mary, T & Nyondo-Mipando, AL. 2019. Factors influencing adherence to antiretroviral treatment among adults accessing care from private health facilities in Malawi. BMC Public Health.

Coffelt, TA. 2022. Confidentiality and anonymity of participants. The SAGE Encyclopedia of communication research methods.

Creswell, JW. 2009. *Research Design: Qualitative, Quantitative, and Mixed Approach*. London: Sage Publishers.

Davis, NC. 2013. Fixed-Dose combination of adults accessing antiretroviral therapy. *Southern African Journal of HIV Medicine*. 14(1).

Davey, DJ, Abrahams, Feinberg, Z, Feinberg, M, Prins, M, Serrao, C, Medeossi, B & Darkoh, E. 2019. Factors associated with recent unsuppressed viral load in HIV-1.

De Vos, AS, Strydom, H, Fouche, CB & Delport, CSL. 2011. *Research at Grass Roots for the social science and human service profession*. 4<sup>th</sup> edition. Pretoria: van Schaik Publishers.

Dorcelus, L, Bernard, J, Georgery, C & Vanessa, C. 2021. Factors associated with antiretroviral therapy adherence among people living with HIV in Haiti. *AIDS Research and Therapy*. 18(81),

Dudovskiy, J. 2022. *The ultimate Guide to writing a dissertation in Business Studies: step-by-step assistance*. 6<sup>th</sup> edition.

Ehlers, VJ & Tshisuyi, ET. 2015. Adherence to Antiretroviral treatment by adults in a rural area of Botswana. 38(1).

Elvis, ET & Francis, BZ. 2015. Application of the Health Belief Model in HIV prevention: A Literature Review. *Central African Journal of Public Health*. 1(1).

Evangeli, M & Wroe, AL. 2016. HIV disclosure Anxiety: A Systematic Review and Theoretical Synthesis.

Gautam, CS & Saha, L. Fixed-dose drug combinations (FDCs): rational or irrational: a viewpoint. *British Journal of Clinical Pharmacology*.

Gupta, M & Das, SC. 2019. Determinants contributing to poor adherence to antiretroviral therapy: A hospital record-based study in Balasore, Odisha. *Journal of Family Medicine and Primary Care*.

Hirasen, K, Evans, D, Maskew, M, Sanne, IM, Shearer, K, Govathson, C, .2018. The right combination treatment outcome among HIV-positive patients initiating first-line

fixed dose antiretroviral therapy in a public sector HIV clinic in Johannesburg, South Africa. *Clinical Epidemiology*, Dove Press.

Hollard, HM & Linville, JS. 2019. Important considerations for protecting human research participants. *Dimensions of discovery*.

Huong, DTM, Bannister, W, Phong, PT, Kirk, O & Peters, I. 2011. Factors associated with HIV-1 virological failure in an outpatient clinic for HIV-infected people in Haiphong, Vietnam. 22(11).

Iacob, Simona A., Diana G. I & Gheorghita J. 2017. "Improving the adherence to antiretroviral therapy, a difficult but essential task for a successful HIV treatment—clinical points of view and practical considerations." *Frontiers in pharmacology* 8 (2017): 831.

Jamieson, D & Kellerman, SE. 2016. The 90 90 90 strategies to end the HIV pandemic by 2030: can the supply chain handle it? *Journal of the International AIDS Society*. 19(1).

Kabir, SMS. 2016. *Methods of data collection. Basic Guidelines for research*. Curtin University. Bangladesh.

Katz, IT, Ryu, AE, Onuegbu, AG, Praros, C, Weiser, SD, Bangsberg, DR & Tsai, AC. 2013. Impact of HIV-related stigma on treatment adherence: Systematic review and meta-synthesis. *Journal of the International AIDS Society*, 16(3).

Kauf, TL, Davis, K, Earnshaw, SR & Davis, EA. 2012. *Spillover adherence effects of fixed-dose combination HIV therapy. Patient preference and adherence*. Dove press.

Kioko, M.T & Pertet, A.M. 2017. Factors contributing to antiretroviral drug adherence among adults living with HIV or AIDS in a Kenyan rural community. *African Journal of Primary Health Care & Family Medicine*.

Kioko, MT & Pertet, AM. 2017. Factors contributing to antiretroviral drug adherence among adults living with HIV or AIDS in a Kenyan rural community. *African Journal of Primary Health Care & Family Medicine*. 9(1).



Kwesa, JG. 2014. Non-adherence to Antiretroviral treatment by people living with HIV/AIDS in black community in South Africa: Socio-cultural changes. *Mediterranean Journal of Social Sciences*. Rome-Italy. 5(14).

Kwesa, JG. 2017. Exploring the factors and effects of non-adherence to antiretroviral treatment by people living with HIV/AIDS. Department of Psychology University of Fort Hare, South Africa. *Indo-Pacific Journal of Phenomenology*. 17(1).

Legesse, TA. & Reta, MA. 2019. Adherence to Antiretroviral Therapy and Associated Factors among People Living with HIV/AIDS in Hara Town and Its Surroundings, North-Eastern Ethiopia: A Cross-Sectional Study. *Ethiopian journal of health sciences*,29(3).

Letta, S, Demissie, A, Oljira, L & Dessie, Y. 2015. Factors associated with adherence to Antiretroviral Therapy (ART) among adult people living with HIV and attending their clinical care, Eastern Ethiopia. *BMC International Health Rights*. 15(33).

Liu, Y, Avant, KC, Aunguroch, Y, Zhang, X & Jiang, P. 2014. Patient outcomes in the field of nursing: A concept analysis. *International Journal of Nursing Science*. 1(1).

Mabunda, K, Nagasawa, EL, Babalola, JO, Zunza, M & Nyasulu, P. 2019. Determinants of poor adherence to antiretroviral treatment using a combined effect of age and education among human immunodeficiency virus-infected young adults attending care at Letaba Hospital HIV Clinic, Limpopo Province, South Africa. *The Pan African Medical Journal*, 32.

Marriner, TA & Raile, AM. 2005. *Nursing theorists and their work*. The Health Promotion Model. St Louis: Mosby. 5<sup>th</sup> ed.

McCombes, S. 2022. *What is a literature review? Guide, Template & Example*. Scribbr.

McKinney, O, Modeste, NN, Lee, JW Gleason, PC & Maynard-Tucker, G. 2014. Determinants of Antiretroviral Therapy Adherence among Women in Southern Malawi: Healthcare Providers 'Perspectives. *AIDS Research and Treatment*.

McKinsey, DS & Enriquez, M. *Strategies to improve HIV treatment adherence in developed countries: clinical management at the individual level*. USA.

- Medelyan, A. 2019. Coding qualitative data: how to code Qualitative Research.
- Mogosetsi, NJ, Mabuza, LH & Ogunbanjo. 2018. The prevalence of HIV Load Suppression and Related Factors among patients on ART AT Phedisong 4 clinic. Sefako Makgatho Health Sciences University. Pretoria, South Africa.
- Moomba, K & Van Wyk, B. 2019. Social and Economic barriers to adherence among patients at Livingstone General Hospital in Zambia.
- Moomba, K. & Van Wyk, B. 2019. The social and economic barrier to adherence among patients at Livingstone General Hospital in Zambia. African Journal of Primary. 11(1).
- Moriarty, F Bennett K & Fahey, T. 2018. Fixed dose combination antihypertensive and risk of medication error. British Journal of sports medicine. 105(3)
- Moule, P & Goodman, M. 2014. Nursing Research: an introduction. 2<sup>nd</sup> edition. British Library: SAGE.
- Moyo, F, Chasela, C, Brennan, AT, Ebrahim, O, Sanne, JM, Long, L & Evans, D. 2016. Treatment outcome of HIV-positive patients on first-line antiretroviral therapy in private versus public HIV clinic in Johannesburg, South Africa. National Library of Medicine.
- Mugoh, EKN, Kabiru, E & Mwaniki, J. 2016. Patient factors influencing adherence to ART Treatment among HIV/AIDS patients in Embu teaching and referral Hospital Comprehensive Care Clinic. Science Journal of Public Health.4(5).
- Mukumbang, FC, Orth, Z & Van Wyk, B. 2019. What do the implementation outcome variables tell us about the scaling-up of the antiretroviral treatment adherence clubs in South Africa? A document reviews. Health Research Policy and System, 17(1).
- Namoomba, HC, Makukula, MK & Masumo, MM. 2019. Factors influencing adherence to Antiretroviral Therapy among HIV Positive adolescents at adult Infection Diseases Centre in Lusaka, Zambia. Open Journal of Nursing. 9(4).
- NDoH. 2019. 2019 ART Clinical Guidelines for the Management of HIV in adults, pregnancy, adolescents, children, infants, and neonates.

Negesa, L, Demeke, E & Mekonnen, W. 2017. Adherence to Antiretroviral Therapy and Factors affecting among people living with HIV/AIDS and taking Antiretroviral Therapy. Dire Dawa Town, Eastern Ethiopia. Journal of infection disease and treatment. 3:1.

South African National AIDS Council. 2017. South African National Strategic Plan on HIV, TB and STIs 2017-2022.

Stoppler, MC. 2021. Medical definition of patients. Medicinenet.com.

Niewenhuis, J. 2016. Qualitative research designs and data gathering techniques. In Maree. The first step in research. Pretoria: Van Schaik Publisher.

Paul, A. 2019. Fixed Dose Combination. Introduction to Basic of Pharmacology and Toxicology. Springer, Singapore.

Pebody, R. 2019. HIV, mental health, and emotional well-being. aidsmap.

Pilot, FD & Beck, CT. 2012. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 9<sup>th</sup> edition. Philadelphia: Williams & Wilkins.

Polit, DF & Beck, CT. 2017. Nursing Research: generating and assessing evidence for nursing practice. Philadelphia. 10<sup>th</sup> edition.

Polit, DF & Beck, CT. 2017. Nursing research: Generating and assessing evidence for nursing practice. Philadelphia: Lippincott Williams and Wilkins.

Polit, DF & Beck, CT. 2018. Essentials of nursing research: Appraising evidence for nursing practice. Philadelphia: Lippincott Williams and Wilkins.

Rambau, N & Xaba, S. 2020. Longer HIV treatment supplies can support better long-term adherence. In-depth, public interest health journalism. SA.

Reda, AA & Biadgilign, S. 2012. Determinants of Adherence to Antiretroviral Therapy among HIV-Infected Patients in Africa. AIDS Research and Treatment.

Remien, HR & Rabkin, JR. Psychological aspects of living with HIV disease. A primary care perspective. Western Journal of living. BMJ Publishing Group.

Ross, AJ, Aung, M, Cambell, L &Ogunbanjo, GA. 2011. Factors that positively influence adherence to antiretroviral therapy by HIV and/or AIDS patients and their caregivers. *African Journal of Primary Health Care & Family Medicine*, 3(1).

Ross, AJ, Aung, M, Campbell, L & Ogunbanjo, GA. 2011. Factors that positively influence adherence to antiretroviral therapy by HIV and/or AIDS patients and their caregivers. *African Journal of Care & Family Medicine*. 3(1)

Rowell-Cunsolo, TL & Hu, G. 2020. Barriers to optimal antiretroviral therapy adherence among HIV-infected formerly incarcerated individuals in New York City. *PLOS ONE* 15(6).

Samuel, K. 2020. Pros and cons of disclosing your status. *Telling people, you have HIV*. *aidsmap*.

Schaecher, KL. 2013. The importance of treatment Adherence in HIV. *Addressing Adherence Challenges Associated with Antiretroviral Therapy*. 19(12)

Selamu, LG, Singhe, MS & Assefa, E. (2017) The psychosocial factors that influencing Antiretroviral Treatment Adherence. *Journal of Clinical Research in HIV/AIDS and Prevention*. 3(1).

South African National AIDS Council. 2017.

Suryana, K, Suharsono, H & Antara, GPJ. 2019. Factors associated with Adherence to Anti-Retroviral Therapy among people living with HIV/AIDS at Wangara Hospital in Denpasar, Bali, Indonesia, 11.

Sweileh, WM. 2018. Global research output on HIV/AIDS- related medication adherence from 1980-2017. *BMC Health SERV Res*. 18:765

UNAIDS. 2014. *Global AIDS response progress reporting 2014 construction of core indicators for monitoring the 2011 United Nations Political Declaration on HIV and AIDS*.

UNAIDS. 2016. *Global AIDS Geneva: Joint United Nations program of HIV/AIDS*.

UNAIDS. 2018. *Untransmittable public health and HIV Viral Load Suppression*. Geneva. Switzerland.

United Nation. 2015. Sustainable Development Goals.

UNAIDS. 2021. HIV and AIDS Basic factors.

Van Galen, AK, Nellen, FJ & Nieuwkerk, PT. 2014. The effect on treatment and adherence of administering drugs as Fixed-Dose Combination versus as separate pills: Systematic review and meta-analysis. *AIDS Research and Treatment*.

Wasti, SP, Simkhada, P, Randall, J, Freeman, JV & van Teijlingen, E. 2012. Factors influencing adherence to antiretroviral treatment in Nepal; a mixed method study. *Journal pone*. 7(5).

WHO. 2013. Consolidation guidelines on the use of Antiretroviral Drug for treating and preventing HIV Infection. Recommendations for a public health approach.

WHO. 2015. Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV.

Yu, Y, Luo, D, Chen, X, Huang, Z, Wang, M & Xiang, S. 2018. Adherence to antiretroviral therapy among newly treated people living with HIV. *BMC Public Health*.

## **Annexure A: Interview Guide (English vision)**

Central question

How long have you been taking treatment?

Probing questions

What does it like to take treatment every day at a specific time?

Kindly describe in detail the problems, factors, or things that prevent you from taking your treatment as advised by the healthcare workers.

Do you have anybody at home or around who knows about your diagnosis or status and can remind and support you to take treatment?

How would you like the healthcare worker to do, to help to take treatment as required?

What do you think can be done to improve your situation?

## **Annexure B: Interview guide (Sepedi vision)**

Central question

Le na le nako e Kae le e nwa dihlare?

Probing questions

Go bjang go nwa dihlare tsatsi le lengwe le le lengwe ka nako e tee?

Rekgopela le re hlalose tse ka botlalo mathata, diemo goba dilo tseo di le paledisago go nwa dihlare go ya le ka mo le hlatholletswego ka gona ke basomedi ba tsa maphelo.

Ka gae goba mo le dulago gona, go na le motho yo a tsebago ka seemo sa lena ebile o kgona go le thekga le go le gopotsa go nwa dihlare tsa lena?

Basomedi ba tsa maphelo ba ka le thusa ka mokgwa ofe gore le kgone go nwa dihlare tsa lena ka moo go nyakegang?

Ke eng seo le bonang gore se ka dirwa go fetola seemo sa lena?

**Annexure C: Letter of permission**

PO BOX 530

Glen-Cowie

1061

09 March 2020

H.C BOSHOFF CHC

Private Bag x 9119

Driekop

1129

Dear Sir/Madam

**REQUISITION FOR CONDUCTING A RESEARCH**

I, Matlala M.J, a Master's in nursing student at the University of Limpopo asking for permission to conduct research among patients living with Immunodeficiency Virus (HIV) who are not adhering to Antiretroviral treatment and whose viral load is not suppressing. The aim is to determine the factors related to poor viral load suppression among HIV patients on ART at H.C BOSHOFF C.H.C.

Your response will be highly appreciated.

THANK YOU

Yours faithfully

MATLALA M.J



**Annexure D: Letter of permission**

PO BOX 530

Glen-Cowie

1061

09 March 2020

Limpopo Department of Health

Private bag x 9302

Polokwane

0700

Dear Sir/Madam

**REQUISITION FOR CONDUCTING A RESEARCH**

I, Matlala M.J, Master's in nursing student at the University of Limpopo hereby ask permission to conduct research among patients living with Immunodeficiency Virus (HIV) who are not adhering to Antiretroviral treatment and whose viral load is not suppressing. The aim is to determine the factors related to poor viral load suppression among HIV patients on ART at H.C BOSHOFF C.H.C.

Your response will be highly appreciated.

THANK YOU

Yours faithfully

MATLALA M.J

**Annexure E: Informed Consent Form**

**UNIVERSITY OF LIMPOPO**

Statement concerning participation in Clinical Research Project

Name of the Study: Factors related to poor viral load suppression among HIV patients on ART at H.C Boshoff CHC, Sekhukhune District, Limpopo Province.

I have read the information on the aims and objectives of the proposed study and was provided with the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I understand that participation in this Clinical Study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will not influence the care that I receive from my regular doctor.

I know that this Study has been approved by the Research, Ethics, and Publications Committee of the Faculty of Medicine, University of Limpopo. I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Study

.....  
.....

Name of participant

Signature of participant

.....

.....

.....

Place

Date

Witness

## Annexure F: Budget

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST</b>
Stationery	Pens	R100
	Printing	R150
	Photocopies	R100
	Binding	R200
Communication for appointments	Airtime, data, fax, and letters	R300
Transport	From H.C Boshoff to town for copies	R200
Coding	Coding of transcripts	R5000
Language editor	Editing dissertation	R5000

## Annexure G: Time Frame

<b>ACTIVITY</b>	<b>TIME FRAME</b>
1 Writing of research proposal	January to February 2020
2 Presentation to Nursing Department research panel	March 2020
3 Revise proposal	March 2020
4 Submission to Senior Degrees Committee	March 2020
5 Presentation to Senior Degree Committee	May 2020
6 Submission to Research Ethics committee	June 2020
7 Pilot study	July 2020
8 Data collection	January 2021
9 Data analysis	April 2021
10 Report writing	June 2021
11 Presentation of the report to the Nursing Department Research panel	September 2021
12 Submission to the language editor	October 2021
13 Submission of dissertation for external examination	October 2021

## Annexure H: Faculty Approval of Proposal



**University of Limpopo**  
Faculty of Health Sciences  
Executive Dean

Private Bag X1106, Sovenga, 0727, South Africa  
Tel: (015) 268 2149, Fax: (015) 268 2685, Email:tebogo.mothiba@ul.ac.za

**DATE: 03 DECEMBER 2020**

**NAME OF STUDENT:** MATLALA MJ  
**STUDENT NUMBER:** 201504612  
**DEPARTMENT:** NURSING  
**SCHOOL:** HEALTH CARE SCIENCES  
**QUALIFICATION:** MNURS

Dear Student

### **FACULTY APPROVAL OF PROPOSAL (PROPOSAL NO. FHDC2020/7)**

I have pleasure in informing you that your MNURS proposal served at the Faculty Higher Degrees Meeting on the 03 NOVEMBER 2020 and your title was approved as follows:

Approved Title: "Factors contributing to poor adherence to a fixed-dose combination treatment among patients living with Human Immunodeficiency virus at HC BOSHOFF Community Health Centre in Sekhukhune District, Limpopo Province"

#### **Note the following:**

<b>Ethical Clearance</b>	<b>Tick One</b>
Requires no ethical clearance Proceed with the study	
Requires ethical clearance (TREC) (apply online) Proceed with the study only after receipt of ethical clearance certificate	√

Yours faithfully

**Prof T.M Mothiba**  
Chairperson

**CC: Supervisor: DR P.M Mamogobo**  
**CO- Supervisor: Mrs T Mutshatshi**

## Annexure I: TREC Approval Letter



**University of Limpopo**  
Department of Research Administration and Development  
Private Bag X1106, Sovenga, 0727, South Africa  
Tel: (015) 268 3935, Fax: (015) 268 2306, Email:anastasia.ngobe@ul.ac.za

### TURFLOOP RESEARCH ETHICS COMMITTEE

#### ETHICS CLEARANCE CERTIFICATE

**MEETING:** 13 April 2021

**PROJECT NUMBER:** TREC/62/2021: PG

**PROJECT:**

**Title:** Factors contributing to poor adherence to a fixed dose combination treatment among patient living with Human Immunodeficiency Virus at HC Boshoff Community Health Centre in Sekhukhune District, Limpopo Province

**Researcher:** MJ Matlala  
**Supervisor:** Dr PM Mamogobo  
**Co-Supervisor/s:** Mrs TE Mutshatshi  
**School:** Health Care Sciences  
**Degree:** Master of Nursing

**PROF P MASOKO**

**CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE**

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

**Note:**

- i) This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.
- ii) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.
- iii) PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

## Annexure J: Limpopo Department of Health Permission Letter



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

### Department of Health

Ref : LP\_2021-06-010  
Enquires : Ms PF Mahlokwane  
Tel : 015-293 6028  
Email : [Phoebe.Mahlokwane@dhsd.limpopo.gov.za](mailto:Phoebe.Mahlokwane@dhsd.limpopo.gov.za)

Matlala Jane

#### **PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES**

Your Study Topic as indicated below;

Factors contributing to poor adherence to a fixed dose combination treatment among patient living with human immunodeficiency virus at HC Boshoff community health Centre in Sekhukhune district, Limpopo province.

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
  - a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
  - b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
  - c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
  - d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
  - e. The approval is only valid for a 1-year period.
  - f. If the proposal has been amended, a new approval should be sought from the Department of Health
  - g. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated

pp Head of Department

15/07/2021

Date

NB: Currently access is restricted to our facilities due to Covid-19, therefore this approval is applicable within our Covid-19 policies and circulars

Private Bag X9302 Polokwane  
Fidel Castro Ruz House, 18 College Street, Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.  
Website: <http://www.limpopo.gov.za>

*The heartland of Southern Africa – Development is about people!*

## Annexure I: Editing Certificate



Matlala Malebeleko Jane  
University of Limpopo  
Sovenga  
0727

---

420 Unit C Mankweng 0727  
081 5666 755

rightmovemultimedia@gmail.com

Researcheditors882@gmail.com

karabokonyani@gmail.com

---

15 October 2022

### TO WHOM IT MAY CONCERN

This editing certificate verifies that this dissertation was professionally edited for Matlala Malebeleko Jane (201504612).

Thus, it is meant to acknowledge that I, Mrs K.L Malatji and Dr E.J Malatji professional Editors under a registered company RightMove Multimedia, have meticulously edited the manuscript from the University of Limpopo. Title: "FACTORS CONTRIBUTING TO POOR ADHERENCE TO A FIXED DOSE COMBINATION TREATMENT AMONG PATIENTS LIVING WITH HUMAN IMMUNODEFICIENCY VIRUS AT HC BOSHOF COMMUNITY HEALTH CENTRE IN SEKHUKHUNE DISTRICT, LIMPOPO PROVINCE".

Sincerely,

Mrs K. L Malatji





## Appendix J: Turnitin Report



### Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Jane Matlala  
Assignment title: Research Work  
Submission title: Dissertation 2022  
File name: Matlala\_MJ\_RESEARCH\_REPORT\_7\_OCTOBER\_2022.docx  
File size: 2.12M  
Page count: 96  
Word count: 25,267  
Character count: 136,049  
Submission date: 14-Oct-2022 08:29PM (UTC+0200)  
Submission ID: 1925458974



## Dissertation 2022

---

### ORIGINALITY REPORT

---

4%

SIMILARITY INDEX

4%

INTERNET SOURCES

3%

PUBLICATIONS

%

STUDENT PAPERS

---

### PRIMARY SOURCES

---

1	<a href="http://www.ncbi.nlm.nih.gov">www.ncbi.nlm.nih.gov</a> Internet Source	1%
2	<a href="http://bmcpublichealth.biomedcentral.com">bmcpublichealth.biomedcentral.com</a> Internet Source	1%
3	<a href="http://www.aidsmap.com">www.aidsmap.com</a> Internet Source	1%
4	Andrew J. Ross, Myint Aung, Laura Campbell, Gboyega A. Ogunbanjo. "Factors that positively influence adherence to antiretroviral therapy by HIV and/or AIDS patients and their caregivers", African Journal of Primary Health Care & Family Medicine Internet Source	1%
5	<a href="http://pdfs.semanticscholar.org">pdfs.semanticscholar.org</a> Internet Source	1%
6	<a href="http://hdl.handle.net">hdl.handle.net</a> Internet Source	1%

---