LOSS TO FOLLOW-UP ON ANTIRETROVIRAL THERAPY AMONGST HIV PATIENTS ON CCMDD PROGRAM AT MAKHADO MUNICIPALITY, LIMPOPO PROVINCE, SOUTH AFRICA

by

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I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete reference. I further declare that I submitted the dissertation to the originality-checking software and that it meets the accepted requirements for originality. I further declare that I have not previously submitted this work or part of it for examination at UNISA for another qualification or any other higher education institution.

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DEDICATION

I dedicate this dissertation to my supportive partner, Phuti Rangoato, my son, Kgosi, and my daughter, Mulalo, in appreciation of the understanding and support they showed me whilst I was studying over the years. I am grateful to them.

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ABSTRACT

Background: Loss to Follow-Up among HIV patients receiving Antiretroviral Therapy (ART) remains a significant barrier to achieving optimal HIV care outcomes in South Africa. The Central Chronic Medicine Dispensing and Distribution (CCMDD) Programme was introduced to improve access to treatment; however, retention challenges persist.

Purpose: The study aimed to explore factors contributing to high rates of LTFU among HIV patients enrolled in the CCMDD Programme in the Makhado Local Municipality in the Limpopo Province, South Africa.

Study setting: The study was conducted in three purposively selected clinics that implemented the CCMDD Programme in the Makhado Local Municipality, in the Limpopo Province.

Method: An exploratory, descriptive qualitative research design was employed. A purpose sample of 34 HIV positive patients, aged 18 years and older, who had defaulted ART within the past twelve months but subsequently returned to care, participated in semi-structured, in-depth interviews. Data were analyzed using Braun and Clarke's six-step thematic analysis. Trustworthiness was ensured through researcher-led data collection and strategies to enhance credibility and dependability.

Results: Five major themes emerged from the data: (1) positive factors of the CCMDD Programme; (2) individual factors; (3) interpersonal factors; (4) community factors; and (5) health system-related factors. The positive aspects of the CCMDD Programme included improved patient adherence to treatment and reduced facility congestion. Contributing barriers included a shortage of medication, long waiting periods, poor data recording, communication breakdowns,Limited understanding of the Programme, distance and travel time, challenges with script renewal, side effects, stigma, non-disclosure, and a lack of social support.

Conclusion: The findings of the study highlighted that the key drivers contributing to LTFU include stigma, non-disclosure of HIV status, long travel distances to collection points, lack of social support, and limited knowledge of the CCMDD Programme. Strengthening patient education, improving communication systems, and implementing early tracing strategies may enhance retention and adherence among patients enrolled in the CCMDD Programme.

Keywords: Loss to Follow-Up, Antiretroviral Therapy, Patient, Central Chronic Medicine Dispensing and Distribution, HIV

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
CCMDD	Central Chronic Medicine Dispensing and Distribution
HIV	Human Immunodeficiency Virus
HTS	Health System Trust
LTFU	Loss to Follow-Up
NDP	National Department of Health
PEPFAR	President’s Emergency Plan for Aids Relief
UNAIDS	United Nations Programme of HIV/AIDS
UNISA	University of South Africa

CHAPTER 1
ORIENTATION OF THE STUDY

1.1 INTRODUCTION

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) remain significance global public health challenges. In 2019, the joint United Nations Programme on HIV/AIDS (UNAIDS) reported that about 38.4 million people were living with HIV globally (UNAIDS, 2022:1). Since 2019, the global progress against reducing the burden of HIV has slowed, while new infections have risen in certain regions. Data showed that although new HIV infection declined globally in 2021, the decrease was only 3.6% compared to 2020, which was the smallest annual reduction since 2016 (UNAIDS, 2022:2).

As a result, many regions and countries were left to address the rising HIV infections alongside other ongoing health crises. Eastern Europe, central Asia, the Middle East, and North Africa have all experienced an increase in annual HIV infections over the past decade (UNAIDS, 2022:2). In Asia and the Pacific, where HIV infections had been declining since 2010, recent data showed a reversal of that trend. Rising cases of Loss to Follow-Up (LTFU) and poor retention in care have been associated with early mortality (UNAIDS, 2022:2).

To curb the spread of HIV, Antiretroviral Therapy (ART) is widely used. Antiretroviral Therapy (ART) reduces the amount of HIV in the bloodstream, preventing the virus from multiplying and thereby improving patient health. According to the National Department of Health (2018:8), initiation of ART helps people living with HIV stay healthier and significantly reduces their risks of transmitting the virus to others. In South Africa, the Central Chronic Medicine Dispensing and Distribution (CCMDD) Programme was introduced to improve access to chronic medications, including ART, by decongesting public healthcare facilities. The Programme offers an alternative medicine distribution model to stable patients in the public sector, enabling them to collect medications from a convenient pick-up point (Muthelo *et al.,* 2020:2). Muthelo *et al.* (2020:1) stated that the burden of infectious diseases such as tuberculosis and HIV/AIDS was reported to be high in African countries compared to the rest of the world. As a result, the United States Centers for Disease Control and Prevention (CDC) and the United States President’s Emergency Plan for AIDS Relief (PEPFAR) offered a grant for the CCMDD as a sub-project of the Health Systems Trust (HST). The CCMDD Programme was then funded to fight HIV and AIDS, tuberculosis, and other chronic conditions. It also covered the costs of dispensing and distributing patients’ medicines, establishing a pick-up point, and procuring some ARVs used in the CCMDD. According to Muthelo *et al*. (2020:03), the Programme was implemented with the expectation that compliant and stable chronic patients in the public sector would no longer have to travel long distances or wait long hours for medication. It was outlined that patients will be referred to their preferred pick-up points for treatment collection. The process is called decanting. The goal of decanting patients is to retain them in care by providing a more convenient option for collecting repeat medications dispensed and distributed through the CCMDD Programme.

This chapter comprises the introduction, background, problem statement, rationale, purpose, objectives, research questions, significance of the study, definitions of key terms, and a summary.

1.2 BACKGROUND

In Africa Loss to Follow-Up (LTFU) on ART incidences were found to be lower compared with other studies conducted in Kenya, Cameroon, India and Caribbean (Assemie, Muchie & Ayele, 2018:11). Many high risks of LTFU were participants who cannot eat regularly, malnourished, drop out of care because of believing that medication without proper food is ineffective or even harmful (Assemie et al., 2018:11). A study conducted in Southern Ethiopia found that unemployed individuals are at a higher risk of being lost to follow-up (LTFU) on ART because they often lack transport money, while substance users also showed high rates of LTFU, possibly due to negligence associated with substance use (Fox & Rosen, 2019:170). Another study conducted in sub-Saharan Africa by Muhula *et al.* (2022:6), examined interventions to improve early retention in ART. The findings indicate that promoting patient-centered approaches such as fast-tracking ART initiation, differentiated service delivery models, and adequate support from lay counselors, improve early retention of HIV care in sub-Saharan Africa. The conclusion was that adopting policies and programmes such as the CCMDD, which expand ART uptake and reduce HIV transmission at the population level, would be most effective.

According to Assemie *et al.* (2018:123), a study conducted in sub-Saharan Africa in 2010 determined LTFU as the most common cause of attrition from HIV care of 59%, followed by death of 41%. In sub-Saharan Africa, LTFU from HIV care is associated with young age, illiteracy, long travel time to the clinics, and being bedridden. The magnitude of factors contributing to LTFU among patients on ART varies across settings. Patients who had different opportunistic infections were at a high risk of being lost to follow-up. These results align with the studies conducted in Uganda. This was said to be because of the pill burden, adverse drug toxicities, interactions among opportunistic infection treatment and ART, which demands a high commitment to follow all the medications. Patients with a CD4 count or baseline below 200 cells/uL were more likely to be lost to follow-up on ART than those with a CD4 count above 200 cells/uL. The study showed that an increase in CD4 counts improves patients' immunity and overall well-being, helping them stays on treatment (Ministry of Health 2018:18).

According to UNAIDS (2019:2), the life expectancy of South Africans, both male and female, improved between 2009 and 2011 due to ART treatment. South Africa has the most extensive ART treatment programmes, including the CCMDD, with an estimation of 3.4 million people living with HIV initiated on ART. Despite the vastly improved coverage of ART, significant numbers of people drop out of the treatment pathway.As of 2019, the prevalence of HIV/AIDS among adults aged 15–49 years in Limpopo Province, South Africa, was 17.2% (Odama, 2020:3). Limpopo was the sixth of the nine provinces in South Africa in terms of the highest numbers of HIV prevalence.

A study was conducted in South Africa to determine whether the CCMDD Programme affects clinical outcomes, with viral load suppression and retention in care assessed among patients participating in the Programme and those receiving the clinic-based standard of care. Findings show that amongst 390 people living with HIV, 236 were eligible for CCMDD. Of the 236 patients who qualified for CCMDD registration, 116 were enrolled in the CCMDD Programme, and approximately 83 of them were obtaining their ART promptly.

Viral load suppression and retention in care were comparable among CCMDD-eligible patients who participated in the programme and those who did not. It was concluded that people living with HIV participating in the CCMDD Programme maintained a high proportion of viral suppression and retention to care (Fox & Rosen, 2015:54), however, a study conducted in the Vhembe District Limpopo explained that nurses in Vhembe experience challenges with the implementation of the CCMDD Programme, such as the late delivery of medication, a lack of parcel tracking devices, patients receiving collection notification messages late, incorrect medication being issued to the patient, lack of pick up points in rural areas and a lack of patients data availability in the clinic facility (Muthelo *et al.,* 2020:11). All this contributes to some of patients on ART being lost to follow-up.

1.3 RESEARCH PROBLEM

Despite the implementation of the CCMDD Programme in the Limpopo Province to improve alternative access to medication for patients living with chronic disease, including HIV, and to address the demands associated with expanded access to ART, patients being lost to follow-up seemed to remain high among HIV patients on ART and in the CCMDD Programme in facilities in the Makhado local area. The researcher is a professional nurse working in the HIV Programme and has observed that the Makhado Local Municipality in the Limpopo Province, South Africa, faced a pressing public health challenge characterized by a significantly high rate of patients discontinuing and failing to adhere to the ART within the CCMDD Programme. Despite nurses' and community health workers' (CHWs) daily efforts to call and trace patients, some patients still do not collect their medication. This issue jeopardises the effectiveness of HIV treatment in the region and calls for a comprehensive understanding of the contributing factors that drive patient disengagement from the Programme. Identifying and addressing these factors was crucial to ensure the sustained health and well-being of individuals living with HIV in this area and to meet broader 95/95/95 goals. From this perspective, the researcher developed an interest in conducting this study to investigate the factors contributing to the high LTFU rate among patients receiving ART in the CCMD Programme at Makhado Local Municipality, Limpopo Province, South Africa.

1.4 RATIONALE OF THE STUDY

The study’s rationale lies in its potential to make a significant impact on public health, patient well-being, and healthcare delivery in a region with a high incidence of HIV/AIDS. It aimed to identify and address factors contributing to LTFU, ultimately leading to more effective, context-specific strategies to improve ART retention and adherence in the Makhado Municipality, in the Limpopo Province, and similar regions. The researcher is a health care professional working with HIV positive patients, including those on the CCMDD Programme. After suspecting that there is a high rate of loss regarding the follow-up of HIV positive patients on the CCMDD Programme, the researcher chose to research factors contributing to the high rate of loss to follow-up observed among CCMDD patients on ART. The aim was to understand the factors contributing to loss to follow-up and to identify the reasons why ART patients on the CCMDD Programme become lost to follow-up. After analysing these findings, the researcher identified strategies to improve patient retention in care and gained insight into patients' experiences, preferences, and needs to improve their health outcomes.

1.5 SIGNIFICANCE OF THE STUDY

The findings of the study may help HIV patients, especially those who are enrolled in the CCMDD Programme, healthcare workers, policymakers, and the National Department of Health in South Africa. Valuable information was shared that can enhance its adoption, as this study aims to contribute to understanding the specific challenges patients in the Makhado Local Municipality face in adhering to ART. By providing such information, patients enrolled in the CCMDD Programme, health care workers, policymakers, and the Department of Health will gain clarity into the factors that lead to CCMDD patients being LTFU on treatment. This will inform stakeholders to develop methods to prevent patients from becoming lost to follow-up. It may provide insights for local healthcare authorities and policymakers to develop targeted interventions to improve patient retention and adherence. The findings will have broader implications for HIV/AIDS management in other similar settings, offering a model for addressing high LTFU rates in the ART programmes. The findings will be disseminated through workshops, health awareness campaigns, and publications to ensure broader reach and impact.

1.6 AIM/PURPOSE OF THE STUDY

1.6.1 Research aim/purpose

The research purpose is generated from the problem and the research question. It captures the essence of the study in a single sentence, which also outlines the variables, population and research settings of the survey (Brink & Van Rensburg, 2022:60). The purpose of this study was to explore and describe the underlying factors contributing to LTFU rates among patients receiving ART through the CCMDD Programme at the Makhado Local Municipality, in the Limpopo Province, in South Africa

1.6.2 Research objectives

Brink and Van Rensburg (2022:83) stated that research objectives are defined as clear, concise declarative statements articulated in the present tense. The objectives of the study were:

- To describe the factors contributing to the loss of follow-up among patients receiving ART through the CCMDD Programme in the Makhado Local Municipality.
- To explore the challenges faced by patients receiving ART on the CCMDD Programme, which contributes to LTFU in the Makhado Local Municipality?
- To describe the impact of LTFU among patients receiving ART on the CCMDD Programme in the Makhado Local Municipality
- To provide actionable recommendations and insight for healthcare authorities, policymakers, and programme managers to enhance patients' retention and adherence within the CCMDD Programme in the Makhado Local Municipality

1.6.3 Research questions

The research question narrows a broad topic to a focused area for study. When formulating research questions, the researcher needs to distinguish between questions that can be answered through research and those in which research will not elicit answers (Brink & Van Rensburg, 2022:83). The research question that guided the researcher throughout the study was:

- Which factors contribute to LTFU among patients receiving ART through the CCMDD Programme in the Makhado Local Municipality?
- What are the challenges experienced by patients receiving ART on the CCMDD Programme that contribute to LTFU?
- What is the impact of loss to follow-up among ART patients enrolled in the CCMDD Programme in the Makhado Local Municipality?

- Which recommendations and insights can be offered to healthcare authorities, policymakers, and programme managers to enhance patients' retention and adherence within the CCMDD Programme in the Makhado Local Municipality?

1.7 DEFINITION OF KEY CONCEPTS

The key concepts in this study are: Loss to Follow-Up, Antiretroviral Therapy, Patient, and Central Chronic Medicine Dispensing and Distribution.

1.7.1 Conceptual definition

A conceptual definition refers to the abstract or theoretical understanding of a concept that is of interest (Polit & Beck, 2019:780). It captures the essence and meaning of the concept in a broader, non-specific manner.

1.7.1.1 Loss to Follow-Up

Loss to Follow-Up refers to instances in which patients discontinue their treatment or fail to attend scheduled clinical visits, significantly increasing the risk of drug resistance, morbidity, and mortality (Keane *et al.,* 2017:21).

1.7.1.2 Antiretroviral Therapy

Treatment drugs that inhibit the ability of HIV or other types of retroviruses to multiply in the body (National Institute of Health, 2021:1).

1.7.1.3 Patient

A person receiving treatment from a doctor or dentist (Oxford School Dictionary 2018:425).

1.7.1.4 Central Chronic Medicine Dispensing and Distribution Programme

It is a Programme initiated by the Department of Health in South Africa to provide an alternative to chronic medicine access for public-sector patients (NDoH, 2021:12).

1.7.2 Operational definition

An operational definition is defined as an exceptionally dependable definition that clearly outlines the steps or methods to be employed in recognising or acquiring the subject being defined (Charuplakkal & Kumaramkandath, 2021:33).

1.7.2.1 Loss to Follow-Up

For this study, LTFU refers to a person who has not returned to their chosen pick-up point for ART collection for the past three consecutive months.

1.7.2.2 Antiretroviral Therapy

In this study, Antiretroviral Therapy is a treatment for people infected with human immunodeficiency syndrome, which works in their bodies by suppressing the virus and stopping the progression of HIV disease.

1.7.2.3 Patient

For this study, a patient is a person who is diagnosed with HIV and is receiving treatment or is registered with the CCMDD Programme to receive medical treatment.

1.7.1.4 Central Chronic Medicine Dispensing and Distribution Programme

In this study, the CCMDD is a Programme that provides an alternative mechanism to facilitate access to medicine for all stable patients who are diagnosed with HIV. These stable patients have a viral load of less than 50 copies and are registered by an authorised prescriber to collect treatment at their preferred pick-up points.

1.8 THEORETICAL FOUNDATION OF THE STUDY

This section outlines how the study will be conducted. The section describes the theoretical framework guiding the study, the research paradigm, the research approach, and the design.

1.8.1 Research paradigms

A paradigm is an accepted set of beliefs and values that guides research. A paradigm is a fundamental image of the subject matter within science. It defines what should be studied. It determines which questions should be asked, how they should be asked and which rule should be followed to interpret the answer obtained (Botma, Greeff, Mulaudzi, and Makhado, 2022:340). In the context of a study on LTFU of ART amongst patients on the CCMDD Programme in the Makhado Local Municipality, in the Limpopo Province, South Africa," the research paradigm refers to the overarching philosophical and methodological framework that guides the study. Common research paradigms include positivism, interpretivism, and critical theory. The choice of paradigm influences how the research is conducted and how the findings are interpreted. The study employed the interpretive paradigm, as it is well-suited to qualitative research. By adopting an interpretative paradigm, a deeper understanding of the complexity of human experience, such as social, cultural, and personal experience, and how they influenced medication adherence was highlighted. A contextual understanding of health-related factors was also provided, including factors that influence treatment adherence. Further details on the research paradigm will be given in Chapter 3 of this study.

1.8.2 Theoretical framework

The theoretical framework of the study is the structure that supports the research theory, introducing and describing the theory that explains why the research problem under study exists (Botma *et al.,* 2022:32). This study was guided by the Socio-Ecological Model (SEM). The SEM is particularly suited to this study, as it emphasises the interplay among individual, interpersonal, community, organisational, and policy-level factors that shape health behaviours and outcomes. The purpose of integrating a theoretical framework into this study is to provide a structured approach to understanding the complex, interrelated factors that contribute to LTFU in HIV care.

This framework recognises that individual behaviour is influenced not only by personal beliefs and knowledge but also by broader societal and structural contexts. By applying the SEM, this study can identify targeted interventions at various levels to address barriers to HIV care retention and improve long-term outcomes for individuals living with HIV. The SEM provides a comprehensive framework for understanding the multi-level factors contributing to LTFU in HIV care.

1.9 OVERVIEW OF RESEARCH METHODOLOGY AND RESEARCH DESIGN

A research methodology informs readers about how the investigation was conducted and how the researcher addressed the research problem or answered the research questions (Brink *et al.,* 2018:187). A qualitative approach was used in this study as the researcher selected HIV patients enrolled in the CCMDD Programme and had a history of LTFU in the past twelve months to describe factors that contributed to their LTFU on ART. A qualitative research method was used because the researcher sought to explore and describe factors contributing to LTFU of HIV patients on ART to CCMDD patients in the Makhado Municipality, in the Limpopo Province. A research design outlines how the researcher will engage with participants to achieve the outcomes necessary to address the study's purpose and objectives (Gray, Grove & Sutherland, 2017:192). During data collection through semi-structured interviews, the researcher adopted a descriptive and exploratory phenomenological approach, which entails identifying the researcher's problem and opinion regarding the phenomena under investigation, given that the researcher is also a nurse working with CCMDD patients on ART. The fully detailed methodology is provided in Chapter 3.

1.10 SCOPE OF THE STUDY

The study explored and described the underlying factors contributing to LTFU among patients receiving ART on the CCMDD Programme. The study focused on HIV patients who had a history of loss to follow-up within the past twelve months and who had subsequently been re-enrolled into care through the CCMDD Programme. In this regard, the researcher focused on three clinics in the Makhado Municipality.

1.11 STRUCTURE OF THE DISSERTATION

Chapter 1: This chapter presents an overview of the study and elaborates on the problem background, problem statement, purpose of the study, objectives, research question, theoretical framework, significance of the study, and scope of the study. Definitions of key terms are described in detail, and a summary of the chapter is provided.

Chapter 2: This chapter is about understanding the perceptions of LTFU with HIV patients enrolled in the CCMDD Programme. Various sources and information were used to conduct a literature review. The literature reviewed focuses on LTFU among patients on ART, factors contributing to it, and general knowledge of the CCMDD Programme.

Chapter 3: This chapter outlines the research design and methodology employed in the data collection processes that informed the study's findings. It also provides a detailed explanation of ethical considerations, the measures of trustworthiness used, the study's population and sampling, and the study's settings.

Chapter 4: This chapter outlines the study's findings from the thematic analysis of data collected through semi-structured interviews. The key themes and sub-themes that emerged are outlined and described in detail. The discussion integrates these findings with the existing literature to highlight areas of convergence and divergence, thereby situating the study results within the broader body of knowledge on LTFU among patients enrolled in the CCMDD Programme.

Chapter 5: This chapter provides a summary and interpretation of the key findings in relation to the study objectives and existing literature. It further outlines the implications of the findings for practice and policy and offers recommendations for future research in areas requiring further exploration. This chapter also presents the study's limitations, which should be considered when interpreting the results.

1.12 SUMMARY

This chapter outlined the introduction to LTFU of HIV patients on ART in the Makhado Municipality. The chapter further discusses the research problem, the significance of the study, the theoretical foundations, the research methodology, the research design, and the scope of the study. The next chapter is the literature review.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter introduced the study and provided the background and a broad overview of its scope. It offered a comprehensive introduction to the research topic. This chapter provides an introduction and establishes the foundation for the study, outlining the scope and significance of the research. It presents a detailed overview of the research problem and its context, focusing on the issue of LTFU among HIV patients on ART in the Makhado Municipality, in the Limpopo Province, South Africa.

This chapter reviews the existing literature on LTFU in HIV care, focusing on the individual, interpersonal, community, organisational, and systemic factors contributing to this issue. A literature review is a critical component of academic research, as it provides a conceptual foundation for the study and situates the research within the current body of knowledge (Grant & Booth, 2009:8). A review of previous studies helped the researcher identify gaps and establish the study’s relevance.

Conducting this literature review involved an extensive search of academic sources, including peer-reviewed journals, government reports, scholarly books, and electronic databases such as PubMed and Science Direct. Key search terms included “Loss to Follow-Up," "HIV patients," and “Antiretroviral Therapy.” Only sources published between 2015 and 2025 were considered to ensure the inclusion of the most recent and relevant evidence. This process enabled the researcher to explore global and local trends, challenges, and interventions related to LTFU among HIV patients on ART.

The review also highlighted critical gaps in understanding how socio-economic, behavioural, and systemic factors intersect to influence retention in HIV care. These insights are essential for developing targeted interventions to address LTFU and improve the health outcomes for HIV patients.

2.1.1 Global and regional statistics on LTFU among HIV patients

The LTFU among HIV patients on ART presents a critical challenge to the success of global HIV treatment programmes. Loss to Follow-Up (LTFU) refers to instances where patients discontinue their treatment or fail to attend scheduled clinical visits, significantly increasing the risk of drug resistance, morbidity, and mortality (Tefera,2022:12).Globally, LTFU rates among HIV patients range widely depending on the population and setting. In resource-limited settings, studies have reported LTFU rates as high as 22% within two years of ART initiation (Iyun,2022:11). While it was noticed that a significant proportion of LTFU occurs within the first six months of treatment, this emphasises the critical need for strong early intervention strategies (Shargie, 2017:34).

Sub-Saharan Africa, which carries the most significant global HIV burden, has reported varying LTFU rates across different countries. For example, a meta-analysis of ART programmes in the region found that approximately 21% of patients were lost to follow-up after one year of treatment (Samji, 2016:34). Globally, loss to follow-up (LTFU) remains a major challenge in antiretroviral therapy (ART) programmes, although rates vary across regions. In Asia, comparatively lower LTFU rates have been reported; for example, a study in Vietnam found an LTFU rate of 9% over three years, which was attributed to improved healthcare systems and patient support programmes (Dat et al., 2021:487). In the African context, higher rates have been observed. In Ethiopia, the incidence of LTFU was estimated at 18.3 per 1,000 person-months, with early treatment dropouts remaining a persistent concern (Mekonnen et al., 2019:7). In South Africa, as of 2019, the prevalence of HIV/AIDS among adults aged 15–49 years in Limpopo Province was 17.2% (Odama, 2020:3). In these regions, LTFU rates are difficult to ascertain due to limited data, but challenges such as stigma and poor healthcare infrastructure contribute to significant retention gaps (Dat, Lyss, Dung, Pals Van Anh, Van Kinh & Bateganya, 2021:487).

2.2 Factors contributing to LTFU from HIV care

2.2.1 Individual factors

Globally, several individual-level factors have been consistently identified as contributing to LTFU in HIV care, including limited knowledge of HIV management, perceived good health, HIV-related stigma, medication side effects, sharing of ART medication, spiritual beliefs in faith healing, and non-disclosure to partners and family members. Similar patterns have also been reported in studies conducted in resource-limited settings, particularly across sub-Saharan Africa, where contextual and socio-economic challenges further reinforce these individual barriers. At a local level, these factors remain relevant in explaining LTFU within the study setting, indicating that patient-related beliefs and behaviours continue to influence retention in HIV care. These findings align with other studies conducted in resource-limited settings globally (Opio *et al.,* 2019:28; Mukumbang *et al*., 2017:17).

Poor knowledge of HIV care is a significant barrier, as some individuals mistakenly believe that ART is only needed for a limited time and that improved health signifies a complete cure. This misconception may result from inadequate counselling during clinic visits, with limited time allocated to patient education. Additionally, severe ART side effects such as gynecomastia, fear of weight-related changes, and metabolic complications like diabetes discourage adherence. Sariah *et al.* (2019:145) highlighted similar findings in their study on women in HIV care. The sharing of ART medications further exacerbates treatment challenges, as some individuals share their prescriptions with intimate partners. This practice disrupts treatment regimens and jeopardises the health of both parties, echoing the findings by Iyun,2022:11 in Tanzania. Furthermore, fear of HIV-related stigma and distrust in relationships often hinder disclosure of their HIV status, thereby limiting access to positive social support. Studies in East Africa have shown that fear of relationship breakdown and social isolation are common among people living with HIV (Kisigo *et al*., 2020:123; Yakob & Ncama, 2016:11). Social constructs, particularly masculinity norms, often pressure individuals to conceal their status to avoid appearing vulnerable (Nyamhanga *et al.,* 2017:23).

Geographic factors also play a role. Many individuals prefer clinics far from their residences to maintain anonymity, despite the increased financial burden and travel time. This trend contrasts with findings from studies that report long distances to clinics as a barrier to care, particularly for women who rely on financial support from partners (Mukumbang *et al.,* 2017:17).

2.2.2 Socio-economic factors

Globally, socio-economic barriers such as financial hardship, demanding employment, mobility-related work, spiritual beliefs, and social pressures have been widely recognised as key contributors to loss to follow-up (LTFU) in HIV care. Financial constraints, including the inability to afford transportation or meet family needs, often force individuals to prioritise income-generating activities over clinic visits, with similar findings reported in studies highlighting the impact of poverty on adherence (Mukumbang et al., 2017). Within sub-Saharan Africa, comparable challenges have been documented, where work-related travel and occupational mobility disrupt continuity of care. For example, in Zambia, truck drivers were found to experience difficulties in maintaining regular clinic attendance due to extended periods away from home (Mukumbang et al., 2017).

Spiritual beliefs, particularly those emphasising faith healing, have also been shown to influence ART discontinuation, although some studies acknowledge the role of religious teachings in promoting adherence (Sariah et al., 2019), while others highlight the conflicting influence of faith healing on retention. Social dynamics further contribute to LTFU, as the need for social acceptance may lead individuals to discontinue medication to appear healthy, although this contrasts with findings that emphasise the importance of social support in improving adherence, particularly among women (Ramoshaba,2022:46). At the local level, these socio-economic and social factors remain relevant, as financial hardship, transport costs, work demands, and social influences continue to affect retention in HIV care.

2.2.3 Organisational and health system factors

Globally, health system-related factors such as poor quality of care, negative attitude of healthcare workers , administrative inefficiencies, and policy-related barriers have been identified as significant contributors to LTFU of patients on ART. Many limited health systems challenges affect patient trust and reduce retention in care. Within sub-Saharan Africa, similar patterns have been observed, where strained health systems, staff shortages, and poor patient–provider interactions continue to undermine continuity of care. At a local level, health system challenges such as unprofessional conduct by healthcare workers, loss of clinic cards, and perceived barriers to accessing ART services further contribute to LTFU. Negative attitudes and unprofessional behaviour discourage patients from returning to care, particularly after missed appointments, while respectful and supportive interactions have been shown to improve retention (Hughes, 2026:12). In addition, the loss of clinic cards remains a significant barrier, as many patients believe ART services cannot be accessed without them, leading to treatment discontinuation (Kisigo et al., 2019:626).

2.3 The LTFU of patients on ART: Overview of South Africa's HIV epidemic and the CCMDD Programme

South Africa is home to one of the largest populations of people living with HIV globally, with an estimated 7.6 million individuals affected as of 2022. This translates into an adult prevalence rate of 17.8%, highlighting the scale of the epidemic in the country (UNAIDS, 2022:4). Chauke (2024:7) states that, in response, the government has established an extensive ART programme that now provides treatment to approximately 5.7 million people. This programme has led to significant reductions in AIDS-related mortality and new infections, demonstrating the impact of ART accessibility at a population level (UNAIDS, 2022:6). However, the sustainability of these achievements is affected by the ongoing challenge of LTFU.

2.4 Challenges specific to rural areas like Makhado Municipality

Despite the successes of South Africa's ART programme at the national level, rural areas such as the Makhado Municipality in the Limpopo Province face unique challenges in retaining patients in HIV care programmes. LTFU remains a persistent barrier in these settings, where a range of socio-economic and structural factors exacerbate it.

High levels of population mobility and limited healthcare infrastructure are particularly problematic in rural areas. Kim, Musuka, and Mukandavire (2021:13) report that many patients must travel long distances to reach treatment facilities, often facing additional challenges, including unreliable public transportation and inadequate healthcare infrastructure. These structural barriers disrupt continuity of care and contribute significantly to LTFU. A study in rural South Africa emphasised that these logistical difficulties are among the primary reasons for early treatment discontinuation, particularly during the critical first six months after ART initiation (Mulissa *et al.,* 2010:140). Many individuals in rural communities face significant economic hardships that hinder consistent access to healthcare services. The cost of transportation to healthcare facilities, as well as indirect costs such as lost income from time spent attending appointments, can discourage patients from continuing treatment.

In addition to structural and financial challenges, limited awareness of the importance of ART adherence and follow-up care contributes to treatment discontinuation. According to Nice (2023:64), the stigma associated with HIV/AIDS remains pervasive in rural communities and discourages many individuals from accessing and adhering to treatment. Cultural and social dynamics in these settings can amplify stigma, making it difficult for patients to disclose their status or seek care. To address this issue, integrating traditional healers into HIV care programmes has been proposed as a culturally sensitive approach to reducing stigma and improving ART adherence. Evidence suggests that such integration can foster greater community acceptance and support for HIV treatment efforts and improve adherence (Masilo, 2024:55).

Addressing LTFU in rural areas, such as the Makhado Municipality, requires a comprehensive approach that addresses the unique challenges these communities face. Nkosi (2025:3) notes that interventions should focus on decentralising ART services to enhance accessibility, providing financial support to mitigate economic barriers, conducting community-based education campaigns to improve awareness, and engaging culturally relevant resources, such as traditional healers. By addressing these factors, healthcare systems can improve retention rates and optimise the effectiveness of HIV care programmes in rural South Africa.

2.5 Central Chronic Medicine Dispensing and Distribution (CCMDD) Programme

Around the world, health systems have increasingly adopted differentiated service delivery (DSD) models to respond to the growing burden of chronic diseases and the need to improve long-term access to treatment (Chetty & Ross 2024:4). These models aim to decongest health facilities, reduce waiting times, and improve patient-centred care by decentralising the dispensing of chronic medication to community-based and external collection points (Sekopa & Netangaheni, 2024:177). This global shift is particularly evident in the management of long-term conditions such as HIV, diabetes mellitus, and hypertension, where sustained adherence to treatment is required over a lifetime.

Within the sub-Saharan African region, similar approaches have been adopted in response to overburdened public health systems, staff shortages, and increasing numbers of patients requiring chronic care (Ndoro et al., 2021:9) . Countries in the region have introduced community-based distribution systems, pharmacy pick-up points, and alternative medication collection models to improve continuity of care and reduce pressure on clinics. These regional developments demonstrate a shared effort to strengthen health system efficiency and improve retention in care among patients on long-term treatment.

In South Africa, this approach is implemented through the CCMDD Programme. Over the past decade, South Africa has seen a marked increase in the number of patients requiring long-term therapies or chronic treatment. This has strained available resources (National Department of Health, 2024:1) until the initiation of the CCMDD Programme. The national health insurance programme launched the CCMDD Programme to reduce the strain on public health facilities. Patients with chronic conditions such as HIV, diabetes mellitus, hypertension, and many more are assessed for eligibility. Those who are in a stable condition are registered for the CCMDD and are then given the opportunity to choose the facility where it is most convenient for them to collect their chronic medication, rather than waiting monthly at the clinic. This process is referred to as Dablapmeds or Dablap in short.

The locations include various surgeries registered with the NHI, Spar Pharmacy, Dis-Chem, Clicks, and various supermarkets in villages. The HIV patients registered with the CCMDD receive a repeat prescription for six months. This means that patients can attend the clinic only twice a year for repeat prescriptions and blood tests. Blood tests are collected annually for all patients enrolled in the CCMDD Programme for ART. A study by Ndoro et al. (2021:9) found that collecting ART outside traditional clinics improves compliance and adherence among HIV-positive patients.

One of the main challenges facing the CCMDD Programme is that many patients do not fully understand how it works (Chetty & Ross 2024:4). Some are unclear about the purpose of the programme, the benefits it offers, or the procedures for collecting medication, which can cause confusion and make it harder to stay on treatment. In some cases, this lack of understanding leads patients to miss medication collections or switch to other facilities without following proper steps (Sekopa & Netangaheni, 2024:177). These challenges illustrate the importance of providing clear information and ongoing support so that patients can engage fully with the programme and maintain consistent adherence. Moreover, this poor understanding of this programme often leads to a misunderstanding of script renewals, and patients end up defaulting on their treatment. This often leads to poor adherence and LTFU among patients (Mashilo, 2022:31).

2.6 Challenges faced by patients receiving ART on the CCMDD Programme

Healthcare facilities in South Africa often face staff shortages, resulting in overburdened staff and compromised patient care. The absence of dedicated CCMDD staff exacerbates this issue, as existing employees must juggle multiple responsibilities without adequate training. This scenario increases errors, patient dissatisfaction, and LTFU (Wonci, 2022:68). Effective communication is vital to the

CCMDD Programme’s success. Challenges such as delayed or incorrect medication deliveries, inconsistent SMS notifications, and poor coordination between clinics and pick-up points contribute to patient confusion and missed appointments. This leads to higher rates of disengagement (Masilo, 2024:14).

Ineffective communication within the healthcare system greatly affect adherence to ART among patients on the CCMDD Programme, leading to serious health risks (Wonci, 2022:69). When clinics, pharmacies, and patients fail to exchange clear and timely information about medication schedules, collection points, or prescription updates, patients may miss doses or skip collections altogether (Pillay, 2022:27). These disruptions can cause an increase in the viral load, the development of drug resistance and a weakened immune system, increasing patients' risk of opportunistic infections and disease progression (Mashilo, 2022:29). Additionally, confusion or uncertainty about how to navigate the programme can damage trust in the healthcare system, making patients less likely to stay engaged with treatment (Wicks,2023:43).

Some patients enrolled in the CCMDD Programme fail to collect their medications on time or at all, resulting in unclaimed medication stockpiles at facilities. This non-adherence jeopardises patient health and complicates resource management (Correia, 2024:33). Primary healthcare facilities in rural areas often lack the infrastructure to support the CCMDD Programme effectively. Limited storage space for medications, lack of accessible pick-up points, and inadequate technological resources hinder programme implementation and patient participation (Nelson,2025:45). While the CCMDD Programme aims to improve patient convenience, it sometimes leads patients to delay medical consultations when unwell and rely solely on medication pick-ups. This behaviour can lead to worsening health conditions and increased mortality among chronic patients (Correia, 2024:33).

Challenges with script renewals within the CCMDD Programme pose significant risks to HIV patients, potentially leading to treatment default and subsequent increases in viral load (Mashilo, 2022:58). Factors such as inadequate patient education, rigid medication collection schedules, and poor communication between clinics and pick-up points contribute to missed appointments and uncollected prescriptions. These lapses can result in treatment interruptions, which may compromise viral suppression and elevate the risk of drug resistance (Molete, 2023:9).

2.7 Healthcare infrastructure, access, and availability of ART services in the Limpopo Province

Many public clinics and healthcare facilities have been established to provide ART to people living with HIV. For example, the Capricorn District has been recognised for its provision of HIV testing, counselling, and treatment services through public health facilities that cater to both formal and informal settlements (Hughes,2026:9).

Despite these advancements, several challenges persist in ensuring equitable access to ART services across the province. Rural areas face pronounced infrastructural deficits, including poorly equipped healthcare facilities and inconsistent staffing. These challenges are compounded by bureaucratic hurdles, which can delay the delivery of medications and other critical supplies. Such barriers contribute to unequal access to services, with rural areas often underserved compared to urban centres (Nkuna *et al.,* 2021: 134).

Adherence to ART among patients in the Limpopo Province also presents a mixed picture. A study in the province reported an adherence rate of 87% among young adults. However, this figure was derived from self-reported questionnaires. It excluded patients who had discontinued treatment or were lost to follow-up, potentially painting an overly optimistic view of adherence levels (Tshitangano & Olaniyi, 2020:71). This highlights the need for more data collection methods and targeted interventions to address non-adherence and LTFU. Vita (2021:5) stated that adherence is a key factor associated with pharmacological therapies, particularly critical for medications prescribed for chronic conditions, and further elaborated on the outcomes of poor adherence, which can also result in mortality.

2.8 Policies and frameworks addressing LTFU in South Africa

South Africa has implemented several comprehensive policies and frameworks to address the HIV/AIDS epidemic, focusing on improving access to care, retention in treatment, and reducing LTFU. The National Strategic Plan for HIV, TB, and STIs

(NSP) 2017–2022 is a major policy that outlines key strategies to enhance treatment adherence and retention. The plan emphasises the importance of community-based interventions, integration of HIV services with other healthcare programmes, and decentralisation of ART services to increase accessibility, particularly in underserved areas (SANAC, 2017:45). The NSP sets clear targets for reducing LTFU, aiming for 95% of people on ART to be retained in care annually (SANAC, 2017:48).

At the provincial level, strategies are tailored to address specific challenges in regions such as Limpopo. For example, Limpopo's Provincial Implementation Plan aligns with the NSP but places greater emphasis on rural healthcare delivery. This includes expanding ART clinics in hard-to-reach areas and deploying mobile health units to bridge geographical barriers (Limpopo Department of Health, 2020: 12).

2.9 Assessment of policy implementation in addressing LTFU challenges

While these policies are firm on paper, their implementation has faced significant challenges. One of the key issues is the gap between policy design and practical execution, particularly in rural and underserved communities. Studies have shown that despite the emphasis on decentralisation, many rural areas still lack sufficient ART facilities, trained healthcare personnel, and reliable medication supply chains (Fox & Rosen, 2017:14). These deficiencies contribute to high LTFU rates, as patients face logistical and structural barriers to accessing care. Furthermore, the integration of CHWs into HIV care, as outlined in the NSP, has been unevenly implemented. In some districts, CHWs play a critical role in patient tracking and adherence support, thereby significantly reducing LTFU rates. However, in other areas, insufficient training and lack of resources have limited their effectiveness (Nyaga *et al.,* 2021:28).

Monitoring and evaluation mechanisms are another area of concern. Although policies mandate regular reporting and evaluation of retention rates, inconsistencies in data collection and reporting have hindered accurate tracking of progress. For example, a study in the Limpopo Province found discrepancies in reported LTFU rates due to poor record-keeping and limited use of electronic health systems (Molefe et al., 2019: 76). These challenges highlight the need for stronger systems to monitor policy implementation and outcomes.

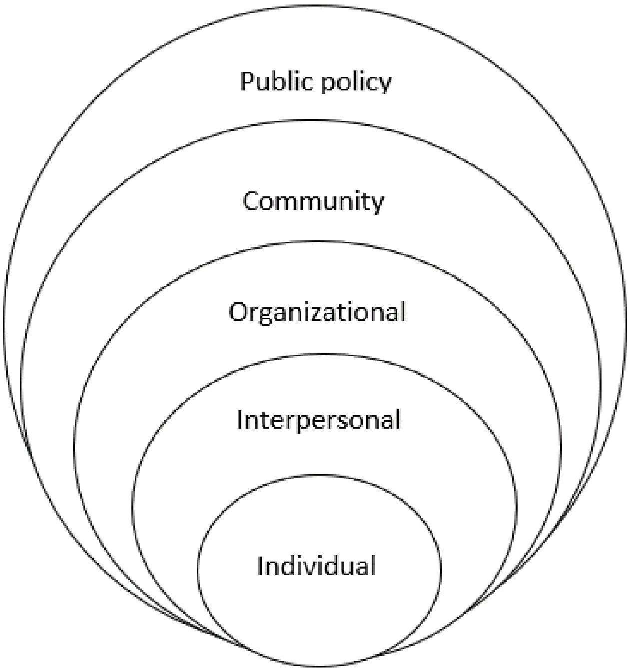
In addition, stigma and discrimination remain pervasive barriers that policy frameworks have struggled to address effectively. Despite advocacy and public awareness campaigns, many patients in rural areas report fear of being stigmatised as a reason for discontinuing treatment (Fox & Rosen, 2015:92). This highlights the importance of integrating stigma-reduction strategies into policy implementation to enhance retention in care. Overall, while South Africa's policies and frameworks provide a solid foundation for addressing LTFU, their success depends on practical implementation, adequate resource allocation, and ongoing evaluation to adapt to emerging challenges.

2.10 Theoretical framework

Silvia (2021:14) states that the Social Ecological Model, initially conceptualised by Urie Bronfenbrenner in the 1970s, proposes that human behaviour is shaped by a series of interrelated layers, ranging from individual characteristics to broader societal and policy contexts. It emphasises that actions and outcomes cannot be fully understood in isolation, as they are continuously influenced by interactions across personal, relational, institutional, and community levels (Dangerfield, 2025:146).

This study was guided by the SEM model. The SEM is particularly suited for this study as it emphasises the interplay between individual, interpersonal, community, organisational, and policy-level factors that shape health behaviours and outcomes (Manyaka, 2022:45). The purpose of integrating a theoretical framework in this study is to provide a structured approach to understanding the complex and interrelated factors contributing to LTFU from HIV care.

This framework recognises that individual behaviour is influenced not only by personal beliefs and knowledge but also by broader societal and structural contexts. By applying the SEM, this study can identify targeted interventions at various levels to address barriers to HIV care retention and improve long-term outcomes for individuals living with HIV. The SEM provides a comprehensive framework for understanding the multi-level factors contributing to LTFU in HIV care. Below is a detailed explanation of the five layers, integrating relevant references to contextualise the factors at each level:



Source: Mukumbang, Mwale and Van Wyk (2017:2)

Figure 1.1: The Socio-Ecological Model

The SEM guided this study, with a focus on five interconnected levels:

2.10.1 Individual level

At the individual level, personal factors such as knowledge, attitudes, skills, and personal history play a significant role in influencing health behaviours, for instance, limited knowledge about HIV management often leads to misconceptions, such as the belief that ART is a temporary treatment (Opio *et al.,* 2019:45). Fear of side effects, including metabolic changes and gynecomastia, discourages adherence to treatment regimens (Sariah *et al*., 2019:23). Additionally, deeply held personal beliefs in faith healing can prompt individuals to discontinue ART, undermining long-term health outcomes (Nyamhanga *et al.,* 2017:18).

2.10.2 The interpersonal level

The interpersonal level examines the influence of social relationships and support systems, including those provided by family, friends, and intimate partners. A significant barrier at this level is the stigma associated with HIV, which often prevents individuals from disclosing their status to intimate partners, thereby missing opportunities for emotional and practical support (Kisigo et al., 2020:34). In some cases, individuals may share ART medications with their partners, compromising the effectiveness of treatment regimens (Nyamhanga *et al.,* 2017:20). Furthermore, distrust in relationships and fear of social isolation exacerbates challenges to adherence and engagement with care.

2.10.3 Community level

At the community level, the focus shifts to larger social networks such as neighbourhoods, workplaces, and social groups. Within these networks, societal pressures and norms that stigmatise HIV contribute to concealment of status and avoidance of treatment (Nyamhanga *et al.*, 2017:22). Many individuals also avoid community-based clinics to maintain anonymity, preferring to visit distant facilities even if this entails higher financial and logistical costs (Mukumbang *et al*., 2017:58).

2.10.4 Organisational level

The organisational level considers the impact of institutions, such as healthcare facilities, on individual behaviours. Negative attitudes or unprofessional conduct by healthcare workers often discourage patients from attending clinics (Hughes*,* 2026:12). Issues such as the mismanagement of clinic cards and unclear policies regarding replacements can further hinder access to ART services (Kisigo *et al.,* 2019:31). Additionally, long waiting times and a lack of privacy at healthcare facilities exacerbate feelings of stigma and discomfort, deterring individuals from seeking regular care (Mukumbang *et al.,* 2017:60).

2.10.5 Policy level

Finally, the policy level addresses broader structural influences, including laws, regulations, and policies that shape the healthcare environment. National HIV policies that fail to address stigma reduction adequately or do not provide comprehensive counselling services may contribute to LTFU in HIV care (Opio *et al.,* 2019:49). Limited financial support for transportation and poverty alleviation programmes further affects access to clinics for marginalised populations

(Mukumbang *et al.*, 2017:62). Weak policy enforcement regarding community health outreach efforts also diminishes the retention of individuals in care (Yakob & Ncama, 2016:79).

2.11 SUMMARY

This chapter explored the critical issue of LTFU among HIV patients on ART globally and in South Africa, with a specific focus on the challenges in rural settings like the Makhado Municipality in the Limpopo Province. It considered LTFU within the broader landscape of South Africa’s HIV epidemic, assessed healthcare infrastructure, and reviewed policy frameworks to address retention challenges.

The review began with a global and regional overview of LTFU, highlighting its prevalence and impact on ART programmes. South Africa, despite having the world’s most extensive ART programme, continues to wrestle with high LTFU rates due to structural, economic, and social challenges. In the context of the CCMDD Programme implementation in the Limpopo Province, the literature indicates that healthcare infrastructure significantly influences LTFU rates. The review also examined national and provincial policies addressing LTFU, including South Africa’s National Strategic Plan for HIV, TB, and STIs. While these policies emphasise decentralisation, community-based interventions, and the integration of HIV services, implementation gaps persist.

CHAPTER 3
RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

The previous chapter (Chapter 2) outlined the literature review of the study. Chapter 3 will present the study's methodology. According to Botma *et al*. (2022: 124), research methodology refers to the plan or process for conducting specific research steps in the study. The purpose of this study was to identify factors contributing to high LTFU among patients receiving ART on the CCMDD Programme in the Makhado Municipality, Limpopo Province, South Africa. The study's methodology aimed to describe the methods used to execute each phase, covering the research approach and design, population and sampling procedures, data collection, ethical considerations, data analysis, and trustworthiness. The following discusses the qualitative approach of this study.

3.2 RESEARCH DESIGN

A research design outlines how the researcher will engage with participants to achieve the outcomes necessary to address the study's aim and objectives (Botma *et al.,* 2022:125). According to Brink, Van der Walt, and Van Rensburg (2018:201), a research design refers to the measures a researcher takes to address the research question. The study employed an exploratory, descriptive, qualitative research design, which enabled the researcher to describe and explore patients' experiences of factors contributing to LTFU in the CCMDD Programme.

3.2.1 Explorative design

An exploratory design begins with a phenomenon of interest, rather than simply observing and describing it to gain new insight. Exploratory studies investigate the nature of the phenomenon and its manifestations, along with the related factors (Beck & Polit, 2019:74). The exploratory design in this research helped the researcher obtain new information from patients who had defaulted from ART in the past twelve months, had returned to care, were adhering to their treatment, and were registered on the CCMDD Programme.

3.2.2 Descriptive phenomenology design

According to Burns, Gray, and Grove (2020:188), descriptive design is used to identify problems with current practice, justify current practice, make judgments, or determine what other professionals in similar situations are doing. The participants were allowed to describe their experiences with LTFU of ART among patients in the CCMDD Programme. A descriptive design enabled the researcher to collect more factual data from participants and to provide descriptions of the phenomena.

3.3 RESEARCH METHODOLOGY

The research methodology refers to the research map for developing or refining the process of obtaining, organising, or analysing data (Polit & Beck, 2018:49). A qualitative method was adopted in this study. Qualitative research emphasises studying human action in its natural setting and through the eyes of the actors themselves, with an emphasis on detailed descriptions and understanding of the phenomena (Neuman, 2021:109). In this study, the researcher conducted interviews with HIV patients on ART at selected clinics: Madombidzha Clinic (Clinic A), Kutama Clinic (Clinic B), and Mpheni Clinic (Clinic C). These are some of the facilities in the Vhembe District, within the Makhado Local Municipality, where the CCMDD Programme is implemented. The qualitative research approach was best suited to this study, as it aligned with its goal of understanding the complexity of high LTFU in the specific context of the ART programme in the Makhado Local Municipality. Qualitative methods provide the depth and richness needed to explore and make sense of the multifaceted nature of the research problem.

3.4 RESEARCH PARADIGMS

A paradigm is an accepted set of beliefs and values that guides research and constitutes a fundamental image of the subject matter within science. It serves to define what should be studied. It determines which questions should be asked, how they should be asked and what rule should be followed to interpret the answers obtained (Botma *et al*., 2022:40). In the context of a study on LTFU of ART amongst patients on the CCMDD Programme at the Makhado Local Municipality, Limpopo Province, South Africa," the research paradigm refers to the overarching philosophical and methodological framework that guides the study. Common research paradigms include positivism, interpretivism, and critical theory. The choice of paradigm influences how the research is conducted and how findings are interpreted. The study employed the interpretive paradigm. An interpretive paradigm is a research approach that focuses on understanding the meaning and interpretation of social phenomena from the perspective of the individuals being studied (Botma *et al.*, 2022:41).

Furthermore, an interpretive paradigm was utilised in the research, emphasising the importance of understanding individuals' subjective experiences and meaning-making, recognising the role of context in shaping individuals' experiences and expectations, and often employing qualitative methods, such as interviews and observations, to gather data. The researcher explored the factors contributing to LTFU from ART among patients on the CCMDD Programme. In this study, an interpretive paradigm enabled the researcher to gain a deeper understanding of these factors, as it was well-suited to the qualitative design. Creswell and Creswell (2022:176) explain that the research paradigm comprises four constructs: ontology, axiology, methodology, and epistemology

3.4.1 Ontology

In an interpretive paradigm, researchers believe that multiple social realities exist, shaped by the experiences and perspectives of individuals (Botma *et al.,* 2022:40). For this study, it means acknowledging that patients' experiences, beliefs, and behaviours are shaped by their unique circumstances and that there is not a single objective reality regarding ART adherence and LTFU. The ontology interpretive paradigm was applicable as the researcher was able to understand the patients‘ unique individual circumstances that contributed to LTFU of HIV patients enrolled on the CCMDD Programme.

3.4.2 Methodology

Qualitative research methods are well-suited to an interpretive paradigm. These methods include in-depth interviews, focus groups, participant observation, and document analysis. These techniques enable researchers to explore patients' subjective experiences, beliefs, and behaviours, aligning with the interpretive paradigm's emphasis on understanding human experience.

3.4.3 Epistemology

Researchers in an interpretive paradigm seek to understand and interpret participants' subjective meanings and lived experiences (Botma *et al.,* 2022:40). This approach aligns with the study's qualitative design, as it aims to uncover the complex causes of LTFU from patients' perspectives. In this study, the researcher obtained in-depth information from participants, using an interpretive epistemological paradigm, to determine the reasons for their discontinuation of ART.

3.4.4 Axiology

The interpretive paradigm values the role of values, ethics, and the researcher's reflexivity in the research process. Ethical considerations, along with the researcher's self-awareness and positionality, are essential aspects of this paradigm. Axiology was applicable and contributed to assisting researchers in understanding how ethical values contributed to CCMDD HIV patients ending up being lost to follow-up.

3.5 THE ROLE OF THE RESEARCHER

In qualitative studies, the researcher’s role is to collect data and develop the data analysis process (Polit & Beck, 2021:504). Likewise, in this study, the researcher collected the data through semi-structured in-depth interviews from HIV positive patients who are enrolled in the CCMDD Programme. Moreover, the researcher analysed the data with the assistance of an independent coder to identify the factors contributing to LTFU among ART-to-CCMDD patients. Given the instrumental role of the researcher in qualitative studies, Polit and Beck (2020:504) caution that researchers ought to reflect on their experience and qualifications to ensure the credibility of qualitative data. By reflecting on experience and qualifications, the researcher was able to reduce their preconceived perceptions of the data collected and analysed, thereby reducing bias (Shargie, 2017:88). Therefore, the researcher needed to bracket herself outside the study at all times. Bracketing will now be discussed.

3.6 BRACKETING

Bracketing is a scientific technique in which a researcher intentionally sets aside their presuppositions, prejudices, assumptions, hypotheses, or previous experiences to objectively observe and describe a phenomenon (Habibullah *,2024:9*). Bracketing can be done through three main ways: (1) setting aside one's experiences; (2) focussing on the research; and (3) combining both ways (Shargie, 2017:89). By applying bracketing in this study, the researcher aimed to create a space for the voices and perceptions of HIV positive patients on the CCMDD Programme to be heard and understood, minimising the potential distortion of findings due to the researcher's personal biases and assumptions. In this study, the researcher combined both approaches by drawing on their experience as a professional nurse working on an HIV programme. During the interviews, the researcher maintained objectivity by not making any assumptions about the information provided. Neither was any information dismissed, nor any facts ignored. No personal opinions were voiced. No participant was judged based on their experiences and the information they provided.

3.7 STUDY SETTING

This study was conducted in three purposively selected clinics within the Makhado Local Municipality of the Limpopo Province, South Africa. Limpopo is the fifth-largest province and the northernmost province of South Africa . It is named after the Limpopo River, which forms the province's western and northern borders. Limpopo is the gateway to the rest of Africa, with its shared borders making it favourably situated for economic cooperation with other parts of Southern Africa. The province borders Botswana to the West, Zimbabwe to the North, and Mozambique to the East. In the eastern region lies the northern half of Kruger National Park. Limpopo comprises five districts: Vhembe, Capricorn, Mopani, Waterberg, and Sekhukhune. Limpopo province had approximately 6.57 million people, comprising 3,099,416 males and 3,473,304 females. (South African Statistics, 2023:18). Roughly 80% of the population resides in rural areas, and the majority are Tshivenda, Xitsonga, and Sepedi speakers. The province experiences high numbers of cross-border migration from Zimbabwe, Mozambique, and Botswana.

According to Ramashala (2021:3) the Capricorn District had an HIV treatment success rate of 80.8%, the Waterberg District 78.7%, the Sekhukhune District 79.9%, the Mopani District 82.5%, and the Vhembe District 76.4%. Cultural beliefs and traditional health systems are strong in the province, and communities remain influenced by these factors, which may affect LTFU among patients on ART. This is why the researcher chose to conduct this study in the Limpopo Province.

The province has 517 public health care facilities; of these, three (3) are specialised hospitals, 452 are fixed clinics, 25 are community health centres, 30 are district hospitals, five (5) are regional hospitals, and two (2) are tertiary hospitals. The Vhembe district has one (1) specialised hospital, 116 fixed clinics, eight (8) community health centres (CHCs), six (6) district hospitals, and one (1) regional hospital. In turn, the Capricorn District has one (1) specialised hospital, 96 fixed clinics, four (4) CHCs, six (6) district hospitals, and two (2) tertiary hospitals. Furthermore, the Mopani District has one (1) specialised hospital, 95 fixed clinics, eight (8) CHCs, six (6) district hospitals, and one (1) regional hospital. In addition, the Sekhukhune District has 84 fixed clinics, three (3) CHCs, five (5) district hospitals, and two (2) regional hospitals. Lastly, the Waterberg District has 61 fixed clinics, two (2) CHCs, seven (7) district hospitals, and one (1) regional hospital. The study was conducted in the Makhado Municipality, Limpopo Province, South Africa. The study was conducted at three clinics in the Makhado Local Municipality, in the Limpopo Province. These clinics are in the formal settlements' areas in the Makhado Local Municipality.

3.8 SAMPLING

According to Creswell and Creswell (2018:142), sampling is the process of selecting a smaller group of participants to represent what a larger population might reveal if every member of the population were asked the same question. Fouche *et al.* (2021:382) state that a sampling method is completely grounded in the researcher's judgments of certain characteristics.

3.8.1 Sampling method

A non-probability sampling technique was used to select a diverse group of participants, including individuals who varied in age, gender, and duration of participation in the CCMDD Programme. In non-probability sampling, the researcher aims to maintain the exact proportions of units of analysis across important strata, such as gender and age, in the population. Non-probability sampling is commonly applied in qualitative research. The purpose of interviewing participants who are no longer defaulting is to understand their lived experiences of the factors that led them to default on ART while already enrolled in the CCMDD Programme, and to identify strategies to prevent similar defaults. The researcher selected a 12-month defaulting timeframe to obtain recent, in-depth information from the participants. The study included males and females from the age of 18 years who were HIV positive, currently on ART, had defaulted HIV treatment in the past twelve months, were registered back on the CCMDD Programme, and were currently adhering to treatment in the three selected clinics, could make an independent, informed decision, and had signed a written consent form. The study excluded males and females below the age of 18 who were HIV positive, registered with the CCMDD Programme, and had been adhering to ART in the past 12 months. Patients who were unable to make informed, independent decisions were excluded (such as those with mental disabilities).

3.8.2 Population

A population is a complete set of persons or objects that possess some common characteristics that are of interest to the researcher (Brink, Van der Walt & Van Rensberg, 2018:131). The study population comprised HIV patients who had defaulted treatment within the previous 12 months and were subsequently re-initiated on treatment and re-enrolled in the CCMDD Programme for ART at the three selected clinics in the Makhado Municipality

3.8.2.1 Inclusion criteria

The study included both male and female adults aged 18 years and older who met the following criteria:

- Living with HIV and currently on ART
- HIV patients who were re-registered for the CCMDD Programme
- Had previously defaulted on HIV treatment within the past 12 months
- Currently adhering to HIV treatment in the three selected clinics
- Capable of making an independent, informed decision and has signed a written consent form

3.8.2.2 Exclusion criteria

The study excluded the following individuals:

- Males and females below the age of 18 years
- Individuals who were HIV positive, registered for the CCMDD Programme, and had consistently been adhering to ART in the past twelve months
- Individuals who were unable to make informed decisions, such as those with mental disabilities

3.8.3 Recruitment

Recruitment in research involves the following procedures: identifying potential participants who meet the eligibility criteria, engaging in comprehensive discussions with potential participants, ensuring their understanding and willingness to participate, obtaining informed consent, and enrolling participants who meet the predetermined eligibility criteria (Chaudhari *et al.,* 2020:65).

The researcher first recruited participants from the clinic by obtaining permission from the Head of the Department of Health, Limpopo, and the district executive manager to explain the research topic, its importance, the potential risks and benefits, and the rationale for the researcher's interest in the topic to participants. The recruitment and data collection period was from March to May 2025. The researcher also explained how the data would be collected. The researcher did not coerce those who were unwilling to participate. Those who were willing were informed that they could withdraw from the study at any time. The researcher shared her contact details to address any questions or concerns participants may have.

The researcher engaged with the data capture team, community health care workers, and clinic managers to secure their support for contacting participants who expressed interest in the study. Subsequently, the study was presented to the clinic managers during a meeting. Permission was given to the researcher to distribute the study information and consent forms to HIV patients on the CCMDD Programme via email.

3.8.4 Ethical issues related to sampling

An ethical issue is any circumstance that may jeopardise at least one socially approved and respected moral value (Creswell &Creswell, 2018:173). The researcher should not be known to the participants to avoid ethical issues, and the selection criteria should be clear. The researcher avoided bias during sampling. According to Mehrabi *et al.* (2022:4), bias manifests in numerous structures and patterns that can lead to injustice. Furthermore, Mehrabi *et al.* (2022:5) note that there are different types of bias. Specifically, representation bias arises during data collection when sampling is done from a population.

The researcher selected participants according to the study's inclusion criteria. The investigator did not coerce unwilling participants into participating in the study. No participants were bribed or forced to partake. All participants partook voluntarily, without coercion or victimisation. All the data collected was kept confidential. Furthermore, the participants' freedom to withdraw was highlighted. No participants withdrew from this study.

3.8.5. Data saturation

Saturation, as defined by Fouche *et al.* (2021:394), refers to when the supplementary information collected does not yield new facts. In addition, saturation occurs when the researcher has collected all the necessary data, and no further relevant information can be obtained from the participants in the study (Mwita, 2022:414). Saturation indicates the point at which a researcher must cease gathering further data for a specific study (Mwita, 2022:414). Thirty-four participants from three clinics participated in this study. All the participants were interviewed individually, and data saturation was reached at number nineteen (19). However, the researcher continued to collect data to ensure that no information was omitted and to allow for any new or unexpected insights to emerge. All participants were given enough time to respond during the interview.

3.9 DATA COLLECTION

Data collection refers to the systematic collection and description of events of interest that address the study's research questions and objectives, using the research method relevant to the topic under study (William-McBean, 2019:1055).

3.9.1 Data collection approach and method

Data collection involves selecting participants and collecting data from them. Data may be collected from subjects through observation, testing, measurement, questioning, or recording (Gray, Groves & Sutherland, 2017:155). Data were collected through in-depth individual semi-structured interviews (Appendix 6) with HIV patients who had defaulted ART in the previous 12 months and are now re-enrolled in the CCMDD Programme. Data collection began once all approvals were granted: from the College of Human Science, CREC, and University of South Africa (UNISA); the Department of Health, the Provincial Department, and the Vhembe District; and the local area manager and facilities managers at the Makhado facilities. Participant consent was obtained thereafter. All the participants who signed a written consent form before the interview were included in this study and were interviewed. Participants were assured that their anonymity would be maintained. The interview dates and times were arranged with participants before the data collection date. Importantly, the participants' contact information was obtained from Tier.Net, a system used to capture data on all HIV patients, with assistance from data capturers.

Separate interviews were conducted in private, quiet offices at the Madombidzha Clinic A, the Kutama Clinic B, and the Mpheni Clinic C, all within the Makhado Local Municipality in the Vhembe District. Semi-structured interviews, guided by a protocol, were used to collect data. The researcher collected data to ensure data quality. The researcher introduced herself and explained what would occur during the interview, including the use of a voice recorder. Field notes were taken, which assisted the researcher in sequencing events as they occurred and in writing an account of what the researcher heard, saw, experienced, and thought during the course of interview sessions. The interviews were conducted in the participant's preferred language. The research participants responded freely to open-ended questions in narrative form, using their own words, thereby sharing their perspectives with the researcher. Probing questions were used to elicit information and encourage patients to elaborate on the topic (Brink, Van der Walt & Van Rensberg, 2018:360). After each interview, the proceedings were transcribed verbatim and entered into an MS Word document immediately. The transcripts were then printed for manual analysis.

3.9.2 Data collection procedure

Data were collected from March 2025 to May 2025. The researcher collected data using a semi-structured interview guide, as shown in Appendix 9. The researcher worked with data capture and community health care workers to recruit the available and willing HIV patients enrolled in the CCMDD Programme with a history of LTFU in the past twelve months, and who have returned to care. With permission and ethical approval, the researcher was also given access to the CCMDD Programme database to identify participants and obtain their contact information. The researcher sent invitations to participants by phone and, for those who met the researcher at the clinics, verbally. The researcher waited for participants' responses. The researcher scheduled appointments with participants to conduct the interviews. Furthermore, the purpose of the study was explained to the participants before the interviews began. Participants were informed that they were free to participate in the study and could withdraw at any time during the research. All the participants provided written consent before the interviews began. No names were used to prevent individuals from being linked to their responses. The researcher provided all participants with the interview guide to familiarise them with the questions before the interview began. The researcher conducted the interview sessions with the available, volunteered participants. Interview sessions took approximately 15 minutes. The researcher conducted interviews in the clinics' private offices

3.9.3 Data management

The data were transcribed verbatim and stored in a password-protected computer. Access to the database was restricted to the researcher and supervisors. In addition, the data was stored in accordance with the university’s protocols. Any identifiable information collected remained confidential and was accessible only to the researcher and supervisor. This information was stored separately from the research-related responses of individuals, which were anonymised by coding to prevent individual identification whilst retaining the usefulness of the data. The collected data from individuals were assigned code numbers, and the codes were stored separately from the data.

3.9.4 Ethical considerations related to data collection

According to Burke and Larry (2019:126), ethics are the principles and guidelines that help us uphold the values we hold dear. The following ethics were adhered to:

3.9.4.1 Ethical clearance

The researcher obtained ethical clearance and approval from the UNISA College of Health Studies and Ethics Review Committee. Permission to conduct the study was requested from the Department of Health in the Limpopo Province and was obtained. The letter requesting permission to collect data, together with ethical clearance and provincial permission, was submitted to the Vhembe district manager. A grant from the managers of the three clinics, namely Madombidzha, Kutama, and Mpheni, was obtained.

3.9.4.2 Informed consent

Informed consent means that participants have adequate information regarding the research, comprehend the information, and have the power of free choice enabling them to consent or to decline participation voluntarily (Polit & Beck, 2020:78). In this research study, the researcher obtained consent, verbally and written, from the participants before undergoing the research interviews as the study does not reflect any danger that can affect the participants. The researcher ensured that participants received the necessary information about the study. The researcher reassures participants that participation is voluntarily. They may withdraw from the study if they feel uncomfortable with the interviews; however, the data collected by the time of termination will be used for the purposes of the study.

3.9.4.3 Confidentiality and anonymity

Ensuring confidentiality refers to the researcher’s responsibility to prevent the disclosure of data collected during the study. In this study, the researcher explained to participants that she would use a voice recorder and take notes, and that all information discussed would not be shared with others. The data gathered would be kept under lock and key. The process of ensuring anonymity refers to the researcher’s act of keeping the subjects’ identities secret regarding their participation in the research study (Creswell &Creswell, 2018:341). In this study, the researcher used codes instead of names, for example, Participant 1.

3.10 DATA ANALYSIS

Qualitative data analysis always takes place concurrently with data collection. Therefore, researchers attempt to simultaneously gather, manage, and interpret a growing volume of data. In this study, the voice-recorded interviews were transcribed and coded immediately after data collection. Data analysis involves separating, regrouping, and reorganising data to make sense of it. The method used to analyse the qualitative data collected from the interviews was content thematic analysis. Thematic analysis aims to identify, analyse, and interpret patterns and themes in qualitative data (Fouche *et al.,* 2021:403). The researcher used Braun and Clarke's 6-step thematic analysis method.

- **Data familiarisation**

The first step is to recognise the data by repeatedly examining it thoroughly to develop a deep understanding, which is important for selecting the information that best addresses the research questions (Byrne 2021:1398). In this study, the researcher first listened to the interview recordings without taking notes and read through the interviews before transcribing. The researcher then transcribed the interviews after actively listening to and reading them. Importantly, the data were transcribed manually.

- **Coding**

The second step, as explained by Byrne (2021:1399), is to create initial symbols that will later become major themes, serving as the basic building blocks. Symbols must be concise yet provide sufficient features to stand alone. In this study, the researcher identified relevant and consistent information reported and written by the participants. From these, codes were developed, which later became subthemes.

- **Searching for themes across the data**

The third step involves generating themes, which begins when all applicable facts have been coded (Byrne 2021:1403). In this study, the researcher organised all information into categories, content, and sub-contents.

- **Exploration of the theme**

The fourth step is to explore potential themes by conducting repeated reviews of the participants' transcripts. Themes related to the coded data objects and the entire dataset are then developed (Byrne, 2021:1404). In this study, relevant, constant, and repeated information was identified to determine whether it can provide data that relate to the objectives and research questions.

- **Reviewing the theme**

The fifth step, as explained by Byrne (2021:1407), is to articulate the theme and assign it a name by providing a comprehensive analysis of its thematic structure. A brief, in-depth expression was developed after quoting, comparing, and categorising the content to generate codes, which later became themes and subthemes.

- **Producing the report**

The sixth step is compiling a report (Byrne 2021:1409). Subsequently, any changes made throughout the process were documented, after which the report was finalised.

3.11 MEASURES TO ENSURE TRUSTWORTHINESS

Trustworthiness refers to the researcher's critical appraisal of every decision made throughout the research process. It is demonstrated by ongoing self-reflection and self-scrutiny to ensure that interpretations are valid and grounded in the data (Botma *et al*., 2022:327). Trustworthiness in research refers to the extent to which the findings are credible, dependable, transferable, and confirmable. The following measures to ensure trustworthiness were adhered to throughout the study:

3.11.1 Credibility

Credibility refers to confidence in the truth of data and interpretation (Beck & Polit, 2019:74). Strategies to enhance credibility include prolonged engagement, triangulation, member checking, and peer debriefing. Data were collected from participants using a voice recorder during interview sessions. The researcher was guided by a qualitative researcher to ensure the study's credibility. Following the study's findings, the researcher met with the participants and shared the interpretations to determine whether they reflected their experiences and circumstances.

3.11.2 Transferability

According to Beck and Polit (2019:79), transferability refers to the extent to which qualitative findings can be transferred to other settings or groups. In this study, the researcher provided a thick description of the data analysis and of the use of voice recordings and field notes. Transferability was ensured by providing a thick description in the study. The researcher selected a sample and conducted in-depth interviews. The topic was covered in depth and breadth to ensure that the data obtained support the provision of thick description. Data were recorded on a voice recorder to ensure that participants’ narratives were well captured in their original format. The researcher requested that an experienced research supervisor read randomly selected transcripts and identify major themes and categories, so that readers would have a clear understanding of the data.

3.11.3 Conformability

Conformability ensures that data support the findings, conclusions, and recommendations, and that there is actual evidence (Creswell, 2018:170). To ensure compliance, this is achieved through the use of independent coders who are research supervisors and the UNISA research ethics committee. This assisted the researcher in collecting and rectifying trustworthy data. This was reflected in the participants' voices, not in the researcher’s perceptions; this showed that the independent coder focused on what participants said rather than on what the researcher assumed. The technique that enhances comfort is the enquiry audit, in which the researcher clearly describes, explains, and justifies at each stage of the research process.

3.11.4 Dependability

According to Botma et al. (2022:344), dependability refers to the stability of data over time and across conditions. Dependability was achieved by describing the research data, findings, interpretations, and recommendations to confirm that the investigation is supported by data and internally coherent. A tape recorder was used for all the interviews to increase reliability.

3.12 ETHICAL CONSIDERATIONS

According to Burke and Larry (2024:126), ethics are the principles and guidelines that help us uphold the values we hold dear. The ethical principles that were adhered to are discussed in the next section.

3.12.1 Ethical clearance

The researcher obtained ethical clearance and approval from the UNISA College of Health Studies and Ethics Review Committee (see Appendix 1) on the 12th September , 2024. Permission to conduct the study was requested from the Department of Health in the Limpopo Province and was granted. The letter requesting permission to collect data, together with ethical clearance and provincial permission was submitted to the Vhembe district manager. A grant from the managers of the three clinics, namely Madombidzha Clinic, Kutama Clinic, and Mpheni Clinic, was obtained (see Appendices 4, 6, and 8).

3.12.2 Informed consent

Informed consent means that participants have adequate information regarding the research, comprehend the information, and have the power of free choice enabling them to consent to or to decline participation voluntarily (Polit & Beck, 2020:78). In this research study, the researcher obtained consent, verbally and written, from the participants before undergoing the research interviews as the study does not present any danger that can affect the participants. The researcher ensured that participants received the necessary information about the study (see Appendix 2). The researcher reassured the participants that participation was voluntary and that they would not be coerced. Furthermore, they were informed that they could withdraw from the research if they felt uncomfortable with the interviews; however, data collected at the time of termination would be used for the study.

3.12.3 Confidentiality and anonymity

Ensuring confidentiality refers to the researcher’s responsibility to prevent the disclosure of data collected during the study. In this study, the researcher explained to the participants that she would use a voice recorder and take notes, and that all the information discussed would not be shared with others. The data gathered would be kept under lock and key. The process of ensuring anonymity refers to the researcher’s act of keeping the subjects’ identities secret regarding their participation in the research study (Creswell, 2018:181). In this study, the researcher used codes instead of names, for example, Participant 1.

3.13 SUMMARY

The study employed an exploratory, descriptive, qualitative research design, which enabled the researcher to describe and explore patients' experiences of factors contributing to LTFU on the CCMDD Programme. This study was conducted in the Limpopo Province of South Africa at three selected clinics in the Makhado Municipality, Vhembe District. Data were collected through in-depth individual semi-structured interviews (Appendix 6) with HIV patients who had defaulted ART in the past 12 months and were then re-enrolled in the CCMDD Programme. The qualitative findings are presented in Chapter 4.

CHAPTER 4

ANALYSIS, PRESENTATION, AND DESCRIPTION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

The previous chapter described the methodology employed in this study and the data collection tools used to address the research questions. This chapter presents the results from the face-to-face interviews and the written narratives in this study. The results are organised into themes, each of which is further divided into sub-themes. This research was conducted at three clinics located within the Makhado Municipality. Thirty-four (34) semi-structured interviews were conducted to elicit responses from patients enrolled in the CCMDD Programme who had a history of LTFU. The purpose of this study was to explore and describe the underlying factors contributing to high loss-to-follow-up rates among patients receiving ART through the CCMDD Programme at Makhado Local Municipality, Limpopo Province, South Africa.

The objectives of the study were as follows:

- To describe the factors contributing to LTFU among patients receiving ART through the CCMDD Programme in the Makhado Local Municipality.
- To explore the challenges faced by patients receiving ART on the CCMDD Programme that contribute to LTFU in the Makhado Local Municipality.
- To describe the impact of LTFU among patients receiving ART on the CCMDD Programme in the Makhado Local Municipality.
- To provide actionable recommendations and insights for healthcare authorities, policymakers, and programme managers to enhance patients’ retention and adherence within the CCMDD Programme in the Makhado Local Municipality.

4.2 DATA MANAGEMENT AND ANALYSIS

4.2.1 Data management

Data management in qualitative research includes maintaining privacy and protecting individuals' information. This encompasses various aspects, including data storage, data sharing and ownership, record-keeping, and confidentiality. Confidentiality refers to protecting an individual's information by keeping it secure, controlling access to it, and ensuring it is not disclosed to others. Confidentiality begins when an individual gives information to another person on the condition that the recipient will not disclose it (Ragimane, 2024:46). In this study, the participants were assured that the collected data would not be disclosed to any unauthorised person without their permission. However, the data would be made available to the supervisor. All collected data will be stored for five years in a secure location (locked in a University office and in password-protected computer files) after data analysis and interpretation were complete to maintain confidentiality. The participants were interviewed in a private room. The researcher ensured that participants' names were not disclosed during the interview by assigning each participant a unique number.

4.2.2 Data analysis method

Data analysis involves organising and interpreting collected data to give it structure and meaning (Brink *et al.,* 2018:520). Qualitative data analysis is the explanation and organisation of visual information to develop explanations about straightforward and indirect structures and dimensions of meaning-making in the matter and what is portrayed in it (Creswell &Creswell,2018:69). To strengthen the researcher's arguments, examples of quotations from the collected data are provided. Thematic analysis was used to identify, analyse, and interpret patterns and themes in the data collected from the 34 interviewees. The study's thematic analysis followed the six-step guide proposed by Braun and Clarke (2006). A researcher repeatedly read the data in step one. The process ensured that initial codes were generated from the data in step two. A broader list of codes was grouped in step three based on similarity. Candidate themes were reworked, merged, and others were discarded in step four. The themes were reviewed in steps five and six, with step six presenting the results. The steps were as follows:

Step 1: The researcher listened carefully to the interview recording before transcribing it to become familiar with the data.

Step 2: The researcher then identified relevant and consistent information expressed by participants, both spoken and written, to generate the initial codes.

Step 3: The information was organised into classes, contents, and sub-contents to identify themes across the data.

Step 4: The researcher identified relevant, constant, and repeated information to determine whether it could provide data that addressed the research questions and enabled exploration of the themes.

Step 5: The researcher reviewed the themes by developing brief, in-depth expressions after quoting comparisons of the same content to identify shared opinions.

Step 6: The researcher produced the report by documenting and writing down any changes that occurred during the process, and then completed and finalised it.

4.3 RESEARCH FINDINGS

Data were collected through in-depth interviews with 34 HIV patients who were in CCMDD within three healthcare facilities in the Makhado Municipality in the Vhembe district. Data (see Table 4.1 below) were collected through audio recordings and field notes. All the participants signed the consent form before participating. Interviews were scheduled with the participants and held in the facility's private office, as arranged with facility management. Interviews were conducted by the researcher herself to maintain the quality and integrity of the data. The interviews were completed in two months.

The study included 34 participants drawn from three facilities, namely Madombidzha, Kutama, and Mpheni and are profiled in Table 4.1. The sample comprised both male and female participants, with a higher representation of females than males.

Participants’ ages ranged from 20 to 80 years, with the majority falling within the 40–60 age group. In terms of employment status, most participants were unemployed, while others were engaged in private, government, or informal employment. This indicates a diverse socio-demographic profile of participants, although with a predominance of unemployed individuals across all three study sites.

Table 4.1: Participants' demographic characteristics

PARTI-CIPANTS	GENDER	AGE	EMPLOYMENT	FACILITY
P1	Female	60-65	Government	Madombidzha
P2	Male	70-75	Unemployed	Madombidzha
P3	Female	50-55	Private	Madombidzha
P4	Female	40-45	Unemployed	Madombidzha
P5	Female	50-55	Unemployed	Madombidzha
P6	Female	55-60	Unemployed	Madombidzha
P7	Female	45-50	Unemployed	Madombidzha
P8	Male	45-50	Private	Madombidzha
P9	Female	50-55	Private	Madombidzha
P10	Female	45-50	Unemployed	Madombidzha
P11	Male	60-65	Private	Madombidzha
P12	Male	75-80	Unemployed	Madombidzha
P13	Male	55-60	Private	Madombidzha
P14	Male	55-60	Unemployed	Madombidzha
P15	Male	65-70	Unemployed	Kutama
P16	Female	65-70	Unemployed	Kutama
P17	Female	45-50	Unemployed	Kutama
P18	Female	50-55	Private	Kutama
P19	Male	20-25	Unemployed	Kutama
P20	Male	20-25	Unemployed	Kutama
P21	Male	30-35	Government	Kutama
P22	Male	55-60	Government	Kutama
P23	Female	35-40	Private	Kutama
P24	Female	40-45	Unemployed	Kutama
P25	Female	50-55	Private	Kutama

PARTI-CIPANTS	GENDER	AGE	EMPLOYMENT	FACILITY
P26	Female	20-25	Unemployed	Mpheni
P27	Female	20-25	Unemployed	Mpheni
P28	Female	45-50	Unemployed	Mpheni
P29	Male	20-25	Unemployed	Mpheni
P30	Female	20-25	Private	Mpheni
P31	Female	25-30	Private	Mpheni
P32	Female	35-40	Private	Mpheni
P33	Female	45-50	Government	Mpheni
P34	Male	40-45	Unemployed	Mpheni

4.3.1 Presentation of findings

After the data were analysed, five major themes emerged from the raw data, and sub-themes were also formulated (see Table 4.2 below).

4.3.2 Themes and sub-themes

The participants shared their experiences regarding the factors contributing to high LTFU from ART among patients on the CCMDD Programme. Five major themes emerged from the data that were collected: (1) Positive factors of the CCMDD Programme; (2) Individual factors; (3) Interpersonal factors; (4) Community factors; and (5) Health system-related factors. Sub-themes were formulated (see Table 4.2 below). Annexure A of this study shows how the themes and sub-themes were developed during the study's data analysis. Themes were identified and developed from the participants' statements.

Table 4.2: Themes and sub-themes of LTFU HIV patients on the CCMDD Programme

THEMES	SUB-THEMES
Theme 1: Positive factors of the CCMDD Programme	1.1 CCMDD improves patients' adherence to treatment
	1.2 Reduce congestion in the facilities
Theme 2: Individual factors	2.1 Understanding of the CCMDD Programme
	2.2 Knowledge of script renewal
	2.3 Side effects
Theme 3: Interpersonal factors	3.1 Social influence and support system
	3.2 Stigma and disclosure
Theme 4: Community factors	4.1 Distance and time
	4.2 Waiting time
Theme 5: Health system-related factors	5.1 Shortage of medication
	5.2 Communication breakdown

Theme 1: Positive factors of the CCMDD Programme

The CCMDD Programme was well-received by HIV patients, this aligns with the findings of (Chauke, 2024:55) who asserts that CCMDD is well accepted by the community. They perceived it as a valuable initiative that enhanced their access to medication. Community members enrolled in the CCMDD Programme appreciated the improved accessibility of their ART, which had positively affected their health and adherence, as well as the reduction in facility congestion.

Sub-theme 1.1: CCMDD improves patients' adherence to treatment

During the interview, the participants indicated that collecting treatment from external pick-up points contributed to HIV patients adhering to ART. The results of this study further revealed that the CCMDD Programme had a positive impact with regard to simplifying treatment collection, easing the burden on HIV patients, and saving patients' lives.

Participant 6 indicated*, “I think there is no need to improve this Programme, this way that we are using, of going to external pick-up points is good.”*

In addition, Participant 10 opined, *"It helps*." *I hardly miss collecting my treatment nowadays. The CCMDD Programme is convenient.”*

The CCMDD Programme was making a significant impact on the lives of HIV patients by helping them to manage their condition and improve their overall health.

Participant 11 testified*, “To be honest, ART and the CCMDD Programme saved my life.”*

In turn, according to Participant 15*, “Since I started being on CCMDD, I see a lot of improvement in my health, even going to collect treatment is no longer a burden.”*

The study's findings highlighted that the CCMDD Programme had led to improved patient adherence to ART. This finding concurs with Fox and Rossen (2019), who argue that ART has significantly improved the livelihood of patients compared to before the initiation of this treatment.

Sub-theme 1.2: Reduce congestion in the facilities

Participants reported that long queues of chronic patients awaiting treatment were common in clinics. Service delivery has improved since the introduction of the CCMDD Programme in health facilities.

The CCMDD Programme reduced overcrowding in the clinics.

Participant 34 noted, *“Mmh, this clinic used to be so crowded, yoh!”*

CCMDD Programme patients no longer attended the clinic as frequently as they used to.

Participant 5 indicated, *“You see now, I only come to the clinic for renewal of my script and the collection of blood.”*

Following the implementation of the CCMDD Programme, the study revealed that patient congestion and long waiting time had decreased. This is supported by

SANAC (2017), which reported that since the introduction of CCMDD, patients have experienced reduced waiting periods.

Theme 2: Individual factors of the CCMDD Programme

The study has found that, although the CCMDD Programme has improved access to chronic medication and reduced loss to follow-up, individual-level factors continue to contribute to LTFU among patients CCMDD patients on ART. Globally, individual factors such as limited understanding of treatment, personal beliefs, and behavioural challenges remain key barriers to retention in HIV care (Muhula et al., 2022).In sub-Saharan Africa, similar challenges have been reported, where patient-related factors such as stigma, mobility, and treatment perceptions continue to affect adherence and continuity of care (Mukumbang et al., 2017). In the South African context, healthcare workers report that patients’ understanding of treatment processes and individual behaviours still contribute to missed appointments and treatment interruptions despite the implementation of CCMDD (Muthelo et al., 2020; Moroko, 2023).Findings on these factors are discussed in detail below.

Sub-theme 2.1: Understanding of the CCMDD Programme

Understanding the CCMDD Programme requires a clear grasp of the entire process, from patient enrolment through to medication collection. A good knowledge of the CCMDD Programme enables patients to make the most of its services and benefits. After being transitioned to the CCMDD Programme, the patients stopped taking their medication because they believed they had been cured. The patient's statement below revealed a limited understanding of the CCMDD Programme.

Participant 1 stated, “I stopped taking treatment because I thought I was cured,” highlighting a lack of understanding of lifelong ART adherence. This finding was consistent across interviews and the finding of Chuene (2025), where participants expressed similar misconceptions about treatment continuation and symptom relief, indicating that limited knowledge contributes to LTFU among ART patients.

Sub-theme 2.2: Knowledge on script renewal

Understanding how script renewal can significantly affect adherence to the CCMDD Programme is important. Patients without knowledge of the script renewal procedure were more likely to miss their prescription renewal dates, experience interruptions in their treatment, and show decreased adherence to the CCMDD Programme. Patients' lack of understanding about the script renewal procedures caused disruptions in their CCMDD Programme medication. Participant 2 confirmed this as follows:

"I was never informed. I don't know how it works; that is why I am asking you. How come I am no longer getting my medication from the pharmacy?"

Limited knowledge of the CCMDD script renewal led patients to return to clinics to collect their medication.

Participant 28 revealed, "*I honestly didn't know that I had to renew the script again."*

A lack of knowledge about the script renewal was found to have contributed to LTFU during the interviews.

Sub-theme 2.3: Side effects

CCMDD Programme patients who experience side effects were found to be struggling to maintain consistency in their medication collection and adherence. These patients reported that they stopped taking their medication, discontinued treatment, and others missed collection dates due to the side effects of ART. Some CCMDD Programme patients stopped coming to receive treatment and started consulting private doctors to address ART-related side effects.

This is what Participant 9 shared, *"I had developed a rash that made me stop the treatment, and I started going to a private doctor."*

Participant 10 added*, "I was getting stomach cramps after taking the treatment that I was receiving from the pharmacy. The traditional doctor said that I had been poisoned. She gave me something to wash the poison away."*

Participant 11 concurred, " The side effects were dire. The less I say, the better. At times, I defaulted".

A study found that some CCMDD patients consulted traditional doctors to help mitigate the treatment-related issues. This finding concurs with Mboweni (2024), who affirms that patients default on treatment and seek alternative options.

Theme 3: Interpersonal factors of the CCMDD Programme

The interpersonal factors examined the influence of social relationships and support systems, including those provided by family, friends, and intimate partners. Participants identified interpersonal factors as one of the factors contributing to LTFU of HIV patients on the CCMDD Programme. This theme is divided into the following sub-themes: social influence and support systems, stigma and disclosure.

Sub-theme 3.1: Social influence and support system

Social influence can either support or hinder the CCMDD Programme patients' ability to manage their condition effectively. A lack of support for CCMDD Programme patients in this study refers to inadequate assistance and encouragement to CCMDD Programme patients to adhere to their medication schedules. The participants explained how the lack of support from their family led to the LTFU of the CCMDD Programme patients on ART. Cultural and religious beliefs can influence patients' decisions about adhering to ART. The participants 'comments regarding their experiences are shared below:

Participant 30 revealed, *"I had received healing deliverance from the church."*

Participant 30 added, *"My friend took me to consult, I was told that I don't have HIV, it was just poisoning (tshiliso)."*

Support from family and friends can help patients stay motivated and engaged in their treatment. Below is a quote from Participant 20:

My sister always claimed, "It has been a long time since I have been on treatment; chances are my virus is no longer there."

A lack of positive advice and support was found to have adversely affected the patient's treatment journey.

Participant 3 opined*, “The challenge I came across was not getting support from family and friends, eish, it brought me a lot of fear.”*

CCMDD Programme patients without the sound support of loved ones face challenges in managing their condition. See the participant’s responses below:

“My husband is not on treatment. He refuses to attend testing. He doesn’t believe that I have a virus.”

CCMDD Programme patients emphasised that a lack of adequate support affects their consistency with treatment and results in poor health outcomes.

Participant 30 noted, *“I felt depressed and angry sometimes. I felt like no one was supporting me with my life. I was tired of medication.”*

The influence of supporters and peers was identified as playing a significant role in assisting HIV patients on the CCMDD Programme to maintain adherence to treatment. Participants indicated that encouragement from family members, peers, and treatment supporters helped them remain consistent with medication collection and clinic attendance. This finding aligns with Muthelo et al. (2020), who reported that social and community support systems strengthen patient engagement in CCMDD-related care processes. Mukumbang et al. (2017) found that social support is a critical factor influencing retention in HIV care, as supportive relationships enhance motivation and reduce defaulting behaviour among patients.

Sub-themes 3.2: Stigma and disclosure

Stigma and disclosure were reported to have played a key role in contributing to LTFU of CCMDD Programme patients on ART. Some participants admitted that they were afraid of revealing their HIV status or being seen collecting the medication by their neighbours, family, friends, and acquaintances. The participants stopped taking the medication because they were afraid that they would be judged negatively by those around them. The quotations below support this sub-theme:

Participant 32 explained, *“I shared a room with someone, so I was afraid that they would see that I am taking ARVs.”*

Fear of social rejection prevents patients from disclosing their status. Participant 34 shared, *“I stayed at work. My boss doesn’t know of my status.”*

Participant 23 added, “*My boss doesn’t know of my status, and I don’t want to risk losing my job.”*

In conclusion, participants reported avoiding their medication because of fear of being identified as having HIV. These factors affected patients’ adherence to ART and resulted in LTFU.

Theme 4: Community-related factors of the CCMDD Programme

In community-related contexts, the focus shifts to larger social networks, such as neighbourhoods, workplaces, and social groups. Many individuals are avoiding community-based clinics due to the following two sub-themes: distance, time, and waiting time. Below, they are discussed in detail. Mboweni (2024) highlights that geographical barriers and prolonged waiting times remain significant obstacles to accessing primary healthcare services, particularly in community-based settings. Below, these sub-themes are discussed in detail.

Sub-theme 4.1: Distance and time

Long distances and travel times to collection points were identified as one of the factors contributing to LTFU of ART in the CCMDD Programme. Patients who face long distances and travel times are at risk of treatment interruptions. The participants cited below described how pick-up points affect ART patients on the CCMDD Programme, highlighting their contribution to LTFU.

Participant 4 indicated*, "They should make many places for fetching medication, some of us in our villages have no closer place to collect the medication."*

Participant 8 responded*, "I can say eee…I did not have enough time to go to the pick-up point since it's far."*

Address changes disrupted patients' adherence to the CCMDD Programme and to medication collection. The participant confirmed that, following a change of address, some CCMDD Programme patients found their pick-up points too far away, affecting the collection of their medication.

According to Participant 19*, "My pick-up point was at home, so I couldn't travel back home when I was at college."*

Participant 23 replied, *"Mmm…. I got a job which is located far from where I used to get my medication."*

Longer travelling hours and distances to the pick-up points of HIV patients on the CCMDD Programme were revealed to be causing LTFU. This finding is consistent with Nyaga (2021), who reported that long travel distances to health facilities and medication pick-up points significantly reduce retention in HIV care, as patients often struggle with transport costs and time constraints. These results highlight that geographical access remains a key structural barrier affecting continuity of care among CCMDD patients.

Sub-theme 4.2: Waiting time during script renewal

The CCMDD Programme is designed to reduce patient waiting times while ensuring the required medication is provided. Although the CCMDD Programme aims to reduce waiting time, patients reported that they still faced challenges with its implementation. This is common in clinics because staff who care for CCMDD Programme patients also care for other patients who are not enrolled in the CCMDD Programme. Below are the responses from participants during the interviews conducted:

Patients on the CCMDD Programme are reluctant to return to the clinic and wait in line for prescription renewals.

Participant 7 shared, *“The challenge is that we get used to coming only to pick up the parcel, and when we are supposed to renew, we get too lazy to go through the process of standing in the queue and retrieving files like any other patient.”*

Participant 9 explained, ‘*I stopped coming because of laziness to wait to be assisted. I was told that we won’t queue in a line.”*

A staff shortage at the clinic was identified as a factor contributing to prolonged waiting times for patients on the CCMDD Programme who required prescription renewals.

Participant 9 further added, *“The people assisting us are also busy with other duties such as retrieving files for other non-CCMDD Programme patients, meaning we have to wait still.”*

Participant 21 stated, “*My main challenge is the waiting time at the clinic and having to go back to renew the script and waiting in those long queues, with everyone.”*

Lastly, two participants made the following recommendations to reduce the waiting time for CCMDD Programme patients on ART:

Participant 21 suggested, *"They should have a designated consulting room for the daily renewal of CCMDD scripts specifically for patients in the CCMDD Programme."*

Participant 34 shared*, "Even at the pharmacy, blood collection and script renewal should be done."*

It was found that staff shortages at the clinics led to longer waiting times in the waiting area, even when patients returned for prescription renewals or to make enquiries. This discouraged patients from returning for script renewals.

Theme 5: Health system-related factors

Health system-related factors are the main themes that were identified as barriers to HIV patients accessing ART. The findings are consistent with Mashilo (2022) and Molefe (2019), who report that health system-related challenges such as medication shortages, poor data management, and communication breakdowns significantly hinder HIV patients' access to ART and continuity of care. The sub-themes were: A shortage of medication, poor data recording, and communication breakdown. The sub-themes are discussed in detail below.

Sub-theme 5.1: Shortage of medication

The shortage of medication at the pick-up points has affected HIV patients relying on the CCMDD Programme significantly. Patients on the CCMDD Programme are experiencing issues with medication availability, where they visit the pharmacy to collect their treatment, only to find that it is not available.

Participant 16 claimed, *"There were months where I went to the pick-up point and did not get medication."*

Due to a medication stock out, it was revealed that CCMDD Programme patients decided to return to the clinic to collect their medication, which defeated the purpose of the programme aimed at reducing clinic visits.

Participant 18 responded*, "I never got my medication from the pharmacy since I registered. I just ended up not going to the medical centre (CCMDD Programme pick-up point) and coming to receive my medication at the clinic."*

A shortage of medication disrupts patients' medication routines. This makes it difficult for patients to adhere to their treatment plan.

Participant 28 recalled, *"At Clicks, they told me to go to the clinic because my medication was not there."*

Participant 29 claimed, *"I was told to wait for the message, and I waited until I gave up."*

It was reported that although patients were enrolled in the CCMDD Programme to collect medication at their preferred pick-up points, they were not consistently accessing their therapy due to a shortage of medication supply from the provider. This finding is consistent with Nyaga (2021), who highlights that interruptions in medication supply and system inefficiencies negatively affect continuity of HIV care and contribute to poor treatment adherence.

Sub-theme 5.2: Communication breakdown

Communication issues with the CCMDD Programme were found to be causing patients to miss medication pick-ups and renewal dates. This also caused confusion and disruptions among patients on the CCMDD Programme. During the researcher's interviews, participants confirmed that communication breakdowns contributed to the loss of follow-up. Communication breakdowns in the CCMDD Programme involved patients not receiving SMS reminders for medication collection or prescription renewal. CCMDD Programme patients receive SMS reminders to collect their medication or to renew their prescription. The CCMDD Programme patient expressed concern that they had not received a prescription renewal reminder.

Participant 6 shared, *"I went to Clicks one time to collect my medication, but that time I had not received any message; therefore, they responded by asking me if I had not renewed my script."*

Record-keeping for CCMDD Programme patients involves tracking medication dispensing history. Participants reported that patients on the CCMDD Programme were not being updated.

Participant 7 stated, "I was called and told that I was lost to follow, only for them to confirm that I came and collected my parcel."

Participants shared that SMS notifications for medication collection were delayed:

Participant 16 opined*, "I was not receiving the message as promised, and sometimes the message comes late."*

To add to what the participant above remarked, Participant 23 added, *"Sometimes I receive the message late to go and collect medication when my treatment is already finished."*

The patient confirmed that they were not receiving SMS notifications for medication collection or script renewal.

Participant 22 noted*, "I was told that my treatment had not arrived, yet I should wait for the message. Ey, I waited and waited, never got any message."*

The lack of consistent, clear communication regarding the CCMDD Programme played a significant role in patients on ART becoming lost to follow-up

4.4 DISCUSSION OF THE RESEARCH FINDINGS

During the analysis, the researcher used thematic analysis, which enabled the identification of recurring patterns and themes across the data, and the discussion is presented according to the themes identified in the previous chapter (Braun &Clarke,2006). The discussion is guided by the SEM, which illustrates how health behaviour and outcomes are shaped by interactions among individual, interpersonal, community, organisational, and policy-level factors (Silvia, 2021:14) .

The study was designed to respond to four central questions. First, it examined the factors contributing to LTFU among patients receiving ART through the CCMDD Programme in the Makhado Local Municipality. Second, it considered the challenges patients encountered within the programme that contributed to LTFU. Third, it explored the impact of follow-up among patients receiving ART in the CCMDD Programme in the same municipality. Finally, it examined recommendations and insights to inform healthcare authorities, policymakers, and programme managers in strengthening patient retention and adherence within the CCMDD Programme in Makhado.

The chapter interpreted the findings through the lens of the SEM, highlighting their broader significance while identifying pathways to improve the practice and inform the policy. Accordingly, the chapter aimed to contribute by offering not only a clearer understanding of the dynamics of loss to follow but also strategies to enhance patient outcomes in the CCMDD Programme.

4.4.1 Positive factors of the CCMDD Programme

The findings of this study showed that patients living with HIV have responded very positively to the CCMDD Programme, viewing it as a helpful initiative that makes accessing their ART easier. Many participants from the Makhado Local Municipality explained that the Programme not only simplified the process of getting their medication but also reduced the crowding they had previously experienced at healthcare facilities. These experiences align with Chauke's (2024:7) report of a wide-reaching ART programme that now treats approximately 5.7 million people. As UNAIDS (2022:6) reports, this programme has contributed to meaningful reductions in AIDS-related deaths and new infections, demonstrating how wider access to treatment can have a clear impact on population health. The positive experiences of patients on the CCMDD Programme reflect this broader picture: when treatment is easier to obtain, both adherence and health outcomes improve.

Viewing the findings through the lens of the Social Ecological Model (SEM) helps explain why the CCMDD Programme is effective for patients on ART. Silvia (2021:14) explains that the SEM sees human behaviour as shaped by layers ranging from personal traits to broader social and policy contexts, with outcomes influenced by interactions across these levels (Dangerfield, 2025:78). Patients contended that easier access to their medication makes it simpler for them to follow their treatment.

Less crowded clinics also create a more comfortable environment for both patients and staff, which helps patients adhere to the programme. At a broader level, government ART programmes provide the structure that supports these improvements. The SEM model shows that the programme's success stems from a combination of individual actions and broader social, organisational, and policy factors (Manyaka, 2022:45).

The study found that the use of external pick-up points for medication collection has a significant effect on patients’ adherence to ART in the CCMDD Programme. This finding resonates with the argument of Ndoro *et al.* (2021:9), who emphasise the influence of the CCMD programmes on achieving treatment adherence. The participants reported that collecting treatment outside the clinic reduces the stress and effort associated with monthly visits, making it easier to adhere to their treatment schedule. This supports the idea presented by the National Department of Health (2024:1) that decentralised dispensing models can improve access to medication while easing congestion in public health facilities.

When viewed through the lens of the SEM model, these findings show how different levels of influence interact to shape behaviour. Individually, the convenience of external pick-up points helps patients manage their treatment more effectively. At the organisational and community levels, reduced clinic congestion creates a calmer environment for both patients and staff. At the policy level, the CCMDD Programme reflects deliberate strategies to improve access to chronic medication and support patient-centred care (Manyaka, 2022:45; Silvia, 2021:14). Taken together, these levels illustrate that adherence is not only determined by individual choice but also by the broader systems and structures that make ongoing treatment practical and sustainable.

Furthermore, the study found that the CCMDD Programme has significantly reduced clinic congestion, with patients visiting less frequently and primarily attending for prescription renewals and blood tests in the Makhado Local Municipality. This aligns with findings by Tshitangano and Olaniyi (2020:71), who noted that reducing the burden of frequent clinic visits improves patient retention. Similarly, Vita (2021:14) emphasises that minimising practical barriers, such as long waiting times, can enhance adherence to chronic medication regimens. The results also resonate with Hughes (2025:52) and Nkuna *et al*. (2021:134), who observed that interventions addressing logistical and infrastructural challenges are crucial for maintaining a consistent ART uptake in rural municipalities. Overall, the findings suggest that simplifying access to medication through programmes such as the CCMDD Programme helps mitigate factors contributing to LTFU.

From the perspective of the SEM Model, the benefits of CCMDD operate across multiple levels. At the individual level, patients experience reduced stress and time constraints, supporting better adherence (Opio *et al.,* 2019:45; Sariah *et al.,* 2019:23). Interpersonal and community influences also improve, as fewer clinic visits reduce exposure to stigma and unwanted disclosure within families and social networks (Yakob & Ncama, 2016:77; Kisigo *et al.,* 2020:34). Organisationally, lighter patient loads allow healthcare staff to provide more attentive and supportive care, reflecting concerns highlighted by Hughes (2026:10) and Kisigo *et al*. (2019:31). At the policy level, the CCMDD Programme aligns with national HIV guidelines by decentralising ART distribution and mitigating financial and logistical challenges for patients, supporting improved retention and adherence (Opio *et al.,* 2019:49; Mukumbang *et al*., 2017:62; Yakob & Ncama, 2016:79). The literature thus reinforces that interventions addressing structural, social, and individual barriers can enhance ART adherence and retention within local health systems.

4.4.2 Individual factors of the CCMDD Programme

The study found that several individual factors continue to contribute to LTFU of ART patients on the CCMDD Programme in the Makhado Local Municipality. Limited knowledge about HIV management and misunderstandings about the purpose of ART remain significant barriers, as patients may incorrectly believe that improved health signals a complete cure (Opio *et al.,* 2019:28; Tshitangano & Olaniyi, 2020:71). Fear of medication side effects, including gynecomastia and metabolic complications, further discourages adherence (Sariah *et al.,* 2019:145). Some patients reported sharing medications with partners or relying on faith healing practices, which disrupt adherence and compromise treatment outcomes.

Fear of stigma and reluctance to disclose HIV status to intimate partners or family members also limit access to social support, while some patients deliberately attend distant clinics to maintain privacy, despite added financial and time burdens (Nyamhanga *et al.,* 2017:11; Kisigo *et al*., 2020:34). While the CCMDD Programme has successfully reduced congestion and improved convenience for patients, gaps in understanding the programme, renewing prescriptions, and managing side effects continue to contribute to LTFU.

Interpreting these results through the lens of the SEM stresses how multiple levels interact to influence patient adherence. At the **individual level**, misconceptions about ART and its side effects, and a poor understanding of the CCMDD Programme, directly affect behaviour (Opio *et al.,* 2019:28; Sariah *et al.,* 2019:145). The interpersonal level emphasises the role of social relationships, showing how stigma, lack of disclosure, and pressure from partners or family affect engagement in care (Yakob & Ncama, 2016:11; Kisigo *et al.,* 2020:34). At the community level, social norms, including masculinity expectations, shape choices about clinic attendance and willingness to seek care locally (Nyamhanga *et al.,* 2017:23; Mukumbang *et al.,* 2017:17). Organisational factors, such as limited counselling and guidance on prescription renewals, influence retention at the healthcare facility level, while policies governing the CCMDD Programme determine access, equity, and the effectiveness of preventive interventions. This multi-level perspective underscores the importance of designing targeted strategies that address both individual behaviour and the broader social, organisational, and policy environment to strengthen adherence and reduce LTFU.

A limited understanding of the CCMDD Programme was identified as a key factor contributing to LTFU among ART patients in the Makhado Local Municipality, as patients who were unclear about the programme's purpose, benefits, or procedures sometimes discontinued treatment, believing they were cured after transitioning to the CCMDD Programme. This aligns with research indicating that many patients struggle to comprehend how the programme operates fully and the long-term importance of consistent ART adherence, which can lead to missed medication collections or uncoordinated transfers between facilities, ultimately undermining treatment effectiveness (Chetty & Ross, 2024; Sekopa & Netangaheni, 2024).

Using the SEM model, this issue can be seen across multiple levels. Individually, knowledge gaps affect patients' commitment to treatment (Opio *et al.,* 2019; Sariah *et al.,* 2019). Interpersonal factors, such as family and peers, can positively or negatively influence adherence (Nyamhanga *et al.,* 2017; Yakob & Ncama, 2016). At the community level, stigma discourages patients from seeking guidance, while organisational factors, such as clinic support and communication, are crucial for clarity and adherence (Mukumbang *et al.,* 2017; Hughes,2026:9). Policy-level measures should ensure ongoing patient education and monitoring to reduce LTFU (Opio *et al.,* 2019; Mukumbang *et al.*, 2017).

Limited understanding of prescription renewal emerged as a critical barrier to ART adherence within the CCMDD Programme in the Limpopo Province. Patients who are unclear about procedures or the timing of script renewal often experience treatment interruptions, which can undermine viral suppression and overall health outcomes. This finding resonates strongly with Melaku *et al.* (2016:22), who found that insufficient patient education on the urgency of follow-up appointments contributed significantly to non-adherence in HIV care. Similarly, Mashilo (2022:31) emphasises that inadequate understanding of procedural requirements, such as prescription renewal, directly affects patients' ability to maintain consistent treatment and increases the likelihood of being lost to follow-up.

The findings imply that gaps in patient education are more than the result of administrative oversight; they have tangible effects on continuity of care. Confusion around script renewal not only increases unnecessary clinic visits but can also lead to patient frustration, disengagement, and eventual default from treatment. This can also be understood better within the SEM framework, which posits that societal or community structures are not isolated from an issue but are interconnected with other factors (Silvia, 2021:15).

ART-related side effects emerged as a significant barrier to adherence among patients on the CCMDD Programme, affecting both timely medication collection and consistent treatment in the Makhado Local Municipality. Some patients reported discontinuing ART or missing collection dates due to adverse reactions such as rashes and stomach cramps. In contrast, others sought assistance from private or traditional healthcare providers to manage these effects. These observations align with prior research indicating that severe side effects, including gynecomastia, metabolic complications, and concerns over body changes, can negatively influence adherence, particularly among women in HIV care (Sariah *et al.,* 2019:145). Furthermore, the sharing of ART medications with intimate partners complicates treatment continuity and undermines therapeutic outcomes (Nyamhanga *et al.,* 2017:11).

Within the SEM Model, these challenges are situated at the individual level, where knowledge, personal beliefs, and attitudes strongly shape health behaviour (Opio *et al.,* 2019:45). Fear of side effects and reliance on alternative healing practices can discourage engagement with formal treatment programmes. Strengthening patient education, providing culturally sensitive counselling, and offering ongoing support are essential strategies to help patients manage side effects effectively, maintain adherence, and enhance retention in the CCMDD Programme (Masilo, 2024:3).

4.4.3 Interpersonal-related factors of the CCMDD programme

Interpersonal relationships play a key role in patients' engagement with the CCMDD Programme, influencing both adherence and retention. A lack of support from family, friends, or partners often contributes to patients dropping out, as they may experience stigma, fear of revealing their HIV status, or minimal encouragement to stay on treatment. These observations align with research showing that social isolation, mistrust, and fear of judgment can hinder adherence, whereas strong support networks help patients maintain regular medication collection and remain engaged in care (Yakob & Ncama, 2016:77; Kisigo *et al.,* 2020:34).

4.4.3.1 Social influence and support system

Interpersonal and social support factors were found to play a critical role in adherence to the CCMDD Programme in the Makhado Local Municipality. Patients who lacked encouragement or guidance from family, friends, and intimate partners often struggled to maintain consistent ART adherence. Cultural and religious beliefs, including faith healing or advice from peers, sometimes discouraged continued treatment, as patients were led to believe they were cured or poisoned (Sariah *et al.,* 2019; Mukumbang *et al.,* 2017). These influences demonstrate how social and cultural norms can undermine treatment consistency, contributing to LTFU.

Moreover, support from family and friends reinforced adherence. Patients who received guidance, encouragement, and emotional support were more likely to remain engaged with treatment, maintain clinic visits, and adhere to medication schedules. The absence of such support often led to fear, stress, and feelings of isolation, negatively affecting health outcomes and increasing the likelihood of discontinuation. This finding aligns with prior research showing that social networks significantly impact HIV care engagement, emphasising the need for interventions that strengthen interpersonal support to improve patient retention and adherence (Yakob & Ncama, 2016; Mukumbang *et al.,* 2017). From a SEM Model perspective, these interpersonal influences interact with individual, community, and organisational factors, illustrating how social environments can either support or hinder adherence to HIV treatment.

Stigma and fear of disclosure emerged as significant barriers to adherence among patients on the CCMDD Programme on ART in the Makhado Local Municipality. Participants described avoiding treatment or missing medication collections because they were afraid of being seen by family, friends, or colleagues. The danger of this stigma is profound: when patients conceal their HIV status, they risk interrupting treatment, which can lead to poor viral suppression, increased risk of opportunistic infections, and the potential development of drug resistance. In some cases, patients may disengage entirely from care, becoming lost to follow-up, undermining both individual health outcomes and broader public health goals. Nice (2023:64) notes that stigma remains pervasive and discourages many individuals from seeking or adhering to treatment, while Masilo (2024:23) suggest that culturally sensitive approaches, such as integrating traditional healers, can reduce stigma and improve adherence.

From a SEM model perspective, the risks of stigma operate across multiple levels. At the individual level, fear of judgment can cause patients to skip medication or avoid collecting it altogether (Nice, 2023:64). Interpersonally, pressure from family, peers, and colleagues reinforces secrecy and isolation (Masilo,2024:60).At the community and cultural level, pervasive negative attitudes toward HIV create an environment where disclosure feels unsafe, further threatening adherence (Silvia, 2021:14; Manyaka, 2022:45; Dangerfield, 2025:78). Without interventions that address these social and structural barriers, stigma can have serious health consequences, making it a critical factor in understanding and improving retention in the CCMDD Programme.

4.4.4 Community-related factors

Community-related factors can pose significant challenges to ART adherence and may contribute to patient LTFU. Social networks, such as neighbourhoods, workplaces, and social groups, influence patients' ability to attend clinics regularly. In this study, two main issues emerged: the distance and time required to reach clinics, and the long waiting times once there. Both factors can discourage patients from keeping appointments and collecting medication, showing how community-level barriers can affect adherence and retention in ART programmes. This is dangerous because the patients can deteriorate and infect their sexual partners with HIV once the virus is detectable.

4.4.4.1 Distance and time

Long distances and travel times to collection points were reported as a significant challenge affecting adherence among patients on the CCMDD Programme in the Makhado local municipality. The participants indicated that travelling from home, college, or work to reach these points often disrupted their ability to collect medication on schedule. For some, the distance from their villages or workplaces impeded access. In contrast, for others, relocating or starting a new job meant that previously convenient pick-up points were no longer accessible, increasing the chances of missed collections. These findings are consistent with the observations of

Kim *et al.* (2021:13), who highlight that geographic barriers can hinder consistent treatment adherence.

These barriers have serious consequences for both patient health and programme management. Missed collections can result in unclaimed medication stockpiles at facilities, disrupt treatment continuity, and heighten the risk of poor health outcomes (Correia, 2024:33). Rural clinics often lack sufficient infrastructure, storage, and technological support to facilitate the programme effectively, further limiting patient access (Open Public Health Journal, 2024:16). Some patients may delay seeking medical care when unwell, relying solely on medication pick-ups, which can worsen health conditions and increase mortality (Correia, 2024:33). Choosing distant clinics to maintain privacy, combined with long waiting times and limited confidentiality, can amplify stigma and discourage consistent attendance (Mukumbang *et al.,* 2017:60). From a SEM Model perspective, these findings show that adherence is shaped not only by individual decisions but also by broader community, organisational, and structural factors, emphasising the need for interventions that improve accessibility and support at multiple levels.

4.4.4.2 Waiting time during script renewal

The study found that script renewal within the CCMDD Programme remains a significant challenge for HIV patients, posing a danger to treatment adherence and viral suppression. Patients continue to experience delays in prescription renewals, largely due to staff shortages and the dual responsibility of clinic personnel to attend to both CCMDD and non-CCMDD Programme patients. These operational inefficiencies discourage timely return visits, increasing the risk of treatment interruptions, elevated viral loads, and the development of drug resistance. This finding concurs with previous research, which emphasises that long waiting times, inadequate staffing, and insufficient patient support contribute to non-adherence and compromise the effectiveness of ART (Mashilo, 2022:58; Molete, 2023:9).

Framing the findings through SEM highlights the multiple layers that influence script renewal challenges. The SEM suggests that human behaviour is shaped by interconnected levels, ranging from individual factors to broader societal and policy contexts (Silvia, 2021:14; Dangerfield, 2025:78). At the individual level, patients' motivation and ability to manage prescription renewal are affected by delays and logistical difficulties. At the interpersonal and organisational levels, limited staff availability and inefficient clinic processes restrict support and access, undermining adherence (Mashilo, 2022:58; Molete, 2023:9). At the community and policy levels, systemic issues, including gaps in programme implementation and resource constraints, further exacerbate these barriers. Using the SEM perspective, script renewal challenges can be understood as multi-level threats to patient adherence and the overall effectiveness of the CCMDD Programme (Manyaka, 2022:45).

4.4.5 Health system-related factors

The study found that health system–related factors constitute a major barrier to HIV patients' access to ART. Within this overarching theme, three sub-themes were identified: medication shortages, poor data recording, and communication breakdowns. These findings indicate that systemic inefficiencies within clinics and healthcare facilities directly impede timely access to treatment, disrupt adherence, and increase the risk of treatment interruptions. Each sub-theme reflects a specific aspect of the health system that, if unaddressed, undermines the effectiveness of ART delivery and threatens patients' health outcomes and those of their communities.

Medication shortages at CCMDD pick-up points pose a serious challenge and a significant threat to the programme's effectiveness in the Makhado Local Municipality. Participants revealed that despite being registered, they often arrived at pharmacies to find no medication available, forcing some to return to clinics while others experienced prolonged treatment interruptions. Such experiences were echoed in accounts of missed doses, delayed SMS notifications, and eventual disengagement from the programme. These findings resonate with Mboweni (2024:1), who identifies shortages as a critical barrier to continuity of HIV care. They also concur with Moroko (2023:32), who shows that stock-outs at both clinics and pick-up points disrupt established medication routines. Sokhela (2024:18) further warns that these disruptions heighten the risk of viral rebound and drug resistance, while Walsh (2024:9) emphasises how repeated stock-outs erode trust in decentralised dispensing models*.*

At a population level, as Masevhege (2022:47) argues, instability in drug supply weakens efforts to achieve viral suppression and amplifies the risk of onward transmission. The findings, therefore, align closely with the wider literature, which positions uninterrupted access to medication as central to sustaining both individual and public health outcomes. The SEM model helps explain how medication shortages affect HIV care across several interconnected levels. At the policy and structural levels, weaknesses in supply chains and gaps in programme implementation continue to undermine drug availability, a challenge also noted by Manyaka (2022:45). At the organisational level, pharmacies and clinics struggle to coordinate effectively, thereby shifting pressure back onto already strained health facilities.

At the interpersonal level, patients lose confidence in consistent dispensing systems (Mashilo, 2022:58; Molete, 2023:9). At the individual level, disrupted routines make it harder for patients to adhere to treatment, leading, in some cases, to disengagement from care. As Silvia (2021:14) and Dangerfield (2025:78) point out, the SEM highlights that health behaviours are shaped by overlapping personal, institutional, and societal influences. From this perspective, CCMDD stock-outs are not just isolated logistical problems but systemic failures that weaken the programme’s central aim of ensuring accessible and sustainable HIV treatment.

Communication challenges within the CCMDD Programme contribute directly to missed medication pick-ups and prescription renewals, undermining patient adherence to ART, a finding that concurs with Wonci (2022:69) and Pillay (2022:27), who note that inconsistent or delayed communication in HIV programmes leads to missed doses and disengagement. Patients reported delays or the absence of SMS reminders in the Makhado Local Municipality, confusion over prescription statuses, and inconsistencies in record-keeping, all of which led to LTFU. Some patients were denied refills at pharmacies because they missed renewal reminders, while others were incorrectly classified as lost to follow-up even though they had collected their medication. Delayed or missing notifications left patients uncertain about when to collect treatment, disrupting their routines and adherence.

Mashilo (2022:29) further argues that interruptions in ART adherence increase the risk of viral rebound, drug resistance, and immune system deterioration, accelerating disease progression. Wicks (2023:43) adds that confusion or uncertainty in navigating health programmes erodes trust in the healthcare system, thereby discouraging sustained patient participation. These findings indicate that ‘consistent, timely, and clear communication is crucial for supporting patients on the CCMDD Programme and ensuring the effectiveness of decentralised ART delivery. Using the SEM model, communication breakdowns in the CCMDD Programme can be seen as affecting both the organisation and the individual: delays in messaging disrupt clinic operations. At the same time, patients struggle to adhere to treatment schedules, demonstrating how system-level gaps directly influence individual adherence (Silvia, 2021:14).

4.5 SUMMARY

This chapter presents the findings generated through the qualitative research approach. The qualitative approach consisted of key informant interviews with 34 patients enrolled in the CCMDD Programme on ART. The themes were identified and developed based on the statements that appeared most frequently in the collected data, and sub-themes were identified accordingly. Related sub-themes within each tool were then grouped to form themes. Similar themes from the different tools were then collated to form the overall themes as indicated (see Annexure A). Five major themes emerged from this study: Negative and positive factors of the CCMDD Programme. Data suggest that the CCMDD Programme has contributed to reducing LTFU among patients on ART by increasing adherence, as access to ART has become more convenient. Participants also indicated that the congestion in the facilities has reduced. Since patients were decanted and some collected their treatment at external pick-up points, the negative factors contributing to loss to follow-up included medication shortages, poor data recording, stigma, and issues related to disclosure. Participants were requested to suggest recommendations to improve the CCMDD Programme. Some of the strategies suggested by participants were similar; therefore, the results from all the participants have been combined and presented together. The next chapter presents a discussion of the findings.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

In the previous chapter, the data were analysed and presented, following which, themes were generated from the data. Coding was conducted, and subthemes were formulated to ensure the study's objectives were met. In this chapter, the researcher presents a summary of the main findings. These findings are directly related to the research question that guided the study and ultimately addressed the objectives and aim of the project. The study aimed to explore and describe the underlying factors contributing to high loss-to-follow-up rates among patients receiving ART through the CCMDD Programme at the Makhado Local Municipality, Limpopo Province, South Africa. Accordingly, this chapter summarises the main findings, draws conclusions, and provides recommendations for implementation by various stakeholders. Limitations were also included in this chapter. The following objectives guided this study:

- To describe factors contributing to LTFU among patients receiving ART through the CCMDD Programme in the Makhado Local Municipality.
- To explore the challenges faced by patients receiving ART in the CCMDD Programme that contribute to LTFU in the Makhado Local Municipality.
- To describe the impact of LTFU among patients receiving ART in the CCMDD Programme in the Makhado Local Municipality
- To provide actionable recommendations and insight for healthcare authorities, policymakers, and programme managers to enhance patients' retention and adherence within the CCMDD Programme in the Makhado Local Municipality.

5.2 RESEARCH DESIGN AND METHOD

Chapter 3 detailed the research design and methods for this study. The study employed an exploratory, descriptive, qualitative research design, which enabled the researcher to describe and explore patients' experiences of factors contributing to LTFU among patients in the CCMDD Programme.

The study was conducted at three clinics in the Vhembe District. Participants in the survey included males and females aged 18 years who were HIV positive, currently on ART, had defaulted HIV treatment in the past twelve months, were registered again with CCMDD, and were presently adhering to treatment at the three selected clinics, could make an independent, informed decision, and had signed a written consent form.

The study employed individual, face-to-face interviews to collect the data. The interviews followed a semi-structured format. The researcher also took field notes and made observations during the interviews. A voice recorder was used to record interviews conducted in English and Tshivenda

5.3 SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS

5.3.1 Objective no 1: Describe factors contributing to LTFU among patients receiving ART through the CCMDD Programme

HIV positive patients on the CCMDD Programme described the positive and negative factors contributing to LTFU. Patients explained that the CCMDD Programme had improved their adherence to treatment by making it easier for them to have access to their medication. They further explained that the CCMDD Programme had reduced overcrowding in the facilities. Patients reported that it was now convenient to use both internal (clinics) and external (pharmacies, supermarkets, and medical centres) pick-up points because the waiting period for patients on the CCMDD Programme had been shortened since its implementation. All of this contributes to retention in care among ART patients on the CCMDD Programme. However, negative factors contributing to LTFU, such as shortages of medication at pick-up points and limited understanding of how the CCMDD Programme works and of the script renewal processes, were identified as affecting retention in care among patients on the CCMDD Programme on ART. Patients who lacked social influence and support from their loved ones, including partners, friends, and family members, were more likely to experience demotivation concerning adhering to their treatment. This highlights the significant role that social influence and support play in retention of care, and the absence of these factors can contribute to LTFU among ART patients enrolled in the CCMDD Programme. Additionally, fear of stigma and negative judgment from the community and those around them also caused some participants to stop collecting their medication.

5.3.2 Objective no 2: Explore the challenges faced by patients receiving ART in CCMDD that contribute to LTFU

The participants reported that although they experienced positive outcomes from the CCMDD Programme, challenges contributed to their LTFU. Some difficulties encountered during data collection included patients travelling to their designated pick-up point to collect medication, only to find that it had not been delivered. Some of the challenges outlined included a lack of knowledge about script renewal, as participants were unaware that they must still visit the facility or clinic to renew their prescriptions after six months. Some of the participants also shared that they were told they would receive a text message when their medication was ready for collection, but they never received it. Others received the message late, after their medication was already finished.

5.3.3 Objective no 3: Describe the impact of LTFU among patients receiving ART in the CCMDD Programme

Participants with a history of LTFU were interviewed. They explained how defaulting on treatment had affected them. Most participants reported that not taking their medication had affected their physical well-being in several ways, including weight loss, reduced appetite, and reduced energy to perform daily activities. Other participants verbalised that they ended up developing tuberculosis, which resulted in their hospitalisation.

5.3.4 Objective no 4: Provide actionable recommendations and insight for healthcare authorities, policy makers, and programme managers to enhance patient retention and adherence within the CCMDD Programme

The participants suggested that healthcare authorities ensure medications are delivered on time to designated pick-up points, as delays in treatment delivery contribute to poor adherence and LTFU. For policymakers, it was stated that patients on the CCMDD Programme should have access to treatment at all pick-up points, provided they present evidence that they are collecting medication for the programme. Other participants recommended that cohort bloods and script renewals be conducted at all pick-up points to prevent patients from returning to the facility for script renewals. Some participants reported that programme managers can enhance patient retention by registering patient information and delivering medications to patients' homes with the assistance of community health care workers.

5.4 RECOMMENDATIONS

Based on the research questions and the discussion of this study, the study makes the following recommendations:

- **Strengthen communication systems:** Patients should consistently receive reminders for medication collection and prescription renewals. Using multiple channels, such as SMS messages, phone calls, or CHWs, can help ensure that no patient misses a scheduled pick-up in the Makhado Local Municipality.
- **Improve record-keeping and tracking:** Clinics in the Makhado Local Municipality and pick-up points should maintain accurate, up-to-date records of patient medication collection and adherence. Coordinated systems can prevent patients from being mistakenly classified as lost to follow-up.
- **Prevent medication stock-outs:** Supply chains need to be managed to guarantee that all pick-up points always have sufficient medication. Establishing emergency reserves and timely resupply mechanisms can reduce interruptions in treatment within the Makhado Local Municipality.
- **Build staff capacity:** Training for pharmacy and clinic staff on Programme procedures, patient follow-up, and communication methods is essential to effectively support patients in the Makhado Local Municipality.
- **Provide patient-centred support:** Patients across the Makhado Local Municipality should be educated on navigating the Programme, managing missed doses, and reporting challenges promptly to avoid lapses in treatment.
- **Address systemic challenges:** Interventions should target multiple levels, including clinic operations, organisational practices, and policy enforcement, to strengthen the overall functioning of the CCMDD Programme in the Makhado local municipality.

- **Engage the community:** Local organisations and CHWs in the Makhado local municipality should support patients, particularly in reaching pick-up points and maintaining adherence, helping to fill gaps where the health system alone cannot reach.

5.5 LIMITATIONS OF THE STUDY

This research, like many others, was subject to certain limitations that must be acknowledged. The study was confined to three clinics in the Makhado Local Municipality within the Vhembe District. While this enabled detailed contextual engagement, it limits the transferability of the findings to other geographical settings in which the CCMDD Programme may be implemented under different resource, cultural, or systemic conditions. Caution should therefore be exercised in applying these results beyond the study context.

The use of non-probability sampling constitutes another limitation. Participants were recruited based on eligibility and willingness to participate, which is appropriate in qualitative research but limits generalisability and introduces the possibility of selection bias. Individuals who chose not to participate or could not be reached may have had different perspectives and experiences, which were not captured.

The reliance on self-reported data also presents inherent constraints. Participants were required to recall and describe personal experiences related to ART interruption, stigma, mobility, and re-engagement with care. Given the sensitive nature of HIV, there is a risk of a social desirability bias, omission of uncomfortable details, or inaccuracies due to memory lapses. These factors may have affected the completeness or accuracy of some narratives.

A further limitation is the exclusion of other key perspectives. The study focused solely on patients who had defaulted and subsequently returned to care. It did not include insights from healthcare providers, CCMDD Programme personnel, or individuals who disengaged and did not return. As a result, the findings reflect only the patient perspective and do not account for operational, managerial, or systemic views on LTFU.

The use of multiple languages in the interviews introduces another constraint. Although participants were interviewed in their preferred languages and the transcripts were translated carefully into English, the possibility of losing contextual meaning and nuanced expression during translation cannot be discounted. Subtle differences in phrasing or cultural interpretation may have influenced the analysis.

Researcher influence is an additional consideration. The researcher's background in nursing and HIV care may have shaped the facilitation of interviews and the interpretation of data, despite the use of bracketing and reflexivity. Complete neutrality in qualitative research is difficult to achieve, and prior professional experience may subtly influence coding decisions or thematic emphasis.

The timing of data collection, conducted between March and May 2025, also limits the applicability of the findings over time. Factors influencing adherence and retention in the CCMDD Programme are dynamic and may shift due to policy changes, the health system restructuring, or broader socio-economic conditions. The findings reflect the realities of a particular period and may not account for subsequent developments.

Another limitation lies in the exclusion of adolescents and other key populations. The study included only adults aged 18 years and older. This omits the experiences of younger individuals and other groups that may face distinct adherence challenges, such as dependence on caregivers, mobility between households, or the demands of schooling.

The exclusive use of semi-structured interviews constitutes an additional limitation. Although this method offered depth and confidentiality, the absence of triangulation through other techniques, such as focus groups, observations, or document reviews, restricted opportunities to validate or compare data across sources.

Finally, although saturation was reported after 19 interviews and the sample was extended to 34 participants, the representation of specific subgroups may still be limited. Individuals who are highly mobile, employed, or living in remote rural areas may not have been adequately represented despite being at higher risk of disengagement. This may have narrowed the breadth of experiences reflected in the findings.

5.6 CONCLUDING REMARKS

This study determined the factors contributing to high LTFU of ART among patients enrolled in the CCMDD Programme in the Makhado Local Municipality, using a qualitative research design. Semi-structured interviews provided detailed information, which was analysed thematically to identify the main challenges affecting adherence. Findings were organised into thematic categories and discussed alongside the existing literature, showing barriers such as poor communication, medication shortages, limited access to collection points, and stigma. The study was framed using a SEM model, which depicted multiple levels at which these factors operate, from individual behaviour and interpersonal relationships to organisational processes and policy structures, thereby demonstrating the interconnected nature of adherence.

Integrating the findings with theoretical and literature-based perspectives shows that improving adherence requires interventions across all levels. Strengthening communication channels, ensuring reliable medication supply, expanding access points, and addressing stigma are necessary strategies to support patients. The study also recommends enhancing patient education, implementing structured communication systems, and developing support mechanisms that account for the social and structural contexts of CCMDD Programme participants. These findings contribute to understanding adherence within the CCMDD Programme and guide improvements in ART outcomes in similar settings, not just in the Makhado Local Municipality but across the broader province.

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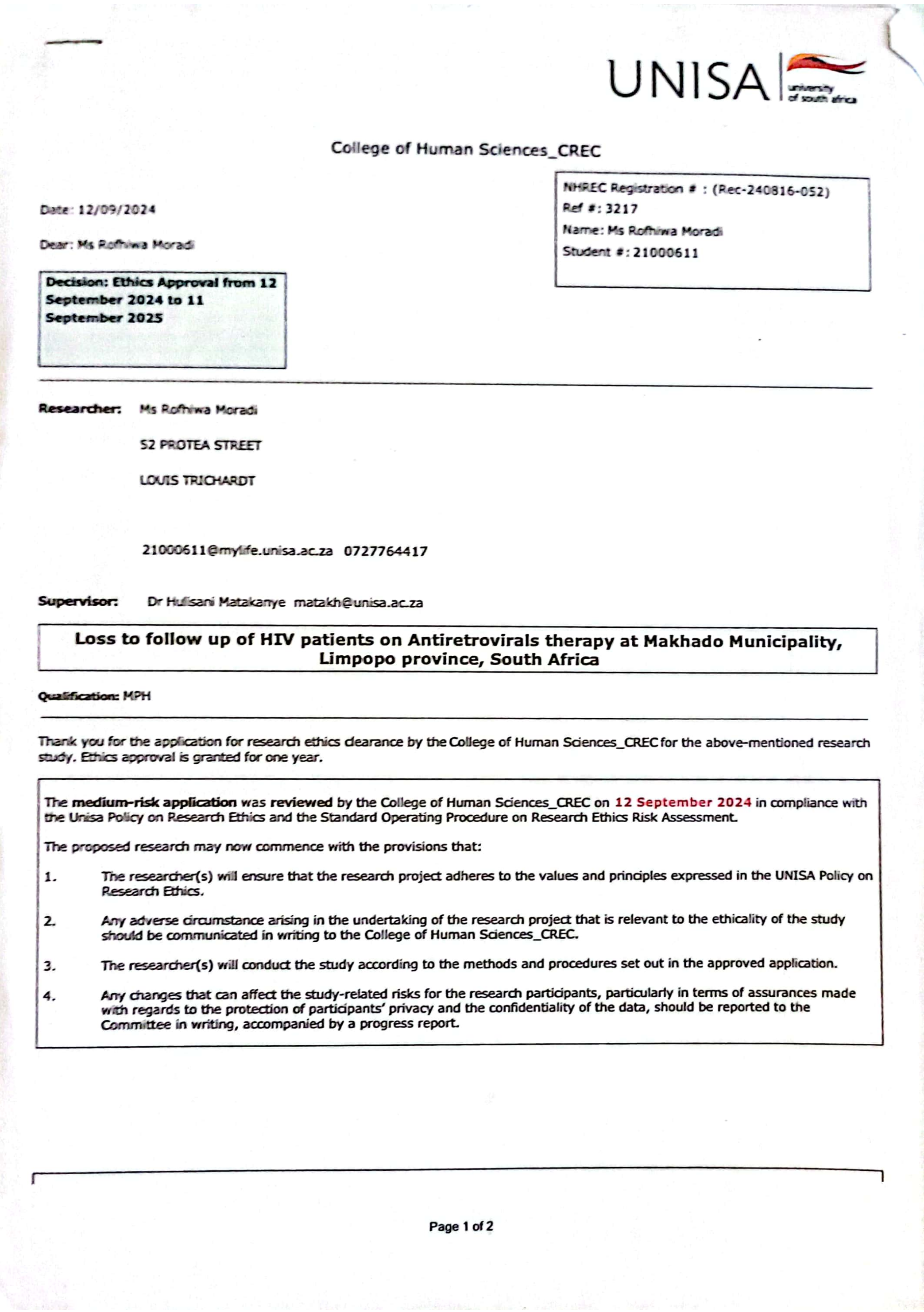
APPENDICES

APPENDIX 1: ETHICAL CLEARANCE CERTIFICATE



UNISA university of south africa

College of Human Sciences_CREC

Date: 12/09/2024

Dear: Ms Rofhiwa Moradi

NHREC Registration # : (Rec-240816-052)
Ref #: 3217
Name: Ms Rofhiwa Moradi
Student #: 21000611

Decision: Ethics Approval from 12 September 2024 to 11 September 2025

Researcher: Ms Rofhiwa Moradi
52 PROTEA STREET
LOUIS TRICHARDT

21000611@mylife.unisa.ac.za 0727764417

Supervisor: Dr Hulisani Matakanye matakh@unisa.ac.za

Loss to follow up of HIV patients on Antiretrovirals therapy at Makhado Municipality, Limpopo province, South Africa

Qualification: MPH

Thank you for the application for research ethics clearance by the College of Human Sciences_CREC for the above-mentioned research study. Ethics approval is granted for one year.

The **medium-risk application** was **reviewed** by the College of Human Sciences_CREC on 12 September 2024 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Human Sciences_CREC.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

Page 1 of 2

- The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

7. No field work activities may continue after the expiry date (**11 September 2025**). Submission of a completed research ethics progress report will constitute an application for renewal, for Ethics Research Committee approval.

Additional Conditions

1. Disclosure of data to third parties is prohibited without explicit consent from Unisa.
2. De-identified data must be safely stored on password protected PCs.
3. Care should be taken by the researcher when publishing the results to protect the confidentiality and privacy of the university.
4. Adherence to the National Statement on Ethical Research and Publication practices, principle 7 referring to Social awareness, must be ensured: "Researchers and institutions must be sensitive to the potential impact of their research on society, marginal groups or individuals, and must consider these when weighing the benefits of the research against any harmful effects, with a view to minimising or avoiding the latter where possible." Unisa will not be liable for any failure to comply with this principle.

Note

The reference number 3217 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Kind regards,

Khan

Prof Khatija Khan
Chair of College of Human Sciences_CREC
E-mail: khankb@unisa.ac.za

Professor Omwoyo Bosire Onyancha
Executive Dean / By delegation from the Executive Dean of College of Human Sciences_CREC
E-mail: onyanob@unisa.ac.za

APPENDIX 2: PARTICIPANTS INFORMATION

Request to participate in the study

Research title:

Factors Contributing to the High Loss to Follow-Up of Antiretroviral Therapy amongst Patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa

Researcher:

Moradi Rofhiwa Faith

Ethics clearance reference number: 3217

Research permission reference number (if applicable):

2024/03/05

Title: Factors Contributing to High Loss to Follow-Up of Antiretroviral Therapy amongst Patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa

Dear Prospective Participant

My name is Moradi Rofhiwa Faith, and I am conducting research with Dr Hulisani Matakanye, a senior lecturer in the Department of Health Studies, towards a Master of Public Health at the University of South Africa. The Unisa Division of Student Funding funds us. We invite you to participate in a study entitled "Factors contributing to high loss to follow-up of antiretroviral therapy amongst patients on the Central Chronic Medicine Dispensing and Distribution Programme in Vhembe district, South Africa."

WHAT IS THE PURPOSE OF THE STUDY?

The study's purpose is to provide insights into the challenges and obstacles faced by individuals in the Vhembe District of South Africa receiving antiretroviral therapy through the CCMDD Programme. By identifying these factors, the study aims to contribute to the development of more effective and patient-centred strategies to enhance ART adherence and retention in order to combat the HIV/AIDS epidemic in the region.

WHY AM I BEING INVITED TO PARTICIPATE?

Why did you choose this particular person/group as participants?

Your information was obtained with the facility manager's permission. You have been purposively selected to participate in this study because you are believed to possess expertise or experience relevant to the phenomenon under study, making your input valuable to the research. Your participation is entirely voluntary, and the researchers are contacting you to gauge your interest in contributing to the study. Your refusal to participate in this research will not be used against you. The information that you will provide will be treated as confidential. Your rights and well-being will be respected, which is to ensure that your participation is entirely voluntary. This study intends to include not more than 30 participants.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves a voice recorder and in-depth semi-structured interviews. The researcher will ask open-ended questions, such as: Which factors contribute to high loss to follow-up? You will be asked probing questions to elaborate on your answers. The interview will last for approximately 30 minutes. Indicate what sort of questions will be asked or show the questions in this document.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Your participation in this study is voluntary, and you are under no obligation to consent. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time without giving a reason.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The information collected from you will assist the researcher in understanding the factors contributing to high loss to follow-up of antiretroviral therapy amongst patients on the Central Chronic Medicine Dispensing and Distribution Programme in the Vhembe District, South Africa.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded, and no one will be able to connect you to the answers you give. Your answers will be assigned a code number, and you will be referred to by this code in the data, publications, and other research reporting methods, such as conference proceedings.

Your answers may be reviewed by people responsible for ensuring that research is conducted properly, including the transcriber, external coder, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for others to see them. While every effort will be made by the researcher to ensure that you will not be connected to the information that you share, the researcher is bound by the confidentiality clause in this research and will abide by that. Your anonymous data may be used for other purposes, such as a research report, journal articles and/or conference proceedings.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked cupboard/filing cabinet at UNISA for future research or academic purposes; electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval, if applicable. After five years, hard copies will be shredded and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

No payment or reward is offered for participating in this study. This will apply to all participants in accordance with the principle of fair procedures.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the Research Ethics Review Committee of Unisa and the Limpopo Department of Health. A copy of the approval letter can be obtained from the researcher upon request.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact the researcher via email at moradifaith@gmail.com regarding any aspect of this study by email at moradifaith@gmail.com.

Should you have concerns about the way the research has been conducted, you may contact Dr H Matakanye by email at matakh@unisa.ac.za.

Regards,

Ms Faith Moradi

APPENDIX 3: CONSENT FORM

CONSENT TO PARTICIPATE IN THIS STUDY

Research title:

Factors Contributing to High Loss to Follow-up of Antiretroviral Therapy amongst Patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa

Researcher:

Moradi Rofhiwa Faith

I, __________________ (participant name), confirm that the person asking my consent to take part in this research has informed me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview conducted by the researcher.

I have received a signed copy of the informed consent agreement.

Participant’s Name & Surname………………………………………… (please print)

Participant’s Signature…………………………………………..Date…………………

Researcher’s Name & Surname………………………………………(please print)

Researcher’s Signature…………………………………………..Date…………………

APPENDIX 4: PERMISSION LETTER

Permission letter to conduct research

Research title: Factors Contributing to High Loss to Follow-Up of Antiretroviral Therapy amongst Patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa

Researcher:

Moradi Rofhiwa Faith

Request for permission to conduct research at Makhado clinics, Vhembe District, South Africa

Limpopo Department of Health

Private Bag X9302

Polokwane

0700

015 293 6000

2024/09/30

Dear Sir/Madam,

I, Rofhiwa Faith Moradi, a student researcher, am conducting research with Dr Matakanye H, a senior lecturer in the Department of Health Studies, towards a Master of Public Health degreeat the University of South Africa, funded by the Unisa Division of Student Funding. We are requesting permission to conduct a study entitled, "Factors contributing to high loss to follow-up of antiretroviral therapy amongst patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa."

The study aims to identify the factors contributing to high loss to follow-up among patients enrolled in the Central Chronic Medicine Dispensing and Distribution Programme. Three facilities from the Makhado local area that were selected by the researcher have CCMDD patients who are on HIV treatment, have a history of defaulting on HIV treatment in the past twelve months, have returned to care, and are adhering to their treatment. The study will involve semi-structured interviews guided by a framework aligned with its objectives. All the participants who sign consent forms will be included in the study. Probing questions will be developed to get information from the participants. A voice recorder will be used to record the conversation between the researcher and the participants. Field notes will also be taken during data collection. The researcher will collect the data and ensure its quality and trustworthiness are maintained. Through this study, the researcher will document the findings that will contribute to reducing loss to follow-up and improving retention in care, benefiting the Department of Health.

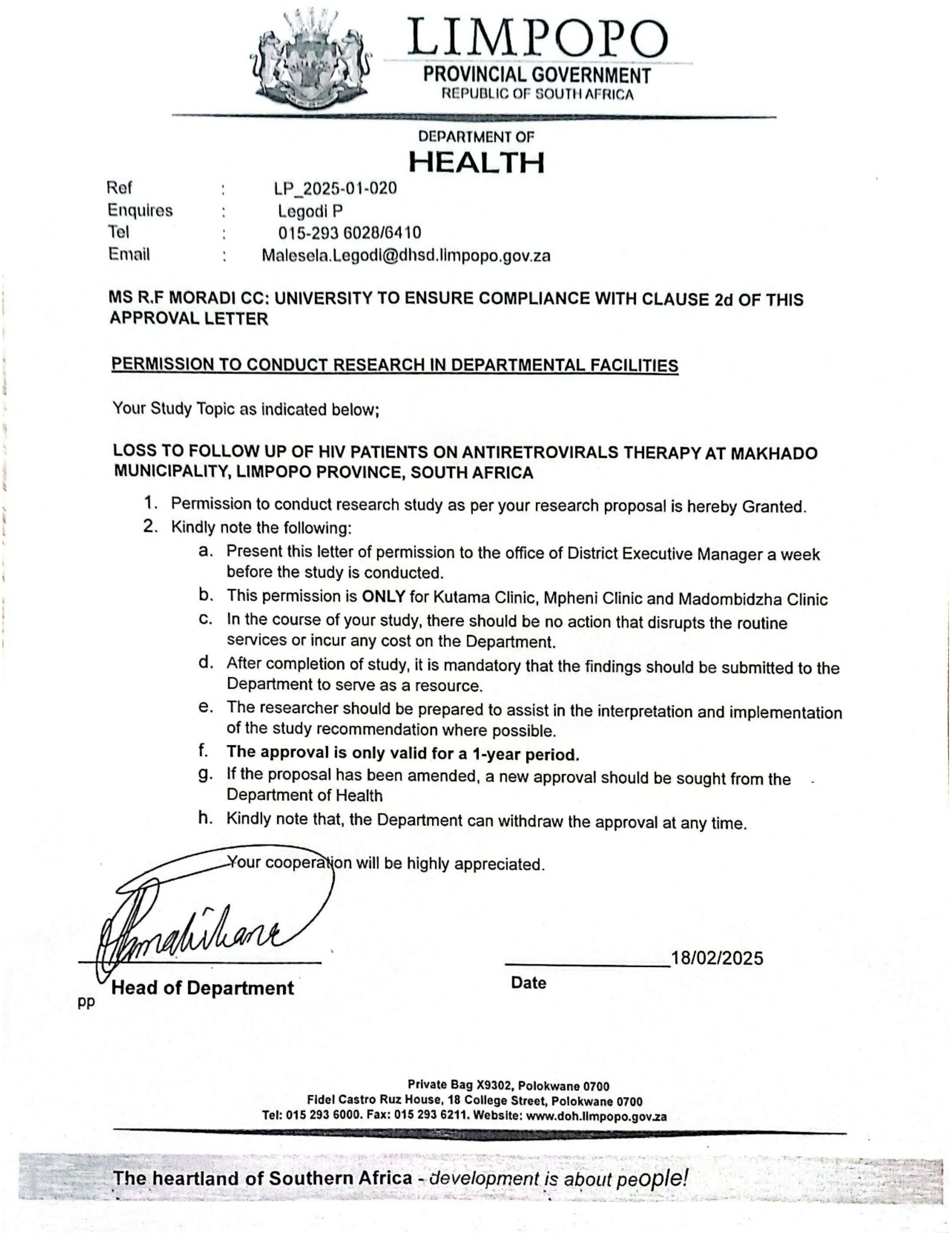
Yours sincerely,

Moradi R.F.

Masters Student

072 776 4417

APPENDIX 5: APPROVAL LETTER FROM THE LIMPOPO DEPARTMENT OF HEALTH



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
HEALTH

Ref : LP_2025-01-020
Enquires : Legodi P
Tel : 015-293 6028/6410
Email : Malesela.Legodi@dhsd.limpopo.gov.za

MS R.F MORADI CC: UNIVERSITY TO ENSURE COMPLIANCE WITH CLAUSE 2d OF THIS APPROVAL LETTER

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

LOSS TO FOLLOW UP OF HIV PATIENTS ON ANTIRETROVIRALS THERAPY AT MAKHADO MUNICIPALITY, LIMPOPO PROVINCE, SOUTH AFRICA

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 office of District Executive Manager a week before the study is conducted.
   b. This permission is **ONLY** for Kutama Clinic, Mpheni Clinic and Madombidzha Clinic
   c. In the course of your study, there should be no action that disrupts the routine services or incur any cost on the Department.
   d. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   e. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   f. **The approval is only valid for a 1-year period.**
   g. If the proposal has been amended, a new approval should be sought from the Department of Health
   h. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

pp **Head of Department**

18/02/2025
Date

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

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APPENDIX 6: PERMISSION LETTER

Permission letter to conduct research

Research title: Factors Contributing to High Loss to Follow-Up of Antiretroviral Therapy amongst Patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado local Municipality, in Limpopo province, South Africa.

Researcher:

Moradi Rofhiwa Faith

Request for permission to conduct research at Makhado Clinics, Vhembe District, South Africa.

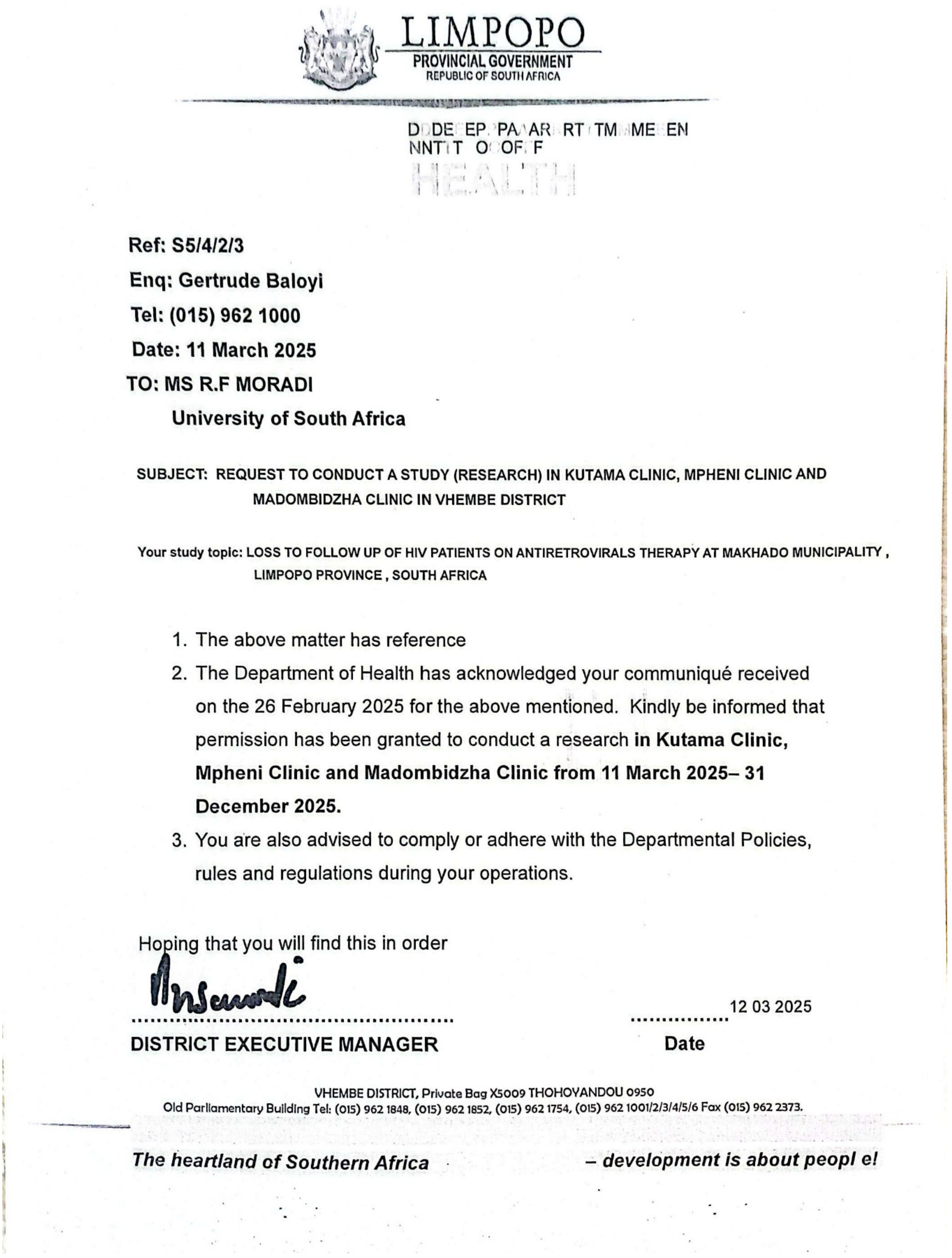
Limpopo Department of Health
Private Bag X5009
Thohoyandou
0950
015 293 6000
2025/02/25
Dear Sir/Madam

I, Rofhiwa Faith Moradi, a student researcher, am conducting research with Dr Matakanye H, a senior lecturer in the Department of Health Studies, towards a Master of Public Health degree at the University of South Africa, funded by the Unisa Division of Student Funding. We are requesting permission to conduct a study entitled, “Factors contributing to high loss to follow-up of antiretroviral therapy amongst patients on the Central Chronic Medicine Dispensing and Distribution Programme in Makhado Local Municipality, Limpopo Province, South Africa.”

The study aims to determine the factors contributing to high loss to follow-up in antiretroviral therapy among patients enrolled in the Central Chronic Medicine Dispensing and Distribution Programme. Three facilities from the Makhado local area that were selected by the researcher have CCMDD patients who are on HIV treatment, have a history of defaulting on HIV treatment in the past twelve months, and have returned to care and are adhering to their treatment. The study will involve semi-structured interviews guided by a framework aligned with its objectives. All participants who sign consent forms will be included in the study. Probing questions will be developed to get information from the participants. A voice recorder will be used to record the conversation between the researcher and the participants. Field notes will also be taken during data collection. The researcher will collect data to ensure and maintain its quality and trustworthiness. Through this study, the researcher will document their findings, which will contribute to reducing loss to follow-up and improving retention in care, benefiting the Department of Health.

Yours sincerely,

Moradi R.F.
Masters Student
072 776 4417



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
HEALTH

Ref: S5/4/2/3
Enq: Gertrude Baloyi
Tel: (015) 962 1000
Date: 11 March 2025
TO: MS R.F MORADI
University of South Africa

SUBJECT: REQUEST TO CONDUCT A STUDY (RESEARCH) IN KUTAMA CLINIC, MPHENI CLINIC AND MADOMBIDZHA CLINIC IN VHEMBE DISTRICT

Your study topic: LOSS TO FOLLOW UP OF HIV PATIENTS ON ANTIRETROVIRALS THERAPY AT MAKHADO MUNICIPALITY , LIMPOPO PROVINCE , SOUTH AFRICA

1. The above matter has reference
2. The Department of Health has acknowledged your communiqué received on the 26 February 2025 for the above mentioned. Kindly be informed that permission has been granted to conduct a research **in Kutama Clinic, Mpheni Clinic and Madombidzha Clinic from 11 March 2025– 31 December 2025.**
3. You are also advised to comply or adhere with the Departmental Policies, rules and regulations during your operations.

Hoping that you will find this in order

.... 12 03 2025

DISTRICT EXECUTIVE MANAGER **Date**

VHEMBE DISTRICT, Private Bag X5009 THOHOYANDOU 0950
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373.

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APPENDIX 8: INTERVIEW GUIDE

Data collection tool

A. DEMOGRAPHIC INFORMATION

1. GENDER

- Male
- Female

2. AGE

- 18 – 49 years
- 50 years and older

3. WORK INSTITUTION

- Private
- Government
- Unemployed

4. MARITAL STATUS

- Single
- Married
- Window

B. QUESTIONARES

1. How long have you been diagnosed with HIV?
    - Less than five years
    - Less than ten years
    - More than ten years
2. How long have you been decanted?
    - Less than five years
    - More than five years

3. Kindly share your experience regarding ART loss to follow-up in the CCMDD Programme?
    - Can you please elaborate?
4. What are the factors contributing to loss to follow-up among patients receiving ART on the CCMDD Programme in the Makhado local area?
    - Why?
5. Which challenges faced by patients receiving ART in the CCMDD Programme contribute to loss to follow-up?
    - Could you tell me more about that?
6. What is the impact of loss to follow-up among patients receiving ART in the CCMDD Programme at the Makhado local area?
    - How do you know?
7. What are the recommendations and insights for healthcare authorities, policymakers, and programme managers to enhance patient retention and adherence within the CCMDD Programme in the Makhado local area?
    - When do you think they should be implemented? Why?

APPENDIX 9: PRESENTATION OF FINDINGS FROM THE QUALITATIVE DATA ANALYSIS

Tool	**Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics**		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
Positive factors of CCMDD	CCMDD improves patients' adherence to treatment	6. I think there is no need to improve this programme. The way we are using Clicks is good. 10: I recommend that the strategy of getting messages continue. 11: ART and CCMDD Programme saved mylife 15: Since I started being on CCMDD, I see a lot of improvement. Even going to collect my medication is no longer a burden. I think they have done a lot. I don't know about others, but I am happy.	111 11 11 111
Negative factors of the CCMDD Programme	Shortage of medication	16: What happened is mmh I am collecting my parcel at the Mutakalo Medical Centre, so there were months where I would go there and I would not get my medication. 18: I am taking my medication. I didn't go to the medical centre; instead, I came to the clinic for my treatment. I had a problem with going to the medical centre and	111 111 111

Tool	**Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics**		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		finding that my medication was not there. 28: I used to get parcels at the society (external pick-up point) via outreach, then one day I went there and found that my treatment was not there, I was told to go to the clinic. 29: I would go to the Rite Chemist and find that my medication was not there. They told me to wait for the message. I waited until I gave up.	1
	Long waiting period	7: The challenge is that we get used to coming only to pick up the parcel, and when we are supposed to renew our prescription, we get too lazy to go through the process of standing in a queue and retrieving files like any other patient. 9: I stopped coming because of the laziness of waiting to be assisted. I was told we wouldn't have to stand in line. 9: They should hire enough staff for	11 111 111

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		us who prefer the internal pick-up point, because we just sit there, although we don’t take out files and are on the CCMDD Programme. The people assisting us are also busy with other duties, such as retrieving files for other patients, so we still have to wait. When we see them going up and down, we feel like they are not working. 21: My main challenge is the waiting time at the clinic and having to go back to renew the script, and waiting in those long queues with everyone, discourages me. 21: I recommend that they have a designated consulting room for the daily renewal of CCMDD scripts specifically for patients on CCMDD. Even at the pharmacy, blood collection, and script renewal should be done. 29: I would go to the Rite Chemist and find that my medication was not	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		there. They told me to wait for the message. I waited until I gave up.	
	Poor data recording	6: I went to Clicks one time to collect my medication, but that time I had not received any message; therefore, they told me that I did not renew my script. 7: I was told that loss to follow is when we don't fetch our medication at our pick-up points. I was called and told that I was a loss to follow, only to be told later that I had collected my parcel, but it was not recorded. 7: I think what contributed was that my information was not updated in my file. 28: I can't say there was an impact. I was still getting medication, just that now I had to wait in a long queue like everyone else.	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
	Communication breakdown	2: CCMDD wastes money. I used to go to my pick-up point (Outreach) at the society. When I got there, they told me to go to the clinic, but they did not have my medication with them. That was when I realised that I should go to the clinic rather than to the external pick up point of the CCMDD Programme, since there I would never get the medication. They always say it's not there, although I had received a message, they will still say my medication is not there. I got a message from Clicks that I am supposed to renew my script at the clinic but I never renew on time. 16: I was not receiving the message as promised, and sometimes the message comes late. 22. I was told that my medication had not arrived yet I should wait for the message. I waited. Never got a	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		message. 23: Sometimes I receive the message to go and collect medication late when my medication is already finished.	
	Understanding of the CCMDD Programme	1. I stopped with the treatment because I thought I was cured. 1: I was in Gauteng. My daughter had just delivered a baby, and I had to go there to help her with her newborn, so because of that, I couldn't get my medication. I didn't know how things worked that side. 12: I was not comfortable coming to the clinic because I didn't know how things worked here. 12: Not having knowledge and experience was a challenge. 28: I did not have knowledge of how the CCMDD Programme works.	111
	Distance and	4. They should make many places	

Tool	**Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics**		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
	time	for pick-up points for medication for the CCMDD Programme because there are people who travel long distances to go to their pick-up points. This can help a lot. 8: I can see eee…I did not have enough time to go to the pick-up point. It's far. I sell vegetables. If I don't go to the market my children will not get bread. 14: Distance contributed. 14: My challenge was that I used to move from one area to another, and I couldn't go to any Spar pharmacy for treatment. I had to come to the one here at home. 14: It would be easy if we could leave our addresses and they could bring the treatment to our homes and send a message that they are coming or call us. Also, allow us who are travelling to access our CCMDD parcel where we are.	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		19: My pick-up point was at home, so I would have to travel back home when I was at college. 23: Mmm…A challenge I have experienced in my work. I recently got a job that is located far from where I get my treatment after registering for CCMDD. I stay at work.	
	Knowledge on script renewal	2: I was never informed. I didn't know what should happen to me . Even issues of blood, I don't know how it works, how to get my results, when to get them, or what they mean. That is why I am asking you, how come I am no longer getting my CCMDD parcel? 28: I was told that I should go back to the clinic because my medication is not there at the pick-up point. I started going to the clinic again to collect treatment there; I honestly	

Tool	**Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics**		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		didn't know that I had to renew the script again, so I continued with the clinic visits.	
	Side effects	9: I had developed a rash that made me stop the treatment and start going to a private doctor. 10: I was getting stomach cramps after taking the medication. 11: When I started taking the medicationt I was always feeling tired and sleepy, I spoke to the sisters then they advised me that I should be strong because this is how the treatment is at the beginning. 13: I was feeling weak most of the time and had a loss of appetite. 13: Eee. I had to stop because I suspected that it might be due to an overload of medication in my system and that it might need to be flushed out. 20: The medication that I get is not	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		always the same. Some tablets are white, while others are pink. The white ones give me headaches and make me nauseated. So I stopped taking them for my wellness sake. 22. My legs started getting swollen after some time.	
	Lack of support	3: The challenge I came across was a lack of good advice from family and friends. My husband is not receiving treatment. He refuses to come and be tested. He doesn't believe that I have a virus. 30: I felt depressed and angry sometimes. I felt like no one is supporting me with my life. I was tired of medication too.	1 1 11
	Social influence	3. I had received healing and deliverance from the church. 30. My friend took me to consult someone, I was told	1 11 1

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		that I don't have HIV it was just poisoning (*tshiliso*). 3: It was mostly caused by people and influencing each other about taking treatment. When you are taking your treatment, you find someone telling you that it has been a long time that you have been on treatment, it is better for you to stop because chances are your virus is no longer there. Then I stopped. 30: One sister came to my family. She spoke to me and my aunt about the importance of taking ARVs . Since that day, I think I have understood it. I also learned from that conversation that some of the rashes that I normally get might be due to the fact that I stopped with the treatment. 31: I was diagnosed while pregnant. My husband is not on treatment. So, I never told him about my status. When he was around, I couldn't go	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		to the pharmacy to pick up my medication. I was also afraid of being seen.	
		21. When it was time for me to go back to renew the script, I used to forget to go to the clinic. 25. I usually come home tired from my work, and I am supposed to take my medication at 21h00 daily, which is Diabetes and HIV treatment. By that time, normally I am asleep, or some days I forget.	111
Environmental factors	Stigma and disclosures	9: I didn't like people seeing me coming to the clinic on time, and again, I became embarrassed and angry after getting a visit from a community health care worker. I didn't like it. 19: I shared a room with someone, so I was afraid that they would see that I am taking ARVs. Maybe find them by mistake or something. 23: I stayed at work. My boss doesn't	11 1 11

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		know of my status.: I didn't want to risk losing my job. I only go to the pharmacy when I come back home once a month. 24: I am collecting my medication at the abandoned crèche in my village. When I first arrived, we would get our medication one by one, like buying bread in a tuckshop. Going home, my concern was that I felt like all those people who were there had HIV. 24: I didn't know that there were other chronic conditions involved in CCMDD. My challenge was fear. I feared that everyone in my village would know that I am also HIV positive. That was when I decided to stop going there. 30: I don't know ey…Maybe my challenge was seeing someone coming to fetch medication. I felt like why should I…Is not like I was sick. 31: My challenge was having to hide	

Tool	Key informant interview on contributing factors to loss to follow-up of HIV positive patients on the CCMDD Programme within the three selected clinics		
Theme	**Sub-theme**	**Code from participants response**	**Frequency**
		going to the pharmacy all the time until I learned that I can change the pick-up point.	
		26: I was born with HIV 18 years ago, so I don't remember not taking treatment until I stopped taking treatment sometime in January 2023, I think. I just got lazy sometimes. I have those tablets at home. They are a lot. 27: I felt tired of the ups and downs of going to collect medication, plus taking medication daily too. I used to feel that I was too young for all this. 30: I am told that I was born with HIV in 2005. I used to fetch my medication and just leave it, and not take it. 30: I felt depressed and angry sometimes. I felt like no one was supporting me in my life. I was tired of medication too.	1