

MIN-DISSERTATION

**FACTORS CONTRIBUTING TO MISSED CLINIC APPOINTMENTS BY
PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT A
HEALTH CENTRE IN CAPRICORN DISTRICT LIMPOPO PROVINCE,
SOUTH AFRICA**

by

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MINI-DISSERTATION

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DEDICATION

To the Almighty God, whom I serve, I would like to thank you for the spirit of perseverance through the entire research process. To my late grandma, Mrs Matsawela Joyce Manyama, the woman who believed in me and prayed for my prosperity in education. And to all my support systems, without which I would not have lasted through the research process.

DECLARATION

I declare that **Factors Contributing To Missed Clinic Appointments By People Living With Hiv/Aids On Antiretroviral Therapy At A Health Centre In Capricorn District Limpopo Province, South Africa** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

Marule K.Y

Full names

20/12/202

Date

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- The Limpopo Province: Department of Health, for facilitating my proposal registration at the National Health Research Database (NHRD) and permitting me to conduct the study.

ABSTRACT

Topic : FACTORS CONTRIBUTING TO MISSED CLINIC APPOINTMENTS BY PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT A HEALTH CENTRE IN CAPRICORN DISTRICT LIMPOPO PROVINCE, SOUTH AFRICA

Background: The approach of the South African healthcare sector concerning the management and reduction of queues at clinics throughout the country was developing a system where patients made appointments. The focus of this study was on patients undergoing antiretroviral therapy and how they have been reported to be missing their appointments. When patients miss their antiretroviral therapy appointments it has a negative impact on operations at the clinic as well as its finances.

Aims : The aim was to investigate the contributing factors to missed appointment visits of People Living With HIV for antiretroviral therapy at a Health Centre in Capricorn District, Limpopo.

Methodology: A quantitative, cross-sectional descriptive study design was used to achieve the aim of this study and its objectives.

Results: one hundred and eighty eight participants took part in the study. Majority were males and females. Participants had various reasons for missing appointments, such as the lockdown restrictions (24.4%), the long distance from the healthcare facility (23.9%), and a lack of money for transportation (9.5%). A significant relationship was observed between the year of missed appointments and reasons for missing appointments with p values of 0.01 and 0.03 respectively. The study concludes that most antiretroviral therapy patients miss clinic appointments due to lockdown restrictions.

Keywords: Antiretroviral therapy; Healthcare; People living with HIV; making appointments.

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DEFINITION OF KEY CONCEPTS

- Missed clinic appointments** Missed appointment refers to when a patient fails to be present at the facility on the scheduled appointment date without any arrangement or rescheduling. The missed appointment visits are classified into early missed appointments (2 to 3 weeks) and late missed appointment visits (2 to 3 months) (Macheka, 2016). In this study, missed appointments refer to the unavailability of People Living with HIV/AIDS (PLWA) for Antiretroviral Treatment (ART) at a Health Centre for a period of 2 weeks to a month.
- Contributing Factors** Contributing factors are those issues that cause a specific outcome. In this study, contributing factors mean the reasons or factors that result in PLWH missing their ART appointment.
- Antiretroviral Therapy (ART)** Antiretroviral therapy (ARV) is a therapy that is used to suppress HIV infection in the human body (Davis, 2017). In this study, ART refers to a therapy that is to be given to a patient at the Health Center during clinic visits.

ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral
DOH	Department of Health
HAART	Highly active antiretroviral therapy
HIV	Highly active antiretroviral therapy
NGO	Non - Governmental Organisation
PLHIV	People Living with HIV
SA	South Africa
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The South African healthcare sector developed a system where People Living With HIV (PLWHIV) undergoing antiretroviral therapy (ART) are required to make appointments at clinics. Through this system, long queues are avoided and each clinic can provide its services more efficiently. According to Lowane and Lebeso (2022:2), healthcare workers have been applying various strategies aimed at ensuring that ART patients honour their appointments, such as “physical reminders by community healthcare workers during their support visits, enrolling patients in support groups, and recording their return dates on their appointment cards”. Mulqueeny and Taylor (2022) are of the notion that this system is the most widespread in South Africa and it has proven to be the most successful over the past 20 years of operation. However, at the operation level, there are challenges concerning the consistency of PLWHIV when it comes to honouring their appointments (Nhandara, Ayele, Sigwadhi, Ozougwu & Nyasulu, 2020).

Missed appointments have operational and financial implications for the healthcare system resulting in a health impact on patient groups who have unmet sufficient health needs (Ellis *et al.*, 2017). The World Health Organization [WHO] (2021) has recently published guidelines regarding the delivery of ART, and care of PLHIV. Amongst the list of WHO (2021), recommendations on encouraging frequent visits between three to six months have been stipulated following the global concerns about missed appointments for PLWH. For example, missing appointments by PLHIV has been reported as a concern in Canada. PLWH reported missing appointments for ART due to changes in illicit drug use regardless of the treatment model, and that these changes in their drug use patterns and HIV treatment were shaped by social-structural-level factors (such as housing vulnerability, lack of agency) that are known to impact ART outcomes (Gamba, 2021).

In the Sub-Saharan region, there has been a significant development in the reduction of morbidity and mortality rates due to increased access to ART (Leach-Lemens, 2021). Leach-Lemens (2021) noted that the development has encouraged other African countries like Zambia, Uganda, Malawi, and South Africa to speed up access to ART through frequent visits by PLWH. However, the region continues to experience

challenges with People Living with HIV/AIDS who do not disclose their status, this means such people cannot start with the treatment, thus making it difficult to initiate ART appointment visits with the healthcare providers. Shumba, Atuhaire, Impact, Atukunda, and Memiah (2013) reported a significant correlation between missed appointments and adherence to ART. While Cairns (2021) noted a significant impact of frequent visits to the clinics which includes reduced morbidity and mortality amongst PLWH. Most of the patients in Zambia and Malawi were found to be stable, with non-complicated HIV infection due to frequent visits to the clinic that ensured an effective supply of Antiretroviral Therapy (ART), especially since the visit in their clinic was done every six months instead of every three months or less (Cairns, 2021). However, Leach-Lemens (2021) noted that a stable HIV/AIDS condition was achieved because the health centres received additional support to help them stick to three-monthly or six-monthly appointment intervals and to strengthen the ART supply chain, but the patients themselves did not receive any additional support.

According to the National Consolidated Antiretroviral Therapy (ART) guidelines in South Africa in 2015, it is recommended that all people who tested positive for Human Immunodeficiency Virus (HIV) must have access to Antiretroviral Therapy soon after knowing their status (Department of Health, 2015). ART coverage in South Africa, especially in the primary healthcare clinics, is high but adhering to the monthly appointment visit dates is a serious problem. According to Macheke (2016), missed appointment visits could be classified into early missed appointments (2 to 3 weeks) and late missed appointment visits (2 to 3 months). Missing appointment visits beyond 3 months require the client to be removed from the ART program following intensive track and tracing using their telephone and cellphone number, traceable address and referral to the Community Health care workers. When a patient is removed from the program, Tier.net system, they are regarded as a confirmed loss to follow up (Macheke, 2016).

Carter (2010) is of the notion that future studies needed to focus on identifying the barriers to adhering to a visit schedule so that interventions and support services can be directed to those at risk in Limpopo. However, over a decade later, there are still limited studies to determine the barriers including the contributing factors to missed appointments by PLWHIV. The current study took place in a Health Centre, which has a total number of 1051 patients who missed their appointments between October 2019 and September 2020 (Health Center register, 2020). This study aimed at investigating

factors contributing to missed appointment visits by PLWHIC on ARV therapy at Rethabile Health Centre.

1.2 RESEARCH PROBLEM

Rethabile Health Centre provides comprehensive health care services to patients including those diagnosed to be HIV positive. HIV-positive patients are initiated on treatment and given follow-up appointments at the Clinic to prevent HIV-related complications and to improve their health status. The researcher who is a qualified clinical nurse practitioner working as a nurse mentor for a Non-Government Organisation (NGO) stationed in the facility has noted during support programs to the Clinics and through monthly statistics that the patients miss their appointments and visits for collection of medication monthly. PLHIV attends the clinic on scheduled days for ART collection and follow-up.

Patients miss doses and this negatively impacts medication adherence. Non-adherence results in virological failures which relatively lead to regimen changes. Regimen changes are not cost-effective for the government healthcare sector because they are expensive. Again, there is too much pill burden on a patient taking regimen 2 than on a patient taking regimen 1. Non-Adherence can also cause opportunistic infections which can lead to death such as Tuberculosis (Laher, Richards & Venter, 2021).

In Rethabile Health Centre, it has also been identified that even though patients miss their appointment visit for the first 28 days, the majority do come to collect their medication before 3 months to prevent being taken out of the electronic system and is regarded as confirmed lost to follow up. Part of a healthcare professional's responsibility in the Clinic is to ensure that HIV-positive patients remain in care and adhere to their appointment visits to the clinics. This also includes daily tracking and tracing of those that missed their appointment visit to remind them of their appointments. Despite putting in place the tracking system where patients are tracked and traced using either their telephone numbers or using the address, the problem persists in the facility. This is seen as a serious problem as it could lead to patients developing opportunistic infections or death due to unsuppressed HIV viral loads (Davey, Abrahams, Feinberg, Prins, Serrao, Medeossi & Darkoh, 2018). This motivated the researcher to investigate the factors contributing to missed appointment

visits for ART patients at a Health Centre in Capricorn District, Limpopo Province, South Africa.

1.3 PURPOSE OF THE STUDY

1.3.1 Research aim

This study aims to investigate the contributing factors to missed appointment visits of PLHIV for antiretroviral therapy at a Health Centre in Capricorn District, Limpopo Province, South Africa.

1.3.2 Objectives

- To identify contributing factors to missed appointment visits of PLHIV for Antiretroviral Therapy.
- To describe contributing factors to missed appointment visits of PLHIV for Antiretroviral Therapy.
- To establish the association between demographic factors and contributing factors.

1.4 RESEARCH METHODOLOGY

This is a brief discussion of the methodology followed by the researcher to achieve the objectives of this study, the details are shared in chapter 3.

1.4.1 Research design

A research design is an outline of the chosen methods and techniques and why those specific methods and techniques were chosen by a researcher (Vizcarguenaga-Aguirre & López-Robles, 2020). Accordingly, a study design is a structured approach followed to answer a particular research question (Joubert & Ehrlich, 2014). This quantitative study applied a cross-sectional descriptive research design to achieve the research objectives. A cross-sectional descriptive research design entails the examination of a group of subjects simultaneously aimed at understanding a phenomenon of interest across different stages of development or levels of education or severity of illness and etcetera (Grove, Gray, & Burns, 2015).

1.4.2 Sampling

Simple random sampling was used to select a sample from the population, where each member of the population had an exactly equal chance of being selected (Lauren Thomas, 2020). The researcher used the hat method and wrote numbers on a piece

of paper from 1 to 350, the paper was then cut into 350 pieces with numbers on them. The papers were put into a bowl where the researcher was blindfolded when pulling out 188 pieces of paper, those were the participants who formed part of the study as the final sample.

1.4.3 Data collection

The data was collected through the use of a self-designed questionnaire that could be filled out by participants at the facility or home and returned for submission.

1.4.4 Data analysis

The researcher applied descriptive statistics with assistance from statisticians at the University of Limpopo. The scrutinized data was presented in table, figures and narrative format. Results were presented in tables, bar graphs, pie charts and box plots. Furthermore, the descriptive statistics included standard mean, and standard deviation, frequencies of common factors influencing failure to honour the appointment.

1.4.5 Reliability, validity, and objectivity

Reliability and validity are used as a way of evaluating the quality of a study and they focus on measuring the consistency of a data collection instrument and its accuracy, respectively (Heale & Twycross, 2015). Objectivity is concerned with limiting bias due to a researcher's personal feelings about the phenomenon and concepts investigated (Nahrin, 2015). In this study, the researcher took the necessary steps and precautions to ensure that there is an acceptable level of reliability and validity while ensuring that the interpretation of the data is solely based on the facts presented by the results.

1.4.6 Bias

The researcher took the necessary actions to ensure that there was no sampling and non-response bias. Bias refers to when one has a preconceived opinion about something or someone which may lead to the results of a quantitative study becoming subjective (Polit, Denise, Beck & Cheryl 2009). Random sampling was used to minimise sampling bias while checking with participants to ensure that each questionnaire was fully completed to minimise non-response bias. Response bias was minimised by avoiding the inclusion of open-ended questions in the questionnaire.

1.5 ETHICAL CONSIDERATIONS

The researcher obtained approval and permission to conduct the study was obtained from the School of Health Care Sciences and TREC, then from the Department of Health District Office and thereafter, as well as the Operational Managers of the clinics where the research was conducted. All participants were required to give consent to participate in a study by signing consent forms. The researcher explains in detail the purpose of the study, their rights, potential risks, and benefits were explained to the participants before they could sign the consent. The participants were made aware that they can withdraw from the study anytime when they feel like and there shall be no negative impact on their health record.

There was no anticipated harm to this study on PLWH, however, the significance of the study was explained to the patients, and the facility Manager to prevent any anxiety. To ensure the principle of Justice, the researcher used a systematic sampling method which assisted in ensuring fairness in participation in the study. This also entailed the use of the respondent's home language to ensure fairness in communication.

Confidentiality and privacy were ensured by storing all the collected data in a locked office and on software that has password encryption. The confidentiality associated with HIV diagnosis and care was maintained as stipulated in the guidelines. Respondents were assured that only the supervisor, statistician and researcher may have access to the data. Anonymity refers to the principle that the identity of the research participant is kept a secret (Brink, van der Walt & van Rensburg, 2018). Participants' identities were protected by not writing their names on the questionnaire. The participants were further assured that the information shared is for the study purpose only but not for public knowledge.

1.6 SIGNIFICANCE OF THE STUDY

The study will assist the communities in maintaining good health status which will increase the participation of its members in community development activities. This will reduce the number of visits to the Clinic for stable patients where virally suppressed patients are given 2 to 3 months of treatment. Adhering to appointment visits improves adherence to medication which could result in less absenteeism from their studies, and employment and being able to take care of themselves financially.

The government will gain from the study through new strategies aimed at minimising missed appointments for ART patients. Save costs regarding managing patients with complications thereof. There will be no need for the government to worry about increasing the number of healthcare professionals to assist clients who are congesting the facilities by coming on the day that they are not supposed to. The NGO's will have scientific proof to justify a high lost follow rate which can subsequently assist in securing funding.

1.7 OUTLINE OF THE STUDY

Chapter One: Introduction and background

Chapter one shares the background of the study and why there was a need for the study to be conducted. It is an overview of this study and it shows how the rest of the study is structured and which methods and techniques were applied to achieve the aims and objectives of this study.

Chapter Two: Literature review

This literature review chapter will provide an overview of existing information concerning the phenomenon investigated and how the relevant concepts interrelate. The chapter gives details on the status quo in the literature about patients missing their appointments and the consequences of such behaviour.

Chapter Three: Methodology

This chapter outlines the methods and techniques followed as a way of achieving the objectives of this study. For each method and technique applied, the researcher explains why the specific method or technique was chosen. The steps followed for collecting data and analysing it as well as precautionary measures taken to protect participants are shared in detail.

Chapter Five: Results

The study results are reported and interpreted in this chapter. Chapter 5 is organised into three sections: Sociodemographic information (socio-economic characteristics of participants), reasons for missing clinic appointments and health system factors leading to missed clinic appointments.

Chapter Six: Discussion

The study findings are discussed in this chapter.

Chapter Seven: Conclusion, recommendations, and limitations

This chapter discusses the conclusion of the study based on the findings that were collected in Rethabile Health Center, Capricorn District to determine factors that contribute to missed appointment visits by PLHIV in a Center in Capricorn District, Limpopo province. The limitations that have affected the study and the recommendations will be discussed as well.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This review of the literature helped the researcher to identify gaps in the medical field concerning the reasons why patients in need of therapy choose to miss their appointments (Mudavanhu, 2017). It helped the researcher to avoid repeating a study that has already been performed because the researcher could get an overview of what has been investigated in South Africa and beyond. Therefore, by reviewing the literature, the researcher could conduct a study that was relevant and had the potential to make a significant contribution to the existing body of knowledge (Western Sydney University, 2017).

2.2A GLOBAL OVERVIEW OF MISSING ANTIRETROVIRAL THERAPY APPOINTMENTS

A delay in accessing Antiretroviral Therapy (ART) poses danger to the health of People Living with HIV/AIDS (PLWH) which could result in opportunistic infections and death. The World Health Organization [WHO] (2021) published guidelines regarding the delivery of ART and care of PLWH. Amongst the list of WHO (2021), recommendations on encouraging frequent visits between three to six months have been stipulated following the global concerns about missed appointments for PLHIV. For example, missing appointments by PLWH has been reported as a concern in Canada. PLHIV reported missing appointments for ART due to changes in illicit drug use regardless of the treatment model, and that these changes in their drug use patterns and HIV treatment were shaped by social-structural-level factors (such as housing vulnerability, lack of agency) that are known to impact ART outcomes (Gamba, 2021).

In the Sub-Saharan region, there has been a significant development in the reduction of morbidity and mortality rates due to increased access to ART (Leach-Lemens, 2021). Leach-Lemens (2021) noted that the development has encouraged other African countries like Zambia, Uganda, Malawi, and South Africa to speed up access to ART through frequent visits by PLWH. However, the region continues to experience challenges with People Living with HIV/AIDS who cannot disclose their status and start treatment, thus making it difficult to initiate ART appointment visits with healthcare providers. Shumba, Atuhaire, Impact, Atukunda, and Memiah (2013) reported a

significant correlation between missed appointments and adherence to ART. While Cairns (2021) noted a significant impact of frequent visits to the clinics which includes reduced morbidity and mortality amongst PLWH. Most of the patients in Zambia and Malawi were found to be stable, with non-complicated HIV infection due to frequent visits to the clinic that ensured an effective supply of Antiretroviral Therapy (ART), especially since the visit in their clinic was done every six months instead of every three months or less (Cairns, 2021). However, Leach-Lemens (2021) noted that stable HIV/AIDS condition was achieved because the health centres received additional support to help them stick to three-monthly or six-monthly appointment intervals and to strengthen the ART supply chain, but the patients themselves did not receive additional support.

2.3 CAUSES OF MISSED APPOINTMENT FOR PLHIV

The cause of missed appointments has been reported in countries such as Canada, Uganda, Zambia and South Africa. The section below summarizes these causes in these countries.

2.3.1 Use of psychoactive drugs

Gamba (2021) noted that most of the Canadian PLWHIV missed their appointment due to the influence of using illicit drugs. Kipp (2016) assessed the association between marijuana use and retention in HIV care through a retrospective cohort study of patients engaged in care at a large HIV clinic in 2011 and 2012. Marijuana use was reported by 17% of 1791 patients and 21% were not retained into care. A non-linear dose–response was observed for frequency of marijuana use and missed visits, with daily users having the highest risk compared to non-users. Daily marijuana use had a negative impact on HIV clinic attendance. The reasons patients default to ART programmes and fail to honour their appointment in Limpopo Province of South Africa include factors such as daily marijuana use, the time needed for treatment, waiting time, stigma, family pressure, religious beliefs and illness (Miller, Ketlhapile & Rosen, 2010).

2.3.2 Failure to remember the appointment date

A cross-sectional case-control study among 447 HIV-infected patients attending the outpatient clinic between March and July 2014 was conducted by (van Andel, 2016) in the Netherlands. Patients with missed appointments from January 2013 onwards were included as cases and compared to a random selection of same-day controls without missed appointments during the same period. Clinical and socio-demographic

characteristics were collected from clinical records and an interviewer-administered questionnaire. The main reason given for non-attendance was a failure to remember the appointments (44%) (van Andel, 2016).

2.3.3 Transport costs

In two studies conducted by Jespersen (2017) in Johannesburg, transport costs were mentioned as a reason for default by some of the patients. However, one of the major reasons for the loss to follow up at both clinics was relocating but subsequent reasons varied between them and included work obligations or transport costs. It seems like travel costs have a serious impact on PLWHIV missing appointments, this is because Menezes, Macphail, Rubel and Maskew (2007) also studied contributing factors to lost follow-up and challenges in South African patients on antiretroviral therapy in a group of 182 patients who missed follow up appointments at the Clinic. The results showed that 34% of patients cited financial reasons, transport costs, and paying.

2.4 SUPPORT FOR ENCOURAGING ADHERENCE TO THE APPOINTMENT

The recent guidelines of WHO (2021) could be considered adequate to ensure support of health centres and PLHIV to avoid missing appointments and achieved frequent visits to the centre. According to WHO (2021), PLHIV should be offered with three to six months' health visits outside the health centre to ensure adherence to ART. So far, other countries have taken the initiative to adhere to the WHO guidelines. For example, Canada advocates for the use of an agency that has been reported to have a significant positive impact on PLHIV (Gamba, 2021). Gamba (2021) noted that the agency assisted the PLHIV in not missing the appointments for ART, thus enhancing the treatment adherence of such patients. Furthermore, the author advocates for home visits or consultations and the integration of the ART adherence program in the home of PLWH (Gamba, 2021).

In the Sub-Saharan region, there is a need to support the health centres which are having high statistics of PLHIV (Leach-Lemens, 2021). The support could be initiated to enhance the staff's full capacity that would be able to make a follow-up with PLHIV. The study in Zambia concluded that encouraging early disclosure with effective counselling could make one transparent about living with HIV/AIDS (Cairns, 2021).

2.5 CONCLUSION

In conclusion, efforts to prevent missed clinic visits combined with moves to minimize barriers to re-entry into care are more likely than either approach alone to keep missed visits from turning into confirmed lost-to-follow cases.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter unpacks the population, sample frame, approach and technique, sample size, data-collection method, data processing and analysis, as well as the population studied. The researcher shares detailed information on why the specific research approach, design, methods, and techniques were followed in this study.

3.2 RESEARCH APPROACH AND DESIGN

This study has applied a cross-sectional descriptive research design to achieve the research objectives. Cross-sectional descriptive research design is defined as an examination of a group of subjects simultaneously in various stages of development, levels of education, the severity of illness, or stages of recovery to describe changes in a phenomenon across stages (Grove, Gray, & Burns, 2015).

The study used a quantitative research approach to solve the research problem. Quantitative research is an approach that uses structured instruments to collect numerical data (Creamer, 2018). A quantitative research approach was selected for this research as it involves data collection employing a structured questionnaire. The study design is a structured approach followed to answer a particular research question (Joubert & Ehrlich, 2014).

3.3 Research setting

The research setting can be defined as the physical, social, and cultural site in which the researcher conducts the study (Morgan, 2017). This study was conducted in Rethabile Health Centre, Capricorn District in Polokwane City, Limpopo Province, South Africa. Rethabile Health Centre is a health care facility situated on the outskirts of Polokwane City, within 2 Kilometres of Polokwane Provincial hospital. This health centre provides services to PLHIV around Capricorn District, predominantly within Polokwane Municipality. The Figure below indicates the location of the Rethabile Health Centre within Polokwane City.



Figure 1: Map of District, nearest town and study site

3.4 Study population

The sample size was calculated using Slovin's formula as follows"

Slovin's formula:

$$n = N / (1+(Ne)^2)$$

where, the sample size (n) given the population sine (N) and a margin of error (e) is Calculated as follows: where n = number of samples, N =total number population, E = error margin.

$$n = ?$$

$$N = 350$$

$$e = 0.05 (5\%)$$

$$n = N / (1+(Ne)^2)$$

$$n = N / (1+ (0.05)^2)$$

$$= 350/ 1+350(0.0025)$$

$$350/1.875$$

$$=186.66$$

Therefore, n=187

3.4.1 The sampling procedure

The study was quantitative, and as such, simple random sampling was used to select a sample from the population. A simple random sample is a randomly selected subset of a population. In this sampling method, each member of the population has an exactly equal chance of being selected (Lauren Thomas, 2020). In this study, the ordered sampling frame was to select participants using a hat method. Numbers were written on a piece of paper from 1 to 350. The paper was cut into 350 pieces with numbers on them. These papers were put in a bowl. The researcher was blindfolded to select 188 pieces of paper with the names of participants. The participants who were randomly selected were listed and contacted to participate in the study.

Inclusion criteria

- All PLHIV attending the health centre, who has had a scheduled appointment with a health care provider and has at least missed one scheduled appointment.
- All PLHIV who are 18 years and above, both men and women, and of all ethnic groups.

Exclusion criteria

- All PLHIV attending the health centre, who has had a scheduled appointment with a health care provider, but not consenting to the participation in the study.
- PLHIV on ART program who missed appointments but, are mentally unfit to participate in the study.

3.5 Data collection

Data collection is defined as a process of gathering all relevant information to the phenomenon under study (Grove, Gray, & Burns, 2015).

3.5.1 Data collection tool

A structured self-developed questionnaire was used. A self-developed questionnaire was chosen because it provides a high response rate, is less time-consuming in administration, and maintains a sense of anonymity. After all, participants' names were not required, and it is a quick data analysis. The self-developed questionnaire comprised closed-ended questions. It was developed in English and thereafter, translated into Sepedi. For participants who might not be able to read and write, the researchers read and filled out the questionnaire on their behalf.

The self-developed questionnaire is divided into three sections namely:

Section A: Socio-demographic and economic characteristics

Section B: Personal factors

Section C: Health System-related factors

Section D: To be completed by the researcher

3.5.2 Data collection procedure

The files of the selected participants were put aside during the pre-retrieval of files. The files were then kept by the researcher. Upon arrival, the selected participants are directed to the researcher. The participants were given an information sheet that contained all the necessary information about the research. The researchers also explained to the participants individually what the research is about and stated that their participation is completely voluntary and that they may leave at any time. Thereafter, participants that indicated their interest in participating in the research were given consent forms and self-developed questionnaires and were also given ten minutes to think about their participation.

The questionnaires were personally distributed to the caregivers by the researchers to be filled in. With those who cannot read and write, the researchers completed the questionnaires for them after reading for them. Questionnaires were distributed at the clinics where the research was conducted.

3.6 Data analysis

Data analysis refers to a process of scrutinizing numerical data with the use of statistical techniques (Jansen & Warren, 2020). The researcher used descriptive statistics to analyze data from the data collected from the questionnaires. The researcher applied descriptive statistics with assistance from statisticians at the University of Limpopo. The scrutinized data was presented in table, figures and narrative format. Results were presented in tables, bar graphs, pie charts and box plots. Furthermore, the descriptive statistics included standard mean, and standard deviation, frequencies of common factors influencing failure to honour the appointment.

3.7 RELIABILITY AND VALIDITY

3.7.1 Reliability

Reliability refers to the consistency with which the instrument repeatedly measures what it is supposed to measure and yields the same results if used by other researchers (Polit & Beck, 2018). Reliability was ensured by using language on the questionnaire that the participants understand. Furthermore, to ensure reliability, the researchers administered the questionnaire to the participants. The self-developed questionnaire is reliable because it was piloted before use.

3.4.1 Validity

The validity of an instrument relates to whether it measures what it is supposed to measure (Polit & Beck, 2018). The following types of validity are likely to affect my study: Content validity was achieved by giving the tool to the Doctors and Nurses at Rethabile Health Center to ascertain the facts in the questionnaire. To further ensure validity, the questionnaire was piloted. The pilot study took place at Rethabile Health Center.

3.8 Bias

Bias is defined as a preconceived opinion about something or someone (Polit, Denise F, Beck, Cheryl Tatano 2009).

- *Sampling bias*

To minimise sampling bias, simple random sampling was used to select participants. Each member of the population had an exactly equal chance of being selected.

- *Non-response*

The researcher will have a list of contact numbers attached to the questionnaire codes. In the case where participants were given questionnaires to complete at home, the participants were contacted in cases where there is no response to other questions. In the case where the researcher was present; she was double-checking the completeness of the questionnaire.

- *Response bias*

The questionnaire was designed in a way where open-ended questions were avoided.

3.9 Ethical considerations

The following ethical principles were considered for this study:

3.9.1 Permission and ethical clearance

Approval and permission to conduct the study were obtained from the School of Health Care Sciences and TREC, then from the Department of Health District Office and thereafter, from the Operational managers of the clinics where research was conducted.

3.9.2 Informed Consent

Informed consent is a voluntary agreement to participate in research. It is not merely a form that is signed but is a process in which the subject understands the research and its risks (Brink, van der Walt & van Rensberg, 2018). Patients were given consent to participate in a study. Consent forms were issued to patients to give consent to participate in a study. The purpose of the study, their rights, potential risks, and benefits were explained to the participants before signing the consent. The participants were made aware that they can withdraw from the study anytime when they feel like and there shall be no negative impact on their health record. The consent forms were written in English as the medium of instruction and Sepedi as the most spoken language in Polokwane. A verbal explanation was used in the case where the participant was unable to read and write.

3.9.3 Principle of Beneficence

This principle involves that ethical research should protect subjects of research from any harm whether physical, psychological or otherwise (Brink, van der Walt & van Rensberg, 2018). There was no anticipated harm to this study on PLWH, however, the significance of the study was explained to the patients, and the facility Manager to prevent any anxiety.

3.9.4 Principle of Justice

The principle of Justice includes fairness to the respondents when taking part in the study (Brink, van der Walt & van Rensberg, 2018). Therefore, the researcher used a systematic sampling method which assisted in ensuring fairness in participation in the study. Furthermore, the use of the respondent's home language was allowed in the study to ensure fairness in communication.

3.9.5 Principle of Confidentiality

Confidentiality and privacy will be ensured by storing all the collected data in a locked office and on software that has password encryption. The confidentiality associated with HIV diagnosis and care was maintained as stipulated in the guidelines. Respondents were assured that only the supervisor, statistician and researcher may have access to the data.

3.9.6 Anonymity

Anonymity refers to the principle that the identity of the research participant is kept a secret (Brink, van der Walt & van Rensburg, 2018). Participants' identity was protected by not writing their names on the questionnaire, but by coding like Participant 001. The participants were further assured that the information shared is for the study purpose only but not for public knowledge.

3.9.7 Covid-19

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus (OMS, 2021). In this study, all the activities took place under strict Covid 19 prevention practices. Participants were sanitised before filling in the questionnaires. One-meter social distancing was maintained, and all participants were advised to wash their hands with water and soap. All participants were subjected to wearing masks throughout the process.

3.10 CONCLUSION

In summation, all PLHIV who missed their appointment visit were selected as the participants of the study after meeting the inclusion criteria. Ethical clearance from the University and permission from the Limpopo Department of Health were obtained before conducting the research. Measures to protect participants from any harm and ensure the trustworthiness of the study were put in place.

CHAPTER 4: RESULTS

4.1 Introduction

The study findings are reported and interpreted in this chapter. This Chapter is organised into three sections: Sociodemographic information (socio-economic characteristics of participants), reasons for missing clinic appointments and health system factors leading to missed clinic appointments. A total of 188 participants took part in this study. Data was collected between October and November of 2022 with a response rate of 100%.

4.2 Sociodemographic information

The socio-demographic information of participants is presented in Table 4.1.

Table 4.1 : Socio-economic characteristics of participants

Variable	N(%)
Nationality	
SA	156(83.0)
other	32(17.0)
Gender	
female	111(59)
male	65(34.6)
other	12(6.4)
level of education	
primary	20(10.6)
secondary	87(46.3)
tertiary	69(36.7)
postgraduate	12(6.4)
Marital status	
single	66(35.1)
married	57(30.3)
divorced	23(12.2)
staying with partner	42(22.3)
Employment status	

permanent	61(32.4)
casual	46(24.5)
unemployed	79(42.0)
pensioner	2(1.1)
Monthly income	
R1-R2500	28(14.9)
R2501-R6000	32(17.0)
R6001-R16000	16(8.5)
R16001-R54157	13(6.9)
refused to answer	99(52.7)
Total	188(100)

Of 188 participants, 156 (83%) were South African citizens and 32 were from other countries. 61 participants were full-time employed, 46 casual workers, 79 were unemployed and 02 were pensioners. Of the 61 participants who were full-time employed, 46 were casual workers, 79 unemployed and 02 pensioners. The majority of the participants (46.3) higher level of education was recorded as secondary level. 35.1% of the participants are single and 22.3% are staying with partners.

In Table 4.1, the socio-demographic data of participants shows that 79% of the unemployed population missed their clinic appointments in a specific given time. 59% of the participants who missed their clinic appointments are females whereas 6.4% of participants recorded their gender as other. The middle-earner participants also showed a significant number (17%) of missed clinic appointments whereas the major number (52.7%) refused to disclose their salary level.

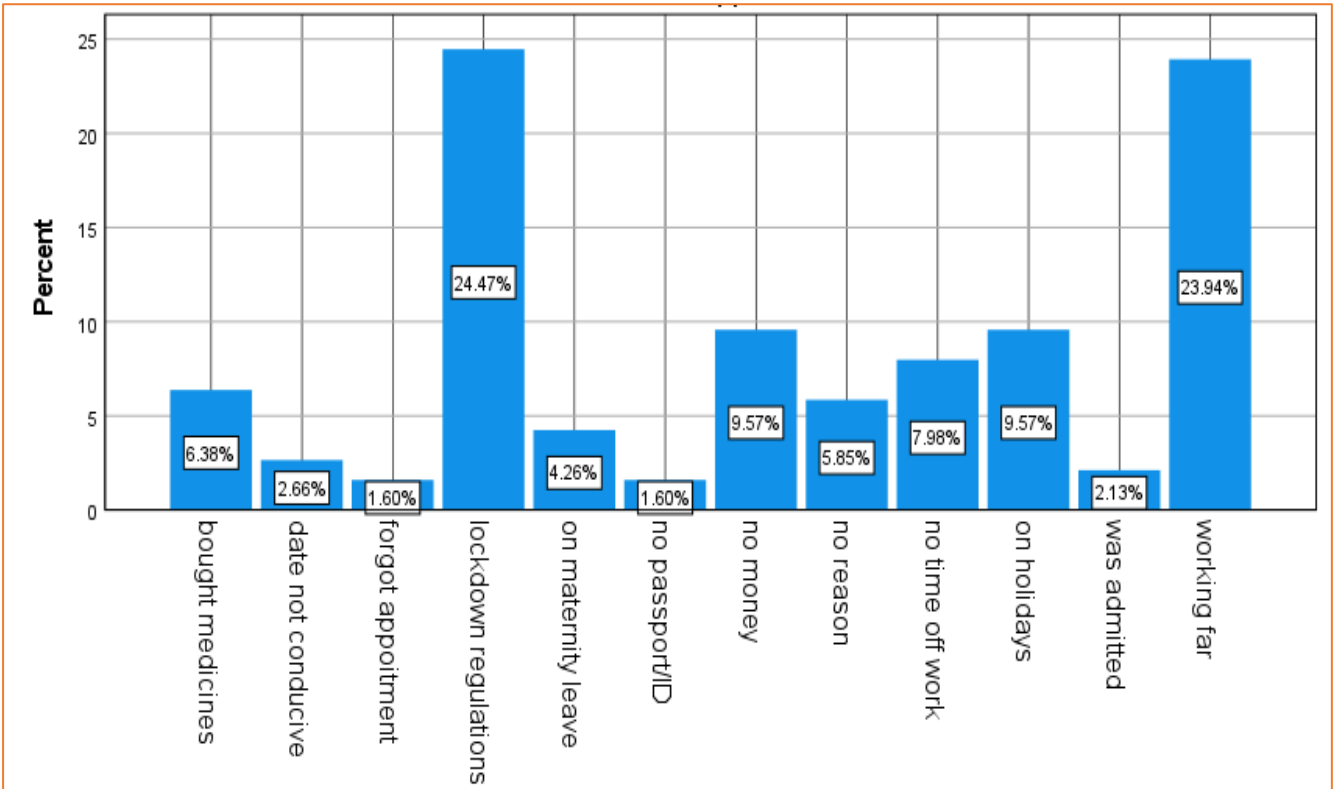


Figure 4.1 Reasons for missing clinic appointments

Table 4.2 Reasons for the missed appointment stratified by name of disease

Name the lifelong illnesses you are suffering from	Reason for missed appointment												p-value
	bought medicines	date not conducive	forgot appointment	lockdown regulations	on maternity leave	no passport/ID	no money	no reason	no time off work	on holidays	was admitted	working far	
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	
diabetes	0	0	0	1(2.2)	0	0	1(5.6)	0	1(6.7)	0	0	0	
epilepsy	0	0	0	0	0	1(33.3)	0	0	1(6.7)	0	0	0	
hypertension	1(8.3)	1(20.0)	0	6(13.0)	3(37.5)	0	3(16.7)	3(27.3)	5(33.3)	4(22.2)	1(25.0)	3(6.7)	
TB	0	0	0	1(2.2)	0	0	0	0	0	0	1(25.0)	2(4.4)	
DM/HPT	1(8.3)	0	0	1(2.2)	0	0	0	0	(6.7)	0	0	1(2.2)	
99	10(83.3)	4(80.0)	3(100.0)	37(80.4)	5(62.5)	2(66.7)	14(77.8)	8(77.8)	7(46.7)	14(77.8)	2(50.0)	39(86.7)	
	12(100.0)	5(100.0)	3(100.0)	46(100.0)	8(100.0)	3(100.0)	18(100.0)	11(100.0)	15(100.0)	18(100.0)	4(100.0)	45(100.0)	

0.003

Figure 4.1 shows that 24.4% of participants reported lockdown as the main reason for missing their appointment, 23.9% reported to be working far from the health facility, 9.5 reported not having transport money and another 9.5% reported having been on holiday during the time of appointment, 7.9% have difficulty getting time off work for clinic appointments. Other reasons such as being on maternity leave, having enough treatment supply and hospitalization were also cited by participants.1.6% of participants reported to have forgotten their clinic appointment.

Table 4.3 Health system factors leading to missed clinic appointments

Variable	N (%)
How far is the clinic from where you stay?	
1-3 KM	47(25.0)
3-5 KM	80(42.6)
more than 6KM	61(32.4)
What is your longest waiting time to get assistance?	
1-2 hors	69(36.7)
3-5 hors	119(63.3)
Which queues do you find the longest at the clinic?	
Consultation	50(26.6)
file retrieval	39(20.7)
Dispensary	45(23.9)
all of the above	54(28.7)
Records of PLWHIV are made different to other records	
Agree	75(39.9)
neither agree nor disagree	70(37.2)
Disagree	43(22.9)
Did the facility ever run out of medications? stock outs at the facility	
Yes	42(22.3)
No	146(77.7)
Were you ever returned due to identity/passport issue?	
Yes	37(19.7)
No	151(80.3)
Total	188(100)

As illustrated in Table 4.3, 32.4% of participants reported travelling long distances of more than 6 Km to the clinic as one of the causes of missed appointments. Of the 188 participants, 63.3% reported long waiting times, although it takes time for file retrieval, consultation, and dispensary, 26.6% stated that the longest time is spent waiting for a consultation. Almost fourty percent (39.9%) feel that records of PLWH are different from others. Additionally, Health system-related factors such as unavailability of stock and returned due to not having identity books or expired passports were cited as some of the reasons that lead to missing clinic appointments (Table 4.3).

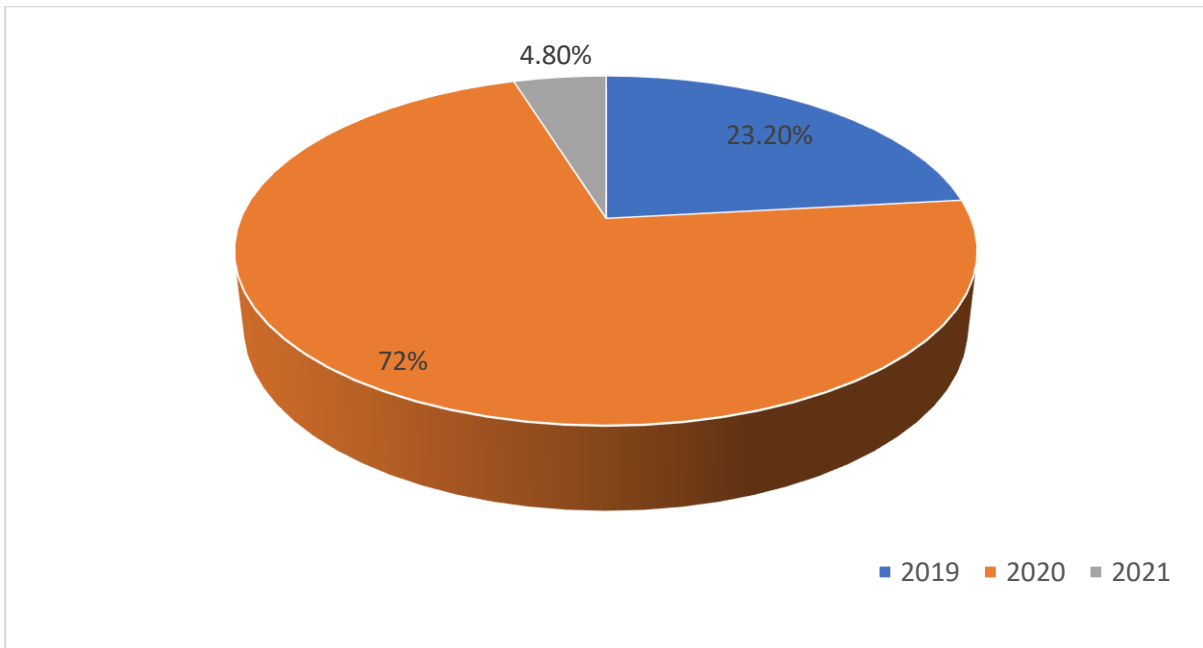


Figure 4.2 : Period of the missed appointment

Majority of patients included in the study (71.8%) , missed their clinic appointment in the year 2020, followed by 23.4% in 2019 (Figure 4.2).

4.3 Relationship between missed appointments and sociodemographic information

A significant relationship was observed between the year of the missed appointment and the reasons for a missing appointment with a p-value of 0.001

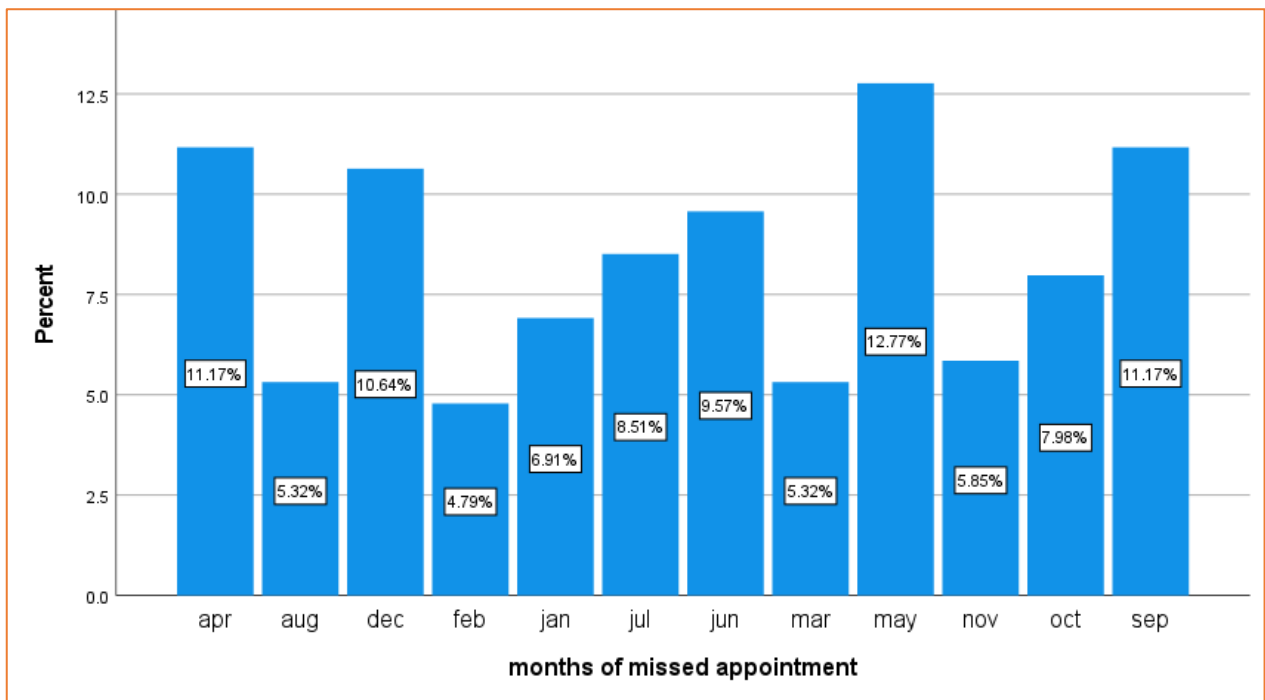


Figure 4.3 : Months of the missed appointment

Almost thirteen percent of participants missed their appointments in May, followed by 11.2% in both April and September and 10.6% in December (Figure 4.3).

The discussion of the results is performed in chapter 5 and the results are compared to existing literature relating to this study.

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION

In the previous chapter, the methodology applied in this investigation was outlined, and the study findings are discussed in this chapter. Chapter 5 is organised into 3 sections: Sociodemographic information (socio-economic characteristics of participants), reasons for missing clinic appointments and health system factors leading to missed clinic appointments.

5.2 SOCIODEMOGRAPHIC INFORMATION

Of 188 participants, 156 (83%) were South African citizens and 32 were from other countries. 61 participants were full-time employed, 46 were casual workers, 79 were unemployed and 02 were pensioners (Table 1). The majority of the participants (46.3) higher level of education was recorded as secondary level. About 35.1% of the participants are single and 22.3% are staying with partners.

In Table 4.1, the socio-demographic data of participants shows that 79% of the unemployed population missed their clinic appointments at a specific given time. 59% of the participants who missed their clinic appointments are females whereas 6.4% of participants recorded their gender as other. This agrees with the study conducted by (Alkomos et al., 2020) which showed a statistically significant difference in the no-show rate of 60% in females compared to 40% in males. The middle-earner participants also showed a significant number (17%) of missed clinic appointments whereas the major number (52.7%) refused to disclose their salary level.

5.3 REASONS FOR MISSED APPOINTMENTS

As presented in Figure 4.1, 24.4% of participants reported lockdown as the main reason for missing their clinic appointments. In the study conducted by Pierre *et al.*, (2020) in Rwanda, it is stated that less than 48% of PLHIV attended their clinic appointments during the lockdown period. An estimated 23.9% reported to be working far from the health facility, 9.5 reported not having transport money which agrees with the study conducted by (Chaiyachati *et al.*, 2018) where it was found that 24-51% of patients who missed their appointment reported transport challenges the reason for

missing appointments. Although there is no existing study that cited being a holiday as a cause for missing an appointment, 9.5% of the participants reported having been on holiday during the time of the appointment. 7,9% have difficulty getting time off work for clinic appointments this again agrees with the study by Alkomos *et al.* (2020) wherein, out of 74 subjects, 17 reported work-related issues as a cause for the missed appointment. Other reasons such as being on maternity leave, having enough treatment supply and hospitalization were also cited by participants.1.6% of participants reported having forgotten their clinic appointment which concurred with a study by Alkomos *et al.* (2020) which revealed that 36% of their participants reported to have forgotten their clinic appointments and again in a study by van Andel (2016). the main reason given for non-attendance was a failure to remember the appointments.

5.4 HEALTH SYSTEM FACTORS LEADING TO MISSED CLINIC APPOINTMENTS

As illustrated in Table 4.3, 32.4% of participants reported travelling long distances of more than 6KM to the clinic as one of the causes of missed appointments.63.3% reported long waiting times, although it takes time for file retrieval, consultation, and dispensary, 26.6% stated that the longest time is spend waiting for consultation.39.9% feel that records of PLWH are different from others which are backed by a study conducted by (Miller, Ketlhapile & Rosen, 2010).

In Limpopo, the reasons patients default to ART Programmes and fail to honour their appointments include factors such as daily marijuana use, the time needed for treatment, waiting time, stigma, family pressure, religious beliefs and illness (Miller, Ketlhapile & Rosen, 2010).

Additionally, Health system-related factors such as unavailability of stock and returned due to not having identity books or expired passports were cited as some of the reasons that lead to missing clinic appointments (Table 4.3).

CHAPTER 6: CONCLUSION, RECOMMENDATIONS, AND LIMITATIONS

6.1 INTRODUCTION

This chapter discusses the conclusion of the study based on the findings that were collected in Rethabile Health Center, Capricorn District, Limpopo Province to investigate contributing factors to missed appointment visits of PLHIV for antiretroviral therapy at a Health Centre in Capricorn District, Limpopo Province, South Africa. The limitations that have affected the study and the recommendations will be discussed as well.

6.2 RESEARCH METHODOLOGY

The study was conducted at a Health Centre, in Polokwane municipality, South Africa using a quantitative method and cross-sectional study design. The study method and design used statistically measured and assessed the factors contributing to missed appointment visits by PLWH. The data was collected using a self-administered structured questionnaire that constituted three sections namely: Demographic data, Personal factors, and Health systems-related data. Statistical Package for the Social Sciences (SPSS) version 28.0 was used to analyse collected data. Data were analysed using descriptive statistics namely frequencies and cross-tabulations. The Chi-square test was used, and P-value was set at 0.05 as the level of significance. The Chi-square test was used to determine the relationship between variables

6.3 MAIN FINDINGS OF THE STUDY

Out of the total participants 188, 156 (83%) were South African citizens and 32 were from other countries. 61 participants were full-time employed, 46 casual workers, 79 were unemployed and 02 pensioners. 61 participants were full-time employed, 46 were casual workers, 79 were unemployed and 02 were pensioners. The majority of the participants (46.3) higher level of education was recorded as secondary level. 35.1% of the participants are single and 22.3% are staying with partners.

The socio-demographic data of participants shows that 79% of the unemployed population missed their clinic appointments in a specific given time. 59% of the participants who missed their clinic appointments are females whereas 6.4% of participants recorded their gender as other. The middle-earner participants also showed a significant number (17%) of missed clinic appointments whereas the major

number (52.7%) refused to disclose their salary level. 24.4% of participants reported lockdown as the main reason for missing their appointment, 23.9% reported to be working far from the health facility, 9.5 reported not having transport money and another 9.5% reported having been on holiday during the time of appointment, 7.9% have difficulty getting time off work for clinic appointments.

A significant relationship was observed between the year of missed appointments and reasons for missing appointments with a p-value of 0.001.

6.4 CONCLUSION

Overall, most Participants who took part in the study acknowledged that they knew about their appointments and are aware of the impact of missing appointments. The participants do not have problems experiencing stock-outs at the facility. The participants miss their follow-up visits. Level of education and religious background showed no impact in missing appointments statistically.

6.5 RECOMMENDATIONS

It is recommended that there should be an introduction of reminder messages a few days before the appointment date to remind patients of their appointment dates. Patients need to attend their nearest clinic to avoid long-distance travel to health facilities. The standard clinic waiting time of 1-2 hours should be maintained across all health facilities. Patients should be educated about the appointment system and options available to them in case of commitments that clash with clinic appointment dates.

6.6 LIMITATIONS OF THE STUDY

- The study was self-funded which resulted in financial constraints.
- The study is quantitative in nature questionnaire was used which did not leave room for participants to give explanations and reasons behind their responses.

6.7 CONCLUSION

Participants have proven that lockdown regulations because of covid 19 infection have negatively impacted the health system as evidenced by high clinic missed appointments citing lockdown as the main reason. Knowledge of clinic appointment dates does not guarantee that a person will show up on their appointment dates, The need to adhere to scheduled appointment dates or to reschedule in time should be emphasised on every visit to avoid a high number of missed appointments.

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ANNEXURES

Annexure A: CONSENT FORM

University of Limpopo Department of Public Health

Information sheet for a research.

MISSED CLINIC APPOINTMENT FOR ANTIRETROVIRAL THERAPY PATIENTS AT A HEALTH CENTRE.

You are invited to participate in a research study conducted by a Masters student from the University of Limpopo. You must be 18years or older to participate in the study. Your participation is voluntary.

Purpose of the study

We are requesting you to take part in this study because we are trying to learn more into patients missing their appointment dates for their ARV care here at the Health Centre. There will be a questionnaire to follow after completion and returning this consent form.

Procedure

You will be requested to fill in a questionnaire as one of the patients attending ARV care here at the facility. The questionnaire can take up to 30minutes of your time and it will be done here at the clinic on one of your clinic visit dates.

Potential benefit to the participants

You will not benefit directly as an individual for the participation however your views can assist the facility in improving so that everyone will feel free to visit the facility and not miss their appointment dates.

Compensation

You will not receive any payment for your participation in this research study.

Potential conflict of interest

The researcher does not have any financial interest in this research study.

Confidentiality

Any information that is connected to this study and can be identified with you will remain confidential and will be disclosed only with your permission. The information collected about you will be coded using a fake name or initial and numbers. The information which contains your identifiers will be kept separately from your data. The data will be stored in the researcher’s office in a locked cupboard. The data will be stored for approximately five years after the study has been completed and then destroyed through shredding.

Your rights as a research subject

Participation is voluntary. You may withdraw your consent at any time of the study and discontinue participation without penalty. You will receive a copy of this consent for your own records.

Consent Form

I..... (full names) have read the consent form and understand that my participation in this study is voluntary and I am free to withdraw at any time during the course of the study without consequences. I understand that any information about this study will be strictly confidential.

I have received a copy of this consent form. I agree to participate in this study.

Signature: **Date:**

Annexure B : Ethical clearance certificate



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TURFLOOP RESEARCH ETHICS COMMITTEE
ETHICS CLEARANCE CERTIFICATE

MEETING: 26 July 2022

PROJECT NUMBER: TREC/332/2022: PG

PROJECT:

Title: Factors Contributing to Missed Clinic Appointments by People Living With HIV/AIDS on Antiretroviral Therapy at Health Centres in, Capricorn District Limpopo Province, South Africa.

Researcher: KY Marule

Supervisor: Mr MS Makwela

Co-Supervisor/s: Prof E Maimela
Ms MP Maphakela

School: Health Care Sciences

Degree: Master of Public Health

PROF D MAPOSA
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

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

Note:

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

Annexure C : Permission to conduct research Department of Health



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Ref : LP_2022-10-003
Enquires : Ms PF Mahlokwane
Tel : 015-293 6028
Email : Phoebe.Mahlokwane@dhsd.limpopo.gov.za

MARULE KHOLOFELO YVONNE

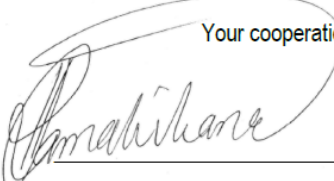
PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

FACTORS CONTRIBUTING TO MISSED CLINIC APPOINTMENTS BY PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT HEALTH CENTRES IN, CAPRICORN DISTRICT 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 District Executive Manager a week before the study is conducted.
 - b. This permission is **ONLY** for **Ratshatshaa CHC and Rethabile CHC**
 - 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**

16/11/2022

Date

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

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Annexure D: INFORMATION PAMPHLET

Title of the study: FACTORS CONTRIBUTING TO MISSED CLINIC APPOINTMENTS BY PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT A HEALTH CENTRE IN, CAPRICORN DISTRICT LIMPOPO PROVINCE, SOUTH AFRICA.

Dear Participant,

1. Introduction

We invite you to participate in a research study. This information leaflet will help you to decide if you want to participate in the study. Before you agree to take part, you should fully understand what is involved. It will take almost 30 minutes to 60 minutes to complete the interview. If you have any questions that this leaflet does not fully explain, please do not hesitate to ask the researcher Ms Kholofelo Marule.

2. The nature and purpose of this research study

The main purpose of this research study is to determine factors contributing to missed clinic appointments by people living with HIV/AIDS on ARV's therapy at Rethabile Health Center in Capricorn District, Limpopo Province, South Africa. You as a participant, you are a very important source of information in this regard.

3. Risk and discomfort involved

There are no risks in participating in this research study and should you at any time during the interview feel that you no longer want to take part, you can withdraw.

4. Possible benefits of this research study

Although you will not benefit directly from the research study, the results of the research study, The Department of Health will gain from the study through new strategies aimed at minimising missed appointments for ART patients. Save costs with regard to managing patients with complications arising from non-adherence thereof

6. What are your rights as a participant?

Your participation in this study is entirely voluntary. You can refuse to participate or withdraw your participation from the study at any time without giving any reason. Your withdrawal will not affect you or any treatment at the clinic in any way.

7. Has the research study received ethical approval?

This research study will receive a written approval from the Research Ethics Committee of the University of Limpopo and the Department of Health in Limpopo Province. Copies of the approval letters will be made available if you wish to have one

ANNEXURE E: Questionnaire – English version

Please answer all the research questions below for research purposes: Questionnaire on **FACTORS CONTRIBUTING TO MISSED CLINIC APPOINTMENTS BY PEOPLE LIVING WITH HIV/AIDS ON ANTIRETROVIRAL THERAPY AT A HEALTH CENTRE IN, CAPRICORN DISTRICT LIMPOPO PROVINCE, SOUTH AFRICA.**

- This questionnaire should only be completed All PLHIV attending the health center, who has had a scheduled appointment with a health care provider and has at least missed one scheduled appointment.
- All patients living with HIV who are 18 years and above, both men and women, and of all ethnic groups.
 - All answers provided in this questionnaire shall be kept confidential and there will not be any link between the participant and the answers.
 - No name shall name shall be written in the questionnaire.
 - Please feel free to answer the questions and remember there is no right or wrong answer.
 - Duration of the questionnaire is 10-30 minutes.

Instructions for completing the questionnaire

- Answer all the relevant questions.
- Options are provided on the right-hand side for every question asked, cross in the box
- opposite the selected option X
- Do not cross/write on the shaded areas
- If you have made any mistake, cancel and sign on the right-hand side, then select your answer of choice.

SECTION A (Demographic data)

1. What is your Age (in years)?	_____years	X	
2. What is your gender?	Female		1
	Male		2
	Other		3
3. What is highest level of education?	Primary school		1
	Secondary school		2
	Tertiary level		3
	Postgraduate I		4
4. What is your marital status?	Single		1
	Married		2
	Divorced		3
	Staying with partner		4
5. What is your employment status?	Full time/Permanent		1
	Part time/Casual		2
	Unemployed		3
6. Roughly how much do you earn per month?	R1-R2500		1
	R2501-R6000		2
	R6001-R16000		3
	R16001-R54167		4
	Don't know		5
	Refused		6
7. Do you have any chronic (lifelong) illness (es)? If yes, proceed to 8. If no skip to 9	Yes		1
	No		2
8. Name the lifelong illnesses you are suffering from	_____ _____ _____		
9. Do you use any psychoactive substance e.g. (Alcohol, marijuana, cigarette)?	yes		1
	No		2
10. If yes, which substance (s) do you use?	_____ _____ _____		
11. What is your religious denomination?	Christian		1
	Muslim		2
	Other		3
12. What is your country of origin? Nationality: If other specify	South African		1
	Other		2

General instructions: Please mark the appropriate answer(s) with X

SECTION B: reason for not being able to come to clinic appointments in the past year? (Personal factors)

		X	
13. Any problems with transportation? If yes specify _____	Yes		1
	No		2
14. Have you have forgotten that you have clinic appointment?	Yes		1
	No		2
15. Did you feel like you are not ready for consultation?	Yes		1
	No		2
16. Are you taking more than one medication? Polypharmacy (Multidrug regimen) if yes ,specify _____	Yes		1
	No		2
17. Are you or have you ever experienced side effects of medication? If yes, mention the side effects	Yes		1
	No		2
18. Were you not informed about the appointment?	Yes		1
	No		2
19. Did you feel like you are better?	Yes		1
	No		2
20. You have not disclosed my status therefore it is difficult to attend clinic?	Yes		1
	No		2
21. Do you find it difficult to in accept your HIV status?	Yes		1
	No		2
22. You were not given an alternative treatment for my condition?	Yes		1
	No		2
	Yes		1

23. Are you experiencing difficulty getting time off from work for consultation?	No		2
--	----	--	---

**SECTION C: What are your Reasons for missing appointment?
(Health System related factors)**

		X	
24. How far is the clinic from where you stay?	1-3 Km		1
	4-5 km		2
	More than 6km		3
25. What is your longest waiting time to get assistance?	1/5 to 2 hours		1
	3-5 hours		2
26. Which queues do you find the longest at the clinic?	Consultation		1
	File retrieval		2
	Dispensary		3
27. On a scale of 0-10, 0 meaning very poor and 10 meaning very good. How do you rate the staff attitude at the clinic?	0-10		
28. Records of PLWHIV are made different to other records	Strongly agree		1
	Agree		
	Neither agree nor disagree		2
	Disagree		3
29. Did the facility ever run out of medications? stock outs at the facility	Strongly disagree		4
	Yes		1
30. Were you ever returned due to identity/passport issue?	No		2
	Yes		1
	No		2
	Yes		1

Thank you for agreeing to participate and help us in this study project.

SECTION D (To be completed by the researcher)

31. When did the patient miss the appointment?			
32. What was the type of each missed appointment?	New appointment	Follow up appointment	Sick visit
Researcher's signature			

Annexure F: Questionnaire- Sepedi version

O kgopelwa go go araba dipotsiso tse di latelago lebakeng la resetshe:
DIPOTSISO KA MABAKA A O A DIRANG GORE BATHO BA GO PHELA KA BOLWETSI BJA HIV/AIDS BA LOFE GO TLA KLINIKING APMO SENTARENG YA MAPHELO MO CAPRICORN DISTRICT, LIMPOPO PROVINCE. SOUTH AFRICA.

- Dipotsiso tse di tlatswa ke batho bao ba phelang ka twatsi ya HIV/AIDS bao ba kile ba palelwa ke go tla lebakeng la bona la kliniki..
 - Batho bao ba phelang ka twatsi ya HIV/AIDS b aba nang le mengwaga ye 18 go ya
 - Ditaba tse di leng ka mo pampering e tla basephiri .
 - Leina le ka se ngwalwe mo pampiring
 - E kwa o lokologile go tlatsa pampiri ye ebile a go na phetolo yan nete goba ya maaka
 - Pampiripotsiso ye eka tsea metsots 10-30

Maele a go tlatsa pampiripotsiso

- Fetola dipotsiso ka moka tsa maleba
- Ka letsogong la go ja gona le dikgetho tseo di dire fapanego, kgetha Karabo ya maleba o leswao la **X**
- O se ke wa ngwala sekgobeng seo se ntshofaditsweng
- Ge o fositse, thala mothaladi o saene ka letsogong la go ja.

KAROLO A(BO WENA)

33. O na le mengwaga ye mekae?	_____	X	
34. Bong?	Mosadi		1
	Monna		2
	E nngwe		3
35. Maemo a sekolo?	Primary school		1
	Secondary school		2
	Tertiary level		3
	Postgraduate I		4
36. Tsa lenyalo?	A se ke nyalwe		1
	Ke nyetswe		2
	Hladile		3
	Go due le molekane		4
37. Mmereko?	pemanente		1

	Mosomo wa lebakanyana		2
	Go se some		3
38. Go gola bokae ka kgwedi?	R1-R2500		1
	R2501-R6000		2
	R6001-R16000		3
	R16001-R54167		4
	Ga ke tsebe		5
	A ke nyaka go bolela		6
39. O na le malwetsi a mangwe a o pheleng ka ona? Ge ele ee, eya go potsiso y abo 8. Ge e aowa, eya go 9	Ee		1
	Aowa		2
40. O phela ka bolwetsi bofe?	_____		
41. O somisa dirithifatsi?(mohlala madila, motsoko, lebake)	Ee		1
	Aowa		2
42. Ge ele Ee, o somisa eng?	_____		
43. Tsa sedumedi?	Mokreste		1
	Moseleme		2
	Tse dingwe		3
44. Lefelo la matswalo? Laetsa gore kae	South African		1
	Other		2

Molaetsa: swaya Karabo ya maleba ka X

Karolo B: Lebaka la go paledisa go tla kliniking mo ngwageng wa go feta.

		X	
45. Mathata a dinamelwa? Ge ele Ee, hlalosa	Ee		1

	Aowa		2
46. O lebetse lebaka la gago la kliniki?	Ee		1

	Aowa		2
47. O kwele okare ga se o ikemisetse go hlahlobiwa?	Ee		1
	Aowa		2
48. O tsea dipilisi tsa go feta ye tee ? Ge ele Ee,hlalosa_____	Ee		1
	Aowa		2
49. Sale wa ba le ditlamorago tsa meriana? Ge ele ee, tse di feng?	Ee		1
	Aowa		2
50. O be o sa botswa ka lebaka la kliniki?	Ee		1
	Aowa		2
51. O ke kwele bokaone?	Ee		1
	Aowa		2
52. A se wa botsa motho ka maemo a ka a maphelo bjalo go boima go tla kliniking?	Ee		1
	Aowa		2
53. Go boima go amogela seemo sag ago sa HIV ?	Ee		1
	Aowa		2
54. A se wa fiwa mokgwa o mongwe wa go tswela pele ka bophelo?	Ee		1
	Aowa		2
55. Ga o bonolo o hwetsa sebaka sa go tla kliniking ge o le mmerekong?	Ee		1
	Aowa		2

**SECTION C: What are your Reasons for missing appointment?
(Health System related factors)**

		X	
56. Kliniki e bigoli bo bo kae?	1-3 Km		1
	4-5 km		2

	Go feta 6km		3
57. Nako ya go leta kliniking?	1/5 to 2 hours		1
	3-5 hours		2
58. Ke mothaladi ofe o motelele go di feta ka moka?	Go hlahlobiwa		1
	Go ntsha faele		2
	Go hwetsa meriana		3
59. Tshwaro ya baaki e bjang ,laetsa ka dinomoro 1-10. 1 Ele tshwaro e mpe ,10 ele tshawaro ye botse.	0-10		
60. Difaele tsa batho ba go phela ka twatsi ya HIV di fapana le tsa balwetsi ba bangwe?	Ke a dumela		1
	Ee goba aowa		2
	Ke a gana		3
	Keg ana kudu		4
61. Kliniki e kile ya felelwa ke dihlare?	Ee		1
	Aowa		2
62. O gomisitswe ka lebaka la go hloka pukwana y abo itsibiso/passport?	Ee		1
	Aowa		2

Re a leboga ge o gonna go tsea karolo ka gare ga resetshe ye.

Karolo D (E tlatswa ke resetsha)

63. Molwetsi o lofile neng go tla kliniking(ngwaga)?			
64. E be ele lebaka la mohuta mang?	La mathoma	La go latela	La bolwetsi
Mosaeno wa resetsha			

Annexure G: Letter of permission to Department of Health

P.O BOX 2170

POLOKWANE

0700

To: Limpopo Department of Health

Provincial Research and ethics

Dear Sir/Madam

Re: Requisition for permission to conduct research

I hereby request the permission to conduct the study among patients at the health centre for Master of Public Health degree at the school of public health (University of Limpopo). I am required to submit a research report in a partial fulfilment of my degree.

The title of my study is "Factors contributing to missed clinic appointments for people living with HIV on Antiretroviral therapy at a Health Center in Capricorn District".

Information obtained from this study will assist in establishing the association between the demographic factors and the contributing factors and therefore assist in improving the adherence to treatment.

Thanks for your assistance in this regard.

Regards

Marule Kholofelo Yvonne (Researcher)

Annexure H: letter of permission to operational manager

P.O BOX 2170

POLOKWANE

0700

Limpopo Department of Health

Operational manager health centre

Dear Sir/Madam

Re: Requisition for permission to conduct research

I hereby request the permission to conduct the study among patients at the Health Center for Master of Public Health degree at the school of public health (University of Limpopo). I am required to submit a research report in a partial fulfilment of my degree.

The title of my study is **“Factors contributing to missed clinic appointments for people living with HIV on Antiretroviral therapy at a Health Center in Capricorn District”**.

Information obtained from this study will assist in establishing the association between the demographic factors and the contributing factors and therefore assist in improving the adherence to treatment.

Thanks for your assistance in this regard.

Regards

Marule Kholofelo Yvonne (Researcher)



Certificate of Editing

This is to certify that the mini-dissertation:

Factors contributing to missed clinic appointments by People Living with HIV/AIDS on Antiretroviral Therapy at a health centre in Capricorn District Limpopo Province, South Africa

by

Marule Kholofelo Yvonne

(201207574)

Has been edited and proofread by Mmatlou Consultancy and Events.

A handwritten signature in black ink, appearing to read 'Matlou Kgole', is placed on a light blue rectangular background.

Date: 20 December 2022

Matlou Lebogang Kgole

Director & Head Research Writing Consultant