International Journal of Medical Science and Health Research

Vol.9, No. 03; 2025

ISSN: 2581-3366

Determinants of Antiretroviral Treatment Default in People Living with HIV at a Community Health Centre in Northwest Province, South Africa

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doi: 10.51505/ijmshr.2025.9304 URL: http://dx.doi.org/10.51505/ijmshr.2025.9304

Received: May 08, 2025 Accepted: May 14, 2025 Online Published: May 24, 2025

Abstract

Human Immunodeficiency Virus is one of the most serious public health threats of the 21st century, with over 40 million people having died and more continuing to die due to HIV-related diseases. Although Antiretrovirals (ARVs) are to mitigate the effects of HIV exist, there are People Living with HIV (PLHIV) who still default from Antiretrovirals, putting their health at risk. This study explored the factors contributing to ARV default among PLHIV at a Community Health Center in Northwest Province, South Africa. The study objectives were to explore personal and socio-economic barriers to HIV treatment adherence, and health systems barrier to HIV treatment adherence.

Methods:

This study employed a qualitative phenomenological design. Data was collected using a semi-structured interview and interview guide as a data collection tool. Individual in-depth interviews were conducted with 12 purposively selected PLHIV aged 18–40 years who had defaulted from ARVs by over 30-90 days and traced back to the clinic. Tesch's framework was used to generate themes from the data.

Results:

The main factors contributing to ARV default included health-related factors such as health professionals' negative attitudes and their lack of confidentiality, as well as long waiting times at the clinic and shortage of ARV medication; patient's personal factors such as non-disclosure of one's HIV status, fear of discrimination from the community members, treatment side effects, and denial of one's HIV status; and socioeconomic factors such as financial difficulties, including lack of transport money to the clinic and work commitment.

Conclusion:
Several factors have been identified as contributors to ARV treatment default in PLHIV. Intervention policies aimed at reducing the PLWHIV financial burden, long waiting times at the clinic, and strengthening post-HIV diagnosis counselling and education are required.

Keywords: Antiretroviral treatment default, HIV, HIV treatment, People living with HIV

1. Introduction

Human Immunodeficiency Virus (HIV) remains a major health threat in the current era owing to the loss of life as a result of HIV-related illnesses (Fauci & Lane, 2020). Globally, the current estimations suggest that approximately 38.4 million individuals are infected by HIV, of these, 36.7 million are adults and 1.7 million are children (UNAIDS, 2022). Since the onset of the HIV epidemic, over 40.1 million people have died globally because of HIV-related illnesses (UNAIDS, 2023). Sub-Saharan region) has borne the brunt of this epidemic, constituting 71% of the total population of HIV-infected individuals globally (Tolmay et al., 2022). It is noteworthy that South Africa (SA) has the highest number of individuals living with HIV, not just in SSA but at a global level (Ugwu & Ncayiyana, 2022). As of 2021, roughly 8.2 million individuals in South Africa are estimated to be living with HIV (Ugwu & Ncayiyana, 2022).

The prognosis of persons infected with HIV has significantly improved over time as a result of the discovery and widespread use of antiretroviral treatment (ARV) (Schatz et al., 2022). This treatment has drastically altered the course of HIV disease, turning it into a chronic, treatable condition rather than a potentially fatal infection (Buh et al., 2022). Numerous countries have embraced universal access to ARV treatment guidelines as laid out by the World Health Organization (WHO). It has been reported that as of 2021, approximately 28.7 million PLHIV across the globe have been receiving antiretroviral treatment, with 70% (20.1 million) of them being in Africa, and the SSA region accounting for 56% (16.2 million) of this figure (UNAIDS, 2023). Notably, South Africa was one of the first African nations to adopt the "universal" access to ARV policy, and it is estimated that in 2021, 5.5 million PLHIV in the country had access to HIV treatment (Myburgh et al., 2021).

The WHO has recently revised its clinical guidelines for the treatment of HIV by introducing a new fixed-dose formulation that supersedes the former multi-pill regimen and has now become the standard for HIV treatment (WHO, 2018). This fixed-dose option is composed of a three-drug combination that effectively suppresses HIV replication, namely tenofovir (TDF) emtricitabine (FDC) combination 300 milligrams (mg) + lamivudine (3TC) 300 mg + dolutegravir (DTG) 50 mg (TLD), which is recommended for all eligible adults, adolescents, and children aged 10 years or older weighing at least 20 kilograms (kg) (WHO,2018). In accordance with these new guidelines, South Africa has adopted dolutegravir/lamivudine/tenofovir (TLD) as the primary first-line regimen of choice, replacing the previous regimen called tenofovir/emtricitabine/efavirenz (TEE) or tenofovir/emtricitabine/efavirenz, which has been used for most adults and children starting treatment after the age of 10 years (NDoH, 2019).

Adherence to ARV constitutes a critical determinant for achieving optimal outcomes in HIV management (Robbins et al., 2014). This serves as an effective strategy for HIV prevention, eliciting a substantial reduction in the transmission of the virus among PLHIV when they maintain low or undetectable viral loads (Altice et al., 2001; Robbins et al., 2014). This, in turn, leads to improved survival rates and reduced hospitalizations in PLWHIV. However, poor adherence to ARV medication results in disease progression, emergence of drug-resistant viruses, increased morbidity, hospitalization, mortality, and a consequent escalation in healthcare costs (B Nachega et al., 2011; Munro et al., 2007). A systematic review conducted in SSA to investigate the status of patients who had initiated ARV treatment revealed that after one year, 25% of the patients had defaulted from treatment, and this figure increased to 40% after two years (Miller et al., 2010). The majority of these patients were classified as lost to follow-up, with only a minority having died (Miller et al., 2010). In South Africa, of the estimated 7.9 million PLHIV in 2019, 62% initiated ARV treatment, but only 54% achieved viral suppression through adherence to their treatment regimen (Nyasulu et al., 2021).

In an effort to enhance adherence and accessibility to ARV, the National Department of Health (NdoH) in South Africa initiated the Central Chronic Drug Dispensing and Distribution (CCMDD) program in 2014 (NDoH, 2022). This decentralized ARV delivery program serves as an additional measure to enhance accessibility to ARV, catering to clinically stable patients who have adhered to the treatment and honored their clinic appointments for a continuous period of six months or more to receive ARVs through external pickup locations, such as post offices, churches, community-based organizations, selected pharmacies, or clinic pickup points in designated queues (NDoH, 2022). Despite efforts for HIV management by the international communities and South African government, there are still patients who cease adhering to ARV treatment, subjecting themselves to heightened risks of morbidity and mortality attributable to HIV-related conditions.

Several factors have been identified as determinants of HIV treatment adherence. Economic factor is one of the determinants that has been identified as a hindrance to patients' adherence to ARV treatment (Azia et al., 2016). Patients' inability to afford food and proper nutrition before taking medication resulted in their failure to take their ARV treatment, as they are typically impoverished and unemployed (Azia et al., 2016). As a result, it is unsurprising that numerous studies have examined the cost of obtaining ARV treatment, as it relates to obstacles to treatment adherence. Transportation expenses have emerged as a primary factor leading to the discontinuation of ARV treatment in PLHIV in India (Kumarasamy et al. 2005). To avoid default, some patients resort to selling valuable possessions (Kumarasamy et al., 2005). This discovery holds significant importance, as it highlights that individuals are aware of the significance of adhering to treatment but are impelled to default due to factors beyond their control. In Africa, for example, Malawi PLHIV have also been observed to discontinue treatment because of the economic expenses associated with transportation (Chirambo et al., 2019). Although free ARV drugs are available in certain locations in Malawi, patients are obligated to collect them in person (Chirambo et al., 2019). Similar strategies are used in Zambia and South

Africa, where patients have cited transportation expenses and the requirement to pay for services dispensed at ARV centers as contributing factors to poor adherence (Azia et al., 2016). In addition to transportation expenses, visiting clinics also demands that patients forfeit other activities, such as their primary source of income (Azia et al., 2016).

Several studies have highlighted several social determinants that impede optimal adherence to ARV treatment. Specifically, socially related factors that have been delineated to hinder adherence to ARV include fear of unintended disclosure when using the ARVs clinic, anxiety stemming from inadvertent disclosure of ARV usage while interacting with community HIV care providers, fear of inadvertent disclosure leading to illicit trade of ARV, apprehension of being stigmatized and discriminated against by community members, and finally, trepidation of being subjected to humiliation by certain community members if a patient's HIV status was inadvertently revealed (Azia et al., 2016). In addition, impediments to adherence to ARV treatment have been identified to include traditional medicine and religion (Van Wyk & Moomba, 2019). In a rural area of Zambia, the use of traditional medicine is commonly practiced, and individuals living with HIV are reportedly substituting ARV with traditional medicine (Van Wyk & Moomba, 2019). Since the onset of the HIV pandemic in 1981, the impact of religious beliefs on the prevention, treatment, and care of individuals living with HIV has been widely acknowledged in SSA (Azia et al. 2022). Studies indicate that countries in SSA have validated that pastoralists offer complementary therapy for HIV through prayers, holy tea, holy water, and other faith-based healing rituals (Azia et al. 2022). The utilization of traditional potions by traditional healers, holy water, and prayers to "cure" HIV has also been well documented as a barrier to ARV compliance.

Mental health factors also affect rates of ARV adherence; for example, depression has been found to be a powerful measure of ARV adherence. A study conducted in North America on PLHIV revealed that depression was one of the primary reasons why certain patients refrained from taking their HIV medication (Tyer-Viola et al., 2014). This factor assumes significant importance since depression is also known to trigger other behaviours such as excess alcohol consumption and unhealthy eating habits, which further debilitate individuals' health (Fowles et al., 2012). Individuals with depression tend to exhibit a pessimistic outlook towards life and fail to recognize the importance of maintaining a healthy lifestyle (Ofori-Atta et al., 2019).

The literature has identified various factors that could potentially contribute to HIV treatment default. It is crucial to comprehend the factors that contribute to treatment default and the interaction among these factors to develop successful and contextually appropriate interventions to support adherence. This qualitative study aimed at exploring the factors contributing to ARV default among PLHIV at a Community Health Center (CHC) in the Northwest Province, South Africa

2. Methods

2.1 Study Design

A qualitative phenomenological design was used to explore factors contributing to antiretroviral treatment default in PLHIV at the Community Health Center (CHC). This approach was chosen because the study aimed to recruit participants who had experience with the studied phenomenon (Whitehead & Whitehead, 2016).

2.2 Study setting

The study was conducted at a CHC located in Madibeng sub-district of Bojanala District municipality within Northwest province of South Africa. The CHC is located in a semi-urban area. On a monthly basis, an average of 10 000 individuals receives healthcare services from this healthcare facility, of which 1000 are individuals living with HIV and receiving ARV treatment. PLHIV visit the clinic to collect their ARVs or for viral load checks based on appointments. The facility also caters to an average of 900 additional individuals living with HIV who default from ARVs every month and have to be traced back to the facility (unpublished clinic report).

2.3 Study Participants

Purposive sampling was used to recruit PLHIV who met the inclusion criteria. The inclusion criteria were PLHIV receiving ARV treatment at the CHC, had previously defaulted by 30-90 days and traced back to the clinic, aged between 18-40 years and could speak the predominant local language (Setswana) or English. A purposive sampling approach was chosen because it allows researchers to collect data from individuals who are more likely to provide useful information and also detects hard-to-find individuals (Bless et al., 2006). This was important because it was very difficult to identify patients who had defaulted from ARVs using a random sampling method. To recruit these participants, the researcher sought assistance from Northwest Province Department of Health (DoH) officials at the CHC who directly interacted with patients on ARV treatment and were responsible for their retention in care. These officials have a database of all patients who missed their appointments by more than 30-90 days but traced back to the clinic. The period of 30 -90 days was chosen because it is what most researchers use as the threshold to label someone as having defaulted on ARV treatment, and after 90 days, the patient gets removed from the tracing list as confirmed lost to follow (Miller et al., 2010). The following steps were followed to recruit the participants:

- For confidentiality reasons, the researcher provided full details about the study and contact information to DoH officials to provide prospective participants.
- DoH officials briefed prospective participants about the study, and those who expressed an interest in participating in the study sent a free “call-back” message to the researcher.
- Upon receiving confirmation from prospective participants, the researcher arranged individual meetings with the participants in a convenient place to determine whether they met the inclusion criteria.

The appropriate size of the study sample was determined based on data saturation. Data saturation is a tool used by researchers to ensure that adequate quality data is collected to support a study (McGrath et al., 2019). It was expected that a minimum of 12 participants would be required (McGrath et al. 2019). Data saturation for this study was reached with a sample size of 12 PLHIV (three males and nine females).

2.4 Data collection

Semi-structured interview guide and digital audio recorder were used to collect data. Data were collected between August and September 2023 in the CHC neighborhood. One on one interviews which lasted approximately 45 were conducted at a convenient private place chosen by the participant.

2.5 Data Analysis

To analyse the data, the researchers adhered to Tesch's framework suggested for qualitative data analysis (Creswell, 2009). The first author (TMM), who had received training in qualitative research, conducted the analyses. The researcher listened to the audio recordings several times, transcribed the data verbatim, and read the transcripts several times to become familiar with the data to aid in identifying patterns. Similar ideas were grouped and identified as codes and further categorized into themes and subthemes.

2.6 Trustworthiness

Qualitative researchers use various techniques to enhance the credibility or rigor of their studies, and these techniques fall within the domain of improving the trustworthiness of a study (Hadi & José Closs, 2016). To ensure that this study was trustworthy, the researchers established credibility, dependability, transferability, and confirmability. For the study to be credible, the researchers ensured that the results presented were based on the participants' views. This was achieved by minimizing bias and using triangulation. Triangulation was achieved through peer debriefing, also referred to as analytic triangulation (Noble & Heale 2019). An expert in the field of research who was not directly involved in the study provided an alternative perspective and explanations of the data. Regular discussions between the researchers were also conducted during data collection and analysis. The second investigator (JWM) is experienced in qualitative research. Dependability was achieved by conducting an audit trial of all the processes performed in the study. Recordkeeping was important because it helped to demonstrate a clear and auditable decision trail and ensured that interpretations of the data were consistent and transparent. To ensure transferability, thick descriptions of all aspects of the study were provided so that users could judge whether it applies to their situation (Munthe-Kaas et al., 2020). To ensure confirmability, the researchers checked with participants if the study findings matched their experiences and ideas and were not inclined to the characteristics and preferences of the researchers (Stewart et al., 2020).

2.7 Ethical considerations

This study was approved by the Research Ethics Committee, Faculty of Health Sciences, University of Pretoria (215/2023), and permission to conduct the study was granted by the Northwest Department of Health. Written informed consent was obtained from all participants. Participants were briefed about the purpose of the study, that their participation would be voluntary, that they would not receive any payment for participation, that the data collected would be kept confidential and secure, and that the researchers would be the only people who would have access to the data. Participants were also informed that they were not required to provide their names during the study, and that their names would not appear in the final report of the study. Before the data collection process commenced, participants who took part in the study consented to participate and to be audio-recorded. Since HIV is a sensitive topic, the researcher identified a social worker who agreed to provide pro bono debriefing sessions for those who may have been unsettled by discussing one of the most traumatic events in their lives.

3. Results

Twelve participants were interviewed, and data saturation was achieved. The majority of participants were female (n=9). The participants' ages ranged from 27 to 40 years old. Most participants were single (n=10), unemployed (n=6), and living with their families (parents and siblings) (Table 1). Most participants opted to be interviewed vernacularly.

Table 1: Participants characteristics

Participants characteristics	***Frequency***
Gender	
Male	3
Female	9
Language	
Setswana	1
English	3
Both	8
Marital status	
Single	10
Married	1
Separated	1
Employment status	
Employed	4
Unemployed	6
Self employed	1
Living arrangements	
Alone	1
With spouse	1
With family	7
With partner	3

3.1 Themes and sub-themes

Three themes and ten sub-themes were generated from the data. (refer to Table 2 below)

Table 2: Summary of themes and sub-themes

Themes	***Sub-themes***
Health system factors	• The attitude of healthcare professionals • Lack of confidentiality by healthcare professionals • Long waiting time • Shortage of ARV medication
Personal factors	• Non-disclosure of one's HIV status • Fear of stigmatization • Treatment side effects • Denial of ones HIV status
Socio-economic	• Financial difficulties • Work commitment

3.1.1 Health systems barrier to HIV treatment adherence

- *The attitude of healthcare professionals*

Most participants cited the attitude of the healthcare professional as a contributing factor to their defaulting on ARV treatment. Participants reported that health care professionals, specifically nurses, exhibited a lack of respect for them. For example, they publicly shouted at them in the presence of other patients for missing one month of ARV collection. As a result, participants reported that whenever they considered going to the clinic, they decided against it because of the expected negative treatment by health professionals.

"Joh! I have tried so many times to tell them that I am not working, which is the reason why I fail to come to the clinic but instead of assisting me, they insult me. So, the way that they talk to me, even when I have money to go to the clinic, I fear because they don't know how to talk to people those health care professionals. They will shout at you when you are just entering the door and at that time other people will be watching and thinking that it means I am sick which is why I don't go to that clinic". (Male participant, #03, age 30)

- ***Lack of confidentiality by healthcare professionals***

Participants reported that healthcare professionals at the clinic don't uphold confidentiality. They reported that healthcare workers violate their privacy by publicly talking about their HIV status in front of other community members who came for a different consultation. As a result, they hesitate to go to the clinic to pick up their treatment out of concern that everybody they encounter at the clinic will be aware of their condition.

"The way that they treat us at the clinic sometimes makes me not want to go there. All the people in this community go to that clinic and if you go there, everyone will know that you are positive because there is no privacy, the nurses just talk about your status in front of everyone, so that is the reason why I hardly go to collect my medication because I don't want my status to be known by everyone". (Female participant, #11, age 35).

- ***Long waiting time***

The participants expressed their discontent with the long waiting time in the queue before being attended to by the healthcare professionals. They expressed that they would go early in the morning to the clinic for treatment collection but only receive assistance late because of overcrowding and poor management of the queues. This discouraged them from going to the clinic to collect their treatment, resulting in a treatment default.

(Shaking his head) "bro! the clinic is always full, I think that is part of the reason why some people don't go to collect their medication. To get help, you need to go to that clinic very early or else you will come back very late". (Male participant, #12, age 31).

- ***Shortage of ARV treatment***

Some participants expressed that they understood the importance of adhering to HIV treatment; however, when they went to the clinic, there were instances when they had been told that there was a shortage of medication, thereby impeding their adherence to the treatment regimen and subsequently leading to defaulting.

"At times you find that the people that are supposed to give us our medications are not at work, times we are told that there's shortage of medication stock." (Female participant, #04, age 40).

3.1.1 Personal and socio-economic barriers to HIV treatment adherence

- ***Non-disclosure of one's HIV status***

Participants reported that not disclosing their HIV status to people close to them also contributed to default ARV treatment. Because they have not disclosed their status, they are afraid to visit the clinic every month to collect treatment because they will be asked why they always go to the clinic.

"Uhm, eish, the problem is that I haven't told anyone yet. That I'm on treatment so they will be surprised that I'm always going to the clinic without a reason. I'm also unable to disclose". (Female participant, #01, age 33).

- ***Fear of stigmatization***

Fear of stigmatization was another factor that participants reported contributing to ARV treatment default. They indicated that they default on treatment because they do not go to the clinic due to fear that people will see that they are on treatment, and they will be subjected to stigma in the community.

“There are people that I know that are working at the clinic so I’m afraid of the stigma. You know people talk a lot. So sometimes seeing people that you know where you take treatment, that can destruct you a lot then you end up not going to the clinic”. (Female participant, #02, age 40).

- ***Treatment side effects***

Regarding side effects, some participants stated that the reason they defaulted from HIV treatment was because of the side effects they experienced after taking the treatment, which is why they decided to stop treatment in order to avoid an illness caused by the drug.

“I think also side effects of the medication, I felt very sick when I started taking treatment and sometimes, I would skip days without taking avoiding side effects”. (Male participant, #12, age 31).

- ***Denial of ones HIV status***

Some participants also stated denial of their HIV status as a contributory factor to them defaulting from treatment. Those in denial of their HIV status were participants who had been living with HIV for less than 3 years, and because they had not accepted their status, they did not see the need to go to the clinic for treatment.

“(Looking down) eix honestly, I still feel like it is a mistake, I mean look at me, I don’t look like someone who is sick. I sometimes ask myself why am I taking treatment, am I really sick? I have tested I think 4 times since June last year at different clinics to make sure that it is really true. It is difficult to accept and that is the reason why sometimes I don’t see the reason for collecting these pills because I don’t feel sick”. (Male participant, #12, age 31).

- ***Financial difficulties***

The majority of participants also cited the cost of transportation to the clinic as a challenge because most were not employed. They stated that they needed to have money for transportation to go to the clinic, and if they did not have money in a particular time, they were not able to collect their treatment, causing them to be defaulters.

“Uhm, as I mentioned before that I am unemployed, i sometimes don’t have the money to go for my checkup, so I just don’t go. Sometimes I take the little money that I have and buy things we need in the house.so that makes me default on my medication”. (Female participant, #05, age 29).

- ***Work commitments***

Work commitment is another factor that has been reported by some participants to contribute to treatment default. Some participants indicated that their ARV collection dates clashed with their work, and they could not ask for leaves/days off every month to go to the clinic

"Since I started seven years back yeah I've missed my appointments so many times this is because I told you that I'm working at Rustenburg so I hardly get time to come back and collect my medication and to be able to come back I need to ask for leave at work and at the mine is very busy so they don't give you so many days and treatment you have to come and collect it every month so I don't get time to come back every month and collect medication". (Male participant, #10, age 38).

4. Discussions

This study aimed to explore the factors that contribute to ARV treatment defaults in PLHIV. Several factors contributing to ARV treatment default in PLHIV have been identified. These factors included the attitude of healthcare professionals, lack of confidentiality by healthcare professionals, long waiting times at the clinic, shortage of ARV medication, non-disclosure of HIV status, fear of discrimination, treatment side effects, denial of HIV status, financial difficulties, and work commitments.

Most participants cited the attitude of healthcare professionals as reason for them to default. Disrespectful behavior and shouting at patients by nursing staff discouraged them from attending the clinic to receive ARV treatment. This finding is in accordance with a study by Dapaah (2016) that was conducted at two Ghanaian hospitals to observe healthcare workers providing voluntary counselling and testing (VCT) and ARV, which concluded that healthcare professionals are an indispensable part of the healthcare system and their attitudes towards patients can significantly influence treatment outcomes. Negative or dismissive attitudes among nursing staff can demotivate patients, especially those with HIV, leading to decreased ARV adherence (Dapaah, 2016). Healthcare professionals' inability to uphold confidentiality was also cited as a contributory factor to ARV defaults in PLHIV. When dealing with PLHIV, healthcare professionals' actions of publicly talking about one's HIV status violate the privacy of patients, making them reluctant to go to the clinic because of fear that other people will know about their status. This finding is supported by a study conducted in rural Eswatini on the barriers to ART adherence by Becker et al. (2020), who found that confidentiality is a fundamental element of healthcare, particularly in the context of HIV. Lack of confidentiality by healthcare professionals can have a significant impact on adherence to ARV in PLHIV. If PLHIV feels that their personal information is not safe and secure, the lack of trust can weaken the relationship between patients and healthcare professionals, leading to lower ARV adherence rates and potentially negative health outcomes.

The long waiting time in queues at the clinic is another contributory factor to ARV default in PLHIV that this study found. Participants reported that even when they go early to the clinic to collect their ARVs, overcrowding and poor management of queues lead to having to wait for a long time before being served, and as a result, they opt not to go. This is consistent with the findings of a study conducted by Azia et al. (2016) at a Cape Town regional hospital on barriers to ARVs by patients, which found that long waiting times and queues at the hospital had a significant impact on ARV adherence among PLWHIV. This tends to frustrate patients and discourage them from attending their hospital appointments regularly, leading to missed doses of ARV medications and ultimately reducing the effectiveness of treatment and potentially increasing the risk of drug resistance (Azia et al., 2016).

The study also found that a shortage of ARVs in the clinic is a contributing factor for PLHIV to default on ARV treatment. Some participants mentioned that they consistently attended their monthly appointments for treatment collection, but occasionally, they were informed that the facility had run out of ARV medication. Consequently, the participants defaulted on their ARVs because of their unavailability. These findings resonate with those of a study conducted in South Africa by Hwang et al. (2019), which focused on stockouts of ARV and TB medication in 3,547 clinics nationwide. The study revealed that 25% of the clinics reported experiencing stockouts of both ARV and TB medications every month. This resulted in patients coming to the facility, leaving them without medication, or receiving an incomplete regimen. According to Remien et al. (2019), a shortage of ARV drugs induces significant psychological distress among patients, which further contributes to treatment default. PLHIV already faces numerous challenges, including stigmatization and discrimination, and the stress of struggling to access life-saving medications exacerbates anxiety, depression, and feelings of hopelessness (Remien et al.,2019). Consequently, patients may become overwhelmed, leading to poor mental health, decreased motivation, and reduced commitment to adherence to their medication regimen, resulting in default (Remien et al.,2019).

Non-disclosure of HIV status was also found to be a contributory factor in ARV treatment default among participants in this study. Participants reported that they defaulted from treatment because they feared that their partners, family members, and community members would become suspicious if they frequented the clinic every month to collect their treatment. As a result, they chose to skip some appointments to avoid arousing suspicion as they had not disclosed their HIV status. Similar findings were reported in a study by Chirambo et al. (2019) on the factors influencing adherence to antiretroviral treatment among adults accessing care from private health facilities in Malawi. This study found that fear of disclosing one's status was the most common reason for defaulting from ARVs. Most clients do not want their relatives or partners to learn about their positive status for fear of being stigmatized. This creates a problem, because there is no one to remember such cases when they miss drugs.

PLWHIV fear of being discriminated against was also identified by this study as a contributory factor to ARV default in PLHIV. Most participants reported that they failed to go to the clinic to collect their ARVs due to fear of being seen by other people and consequently being subjected to stigma in the community. Katz et al. (2013) shares the same sentiment that fear of discrimination due to societal stigma can significantly impact adherence to ARV treatment. Discrimination creates an environment in which PLWHIV may feel judged and excluded, which leads to concealment of their HIV status and makes it difficult to speak openly about their treatment and adherence issues.

Denial of HIV status was another cited reason for PLWHIV to default on ARV treatment. This was more common in people who were recently diagnosed with HIV (less than 3 years) who struggled to accept their HIV-positive status; as a result, they did not see the need to take their ARVs because they did not believe that they were sick. This finding is in accordance with a study conducted by Chitambo et al. (2019) in healthcare facilities in Malawi. According to the study findings, denial of HIV, often fueled by fear, stigma, and societal norms, can lead to an internal struggle that prevents individuals from acknowledging their infection. This denial can be a defense mechanism against the harsh reality of living with HIV and can lead individuals to hide their diagnosis from family, friends, and healthcare providers. Fear of discrimination or social isolation, coupled with the desire to avoid confronting one's own mortality, represents a formidable hurdle in seeking appropriate care and adherence to ARV treatment (Chitambo et al., 2019).

Findings from this study also revealed that the side effects of ARV treatment contribute to defaulting ARV treatment in PLWHIV. Some participants indicated that they chose to discontinue the treatment to avoid these side effects. Although lifesaving, ARV medications can cause undesirable side effects (Hill & Balkin, 2009). According to Hill and Balkin (2009), these may include gastrointestinal symptoms such as nausea and diarrhea, metabolic disorders, neuropsychiatric complications, and even adverse effects on the liver or kidneys. Consequently, these side effects can lead to challenges in treatment adherence of HIV-infected individuals (Hill and Balkin, 2009).

Financial difficulties are another factor identified in this study as contributing to ARV defaults in PLHIV. The majority of study participants were not working and, therefore, had difficulty finding money for transport to the clinic, resulting in them defaulting from ARV treatment. This finding was also reported in the Malawian study by Chitambo et al. (2019). Chilambo’s findings reflect that a lack of financial resources, combined with the distance that PLWHIV must travel to access health facilities, negatively impacted ARV treatment adherence. PLHIV are unable to receive treatment because of the economic demands associated with transportation and the time required to refill their medications (Chirambo et al., 2019).

The study also found that some PLHIV defaulted from ARV treatment due to work commitments. As ARV collection is expected to occur monthly, some employed participants found it difficult to visit the clinic every month because of their work schedule. Additionally, participants were unable to request time off from their employer every month to visit the clinic, which resulted in them defaulting from treatment. Gragnano et al. (2020) state that maintaining a consistent work schedule is often critical for financial stability and personal growth. However, when work obligations clash with ARV collection schedules, adherence to HIV treatment becomes a challenge (Gragnano et al. 2020). Similar findings were found in a study conducted in Uganda by Bukenya et al. (2019) on the causes of nonadherence among individuals on long-term antiretroviral therapy. This study focuses on the experiences of individuals with poor viral suppression. This study found that employed participants, who often work long periods away from their homes, carry fewer ARV tablets than they need because of fear of stigma or being seen taking daily medications, which raises suspicion of HIV infection. Additionally, that study found that other people living with HIV who are employed miss refill appointments either because of work commitments, the inability to afford transportation fares, or both.

5. Limitations

The majority of study participants were female, and the researcher was contacted by fewer males who were willing to participate in the study. This study is limited to the selected clinics where study participants were sampled because there are other government clinics providing HIV services, and the results may only be applicable in the settings in which the study was conducted. Because HIV is a very sensitive topic, recruitment of participants was a challenge as it required more time. The study sample only included PLHIV who only speak Setswana and/or English; the services of language translators could have been used in the study to accommodate those who speak other languages. Due to the sensitivity of the topic, participants could have felt uncomfortable and withheld information pertaining to factors that contributed to them defaulting from ARV treatment; however, the researcher created an environment that encouraged openness and honesty.

6. Conclusion and recommendations

Several factors have been identified that contribute to ARV treatment defaults in PLHIV. The main factors included health system-related factors such as the negative attitude of health professionals and their lack of confidentiality when assisting PLHIV, as well as long waiting times at the clinic and shortage of ARV medication at the clinic; patient's personal factors such as non-disclosure of one’s HIV status, fear of discrimination against and stigmatized by community members as a result of their HIV status, treatment side effects, and denial of one's HIV status; and socioeconomic factors such as financial difficulties such as money for transport to the clinic and work commitments. Most of the factors have been reported previously, indicating that the challenges persist and, hence, the need for action. Achieving optimal adherence to ARV treatment requires the commitment of both healthcare professionals and PLHIV. It is the responsibility of governments to ensure through health facilities that PLHIV have access to quality health care and that they receive their ARVs on time without difficulties.

This can be achieved by introducing interventions aimed at reducing PLHIV's financial burden, long wait times to receive ARVs at the clinic, and barriers, such as accessibility of the clinic due to distance. Additionally, there is a need to strengthen post-HIV diagnosis counseling for newly HIV-diagnosed patients and place more emphasis on education on HIV illness, the importance of adherence to HIV treatment, and attending to psychological issues triggered by an HIV diagnosis that may hinder adherence to treatment. There is also a need to introduce extended consultation hours and weekend consultation hours to address overcrowding and accommodate those who are unable to come during weekdays due to work. There is a need for further research to investigate factors that contribute to negative attitudes and the inability of healthcare professionals to maintain confidentiality in healthcare settings.

7. Acknowledgements

We thank all the patients who participated in this research, the Northemwest Department of Health, for allowing us to conduct the study in their health facility, and the officials at the CHC who assisted in identifying the study participants.

8. Author contributions

T. M. M. participated in the conception, design, data collection, data analysis, and drafting the initial manuscript. J.W.M. supervised the research and critically reviewed the manuscript. All authors approved the final version of the manuscript.

9. Funding sources

This research received no specific grants from any funding agency in the public, commercial, or not-for-profit sectors.

10. Conflict of interest

None

11. References

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